

# Enhancing Intangible Resources in Professional Service Firms

A Comparative Study of How Competence Development Takes  
Place in Four Firms

by

Siw Marita Fosstenløykken

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## Abstract

Over the last two decades, there has been a tremendous interest in knowledge, or competence, as the principal source of value creation and economic rent. Inspired by this current, this research project started from curiosity as to how such competence resources are developed. Professional service firms (PSFs) were found particularly interesting to study, as they are highly knowledge-intensive, compete on competence in both markets for clients and employees, and are seen as role models of competent practice. Therefore, this study set out to investigate how competence development (CD) takes place in PSFs. Based on a qualitative case-study of two communication consulting firms and two engineering design firms, the results are quite surprising:

- The PSFs are not particularly sophisticated when it comes to CD priority, CD orchestration, or efforts to enhance CD. Rather to the contrary, “laissez faire” dominates to a large degree, as short term billable hours and client demands tend to crowd out long term investments in CD.
- Considerable CD does take place on an informal basis as a by-product of daily operations. Yet, learning through project work for clients is ad hoc and far from efficiently shared throughout the organizations. In fact, there is very little management, systematization of, or reflection on CD through daily operations.
- The CD processes in each firm predominantly, yet far from ideally, match the firm’s overall strategy: an expert/creativity dominant CD process for the creative problem solving based PSF; an efficiency dominant CD process for the output based PSF; a client interaction dominant CD process for the client relation based PSF.
- The project based organization of the PSF work, combined with a variety of clients, each with their own particular demands, seems to some extent to compensate for the surprisingly low priority of CD.

By empirically addressing the development of competence as an intangible resource in PSFs, the notion of PSFs’ excellence when it comes to CD is questioned. Even the very centrality of CD as vital to PSF competitive ability is to some extent questioned. For practitioners, the study suggests that better sharing and utilization of project based learning through ‘CD coordination’ may be helpful, as this relates to a strategic role in the firm.

**Key words:** professional service firms, strategic resources, competence development, knowledge-intensive firms.



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<sup>1</sup> As of April 1<sup>st</sup> 2004, Scandiaconsult became part of the Rambøll Group, and changed its name to Rambøll Norge AS. CREO and INFO preferred to remain confidential.

I have attended for good discussions. Thanks are also due to the many researchers, who have commented on my conference papers and published articles, for enabling me to continuously improve my work. I thank Professor Rolv Petter Amdam for introducing me to the CEMP network and the researchers at SINTEF Teknologiledelse for collaboration and sharing of ideas. I thank Øyvind Thon, ex engineering design consultant, for valuable comments on a draft version of the thesis and Svein-Tore Kristiansen, University College of Vestfold, for drawing attention to relevant literature. Thanks also to Professor Bo Hedberg for inviting me as visiting scholar to School of Business at Stockholm University and to the NorFA foundation for financial support during this stay. Many thanks to SCANCOR and all its researchers for intriguing discussions during my stay as affiliated visiting scholar at Stanford University, California.

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# **1. Introduction**

Over the last two decades, there has been a tremendous interest in knowledge as the principal source of value creation and economic rent. Inspired by this current, this research project started from curiosity as to how such knowledge resources develop. Based on competence as a key example of intangible resources in professional service firms (PSFs), this study investigates how competence development (CD) takes place in PSFs. The underlying assumption is that continuous CD is particularly important to the competitive ability of such types of firms. As a point of departure, thus, this project acknowledges the importance of competence to firms' competitiveness, as it further seeks to provide an understanding of how the development of competence actually takes place.

This project was not the only one acknowledging the importance of knowledge in organizations.

## **1.1. The interest in knowledge resources**

Widespread interest came from the academic community, from within the organizations themselves, as well as from the authorities. Researchers, managers, and politicians alike emphasize knowledge as the foundation for innovation, growth, and further prosperity of private businesses as well as the public sector and the welfare of society at large.

In academia, thousands of articles "on knowledge" have recently been published. At the database Business Source Premier, a search on articles in academic journals with "knowledge" in the title resulted in over 5000 hits for the period 1996 to 2006 and about thousand hits for the period 1986 to 1996. In comparison, only 259 hits came up for the years 1976 to 1986. Lately, new journals are born with titles such as Journal of Knowledge Management, KM Review, Knowledge-Based Systems, and Knowledge Creation, Diffusion, Utilization. In addition, many special issues on the topic are available through more well established journals, such as e.g. the Strategic Management Journal (on knowledge and the firm, 1996; on the evolution of firm capabilities, 2000; on why is there a resource-based view – toward a theory of competitive heterogeneity, 2003), California Management Review (on knowledge and the firm, 1998), Human Relations (on knowledge management in professional service firms, 2001), Organization Studies (on knowledge and professional organizations, 2003), and Management Accounting Research (on management accounting and knowledge management, 2004).

Addressing managers, bookstores and airport bookshelves abound with literature on how to succeed in the new knowledge economy (e.g. Doz, Santos & Williamson, 2001), by converting intangible assets into tangible outcomes (Kaplan & Norton, 2004), by reading how smart companies can turn knowledge into action (Pfeffer & Sutton, 2000), and how to get better performance and results from knowledge workers (Davenport, 2005) - just to mention a few. On their web sites, as well as through other channels, most organizations - large and small, public and private, local and international – try to market the weight they put on knowledge, be it in terms of the services they offer (e.g. consulting companies) or the knowledge embedded in their products (e.g. technology producers and manufacturing firms). Also, the politicians want to lead future aims and directions as well as adjust to current trends and developments. Hence, education, competence policies for work life, lifelong learning, and strategic distribution of research funding are explicit areas of priority, firmly and repeatedly stated in governmental documents, plans of action, speeches, and media debates.<sup>2</sup> As of 2006, the Norwegian government decided to rename its Ministry of Education and Research to “Kunnskapsdepartementet”. A direct translation into English would be the Ministry of Knowledge.

Why this huge interest in knowledge resources? What forces drive forward the need for increased knowledge intensity in organizations? In the literature, distinctions are made between factors at macro and micro levels. The former relates to e.g. an increasingly globalized competitive environment, more unstable frame factors, development of more efficient production forms, new organizational forms due to networks and advanced technological developments, and more demanding customers. Micro factors include e.g. frequent changes in company strategies due to shorter time horizons, demand for more flexible organizations, new competence needs due to higher demands for quality and customer service, HR departments’ ability to gain support for CD aims, and different stakeholders’ wishes and demands for knowledge and personal competence development (e.g. Nordhaug, Nordhaug & Døving, 2006).<sup>3</sup>

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<sup>2</sup> See e.g. the Official Norwegian Reports NOU (1997: 25): Ny kompetanse. Grunnlaget for en helhetlig etter- og videreutdanningspolitikk; NOU (2005:4): Industrien mot 2020 - kunnskap i fokus; UFD (2003): Kompetanseberetningen for Norge; UFD (2005): En ledende kompetansenasjon? Behov og muligheter for en mer samordnet kompetansopolitikk; and OECD (2001): The Well-being of Nations. The Role of Human and Social Capital; OECD (2002): Lifelong Learning in Norway.

<sup>3</sup> For a further understanding of how and why the emphasis on “knowledge” and the “knowledge society” has emerged, see e.g. Piore and Sabel (1984), Amin (1994), as well as Castells (2000) and his trilogy (1996; 1997; 1998). More specifically, see e.g. Abrahamson (1996) on management fashion, Suddaby and Greenwood (2001)

In such a knowledge society, a growing research interest is devoted to companies that claim to (e.g. Alvesson, 2004), and by many researchers are seen to (e.g. Løwendahl, 1997; Stabell & Fjeldstad, 1998; Empson, 2000), make knowledge the foundation for their value creation and competitive power. Being one of these researchers, my primary interest was directed to professional service firms. The reason was the assumption that the development of the knowledge base in such firms, i.e. people's competence, was particularly important due to the intangible knowledge-based services PSFs offer to clients. Another assumption was that PSFs represented extreme examples of knowledge-intensive firms (KIFs), and that firms in general could have something to learn from PSFs about competence development. These assumptions were based on current research at the time (especially Sveiby & Risling, 1986; Løwendahl, 1992; 1997; Starbuck, 1992; Maister, 1993; Hamel & Heene, 1994). Also later studies which were inspired by, as well as contributing to, the contemporary interest in knowledge - and PSFs in particular (e.g. Greenwood, Li, Prakash & Deephouse, 2005) - came to support these notions. For example, Empson (2001:811) explicitly states that PSFs "*have much to teach other organizations about knowledge management*" and that accountants and consulting firms "*have been thrust into the foreground as exemplars of best practice in the field of knowledge management*". Thus, a further presentation of PSFs and what makes them particularly interesting to study, is required.

## **1.2. Professional service firms**

What are PSFs and why study them? PSFs offer services to clients within areas such as e.g. accounting, advertising, architecture, communication consulting, engineering design, legal advice, and management consulting (e.g. Maister, 1982; 1993; Greenwood, Hinings & Brown, 1990; 1994; Hinings, Brown & Greenwood, 1991; Løwendahl, 1992; 1997; Morris & Empson, 1998; Empson, 2000; Robertson, Scarbrough & Swan, 2003; Greenwood, Hinings & Cooper, 2004; Greenwood & Suddaby, 2006; Brock, 2006). Based on their services, PSFs are argued to share particular characteristics that distinguish them from other types of companies (Løwendahl, 1992; 1997). For example, relative to traditional manufacturing firms, PSF services typically involve discretionary effort and personal judgment by highly educated service providers, who are frequently also closely linked to scientific knowledge development within their area of expertise. In addition, the services typically adhere to professional norms of

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on effective marketing by consulting firms, and Donaldson (2001) on how researchers are inherently attracted to ideationalist theories (i.e. knowledge) because, as intellectuals, this is what *is* their competence.

conduct, and involve a high degree of customization and interaction with clients (Løwendahl, 1992; 1997). PSF services, thus, can be characterized as knowledge intensive and little routinized (e.g. Empson, 2000). PSFs further sort under the broader category of knowledge intensive firms (KIFs) (Løwendahl, 1997), as KIFs overlap with, and include, the notion of professional service organizations (Alvesson, 2001). However, not all KIFs deliver professional services (Løwendahl, 1997). Since PSFs rely primarily, and in many cases exclusively, on professional expertise in their value creating activities, they can be seen as extreme types of knowledge intensive firms (Løwendahl, 1997). Together, these features make PSFs interesting to study in their own right. In addition, PSFs are worthy of study because they constitute a significant sector of the economy, whether measured by their size, numbers, or influence (Greenwood et al., 2005).

In light of these features, why is it particularly interesting to study CD in PSFs? The development of competence is assumed to be vital to the long term competitive ability of PSFs for at least three reasons:

*First*, since PSFs are seen to create value for clients through knowledge-based intangible services, this makes them especially dependent on their ability to continuously develop competence in order to strengthen competitiveness vis-à-vis clients, and to recruit and retain the best staff (Maister, 1982; 1993; Løwendahl, 1992; 1997). The importance of CD is further emphasized by today's highly competitive and increasingly knowledge-based economy, which is characterized by rapid changes frequently spurred by technological advances (Drucker, 1993). This intensifies the competition in the markets for customers as well as employees in society in general, and for PSFs in particular (e.g. Løwendahl & Revang, 1998).

*Second*, PSFs are seen to create value through processes that require them to know more than their clients and competitors, either in terms of expertise or in terms of experience from similar problem-solving situations (Løwendahl, 1992; 1997). To a PSF's long-term survival, CD is thereby argued to be important in order to maintain superior competence towards clients and competitors. Thus, one of the most important strategic issues within these firms is to develop and sustain employee competence (Maister, 1993; Løwendahl, 1997).

*Third*, a basic assumption is that CD processes primarily occur to and by means of human beings (e.g. Nordhaug, 1993). According to Maister (1993:XV), PSFs represent "*the ultimate embodiment of that familiar phrase "our assets are our people"*". Due to client contact and adjustments of service delivery according to client needs, what PSFs sell is "*frequently less*



*the services of the firm per se than the services of specific individuals (or teams of individuals)*” (Maister, 1993:XV). Hence, the competence of individuals is argued to be a core asset in PSFs (Løwendahl, 1992; 1997; Maister, 1993; Empson, 2000). This makes the development of individual competence crucial to PSF value creation (Løwendahl, Revang & Fosstenløkken, 2001) and competitive ability.

Despite its importance, however, empirical PSF research on this subject is scant. Even though research on PSFs is growing, it is still in a relatively early phase of development. In particular, the research focus has to a large extent been on the management of PSFs (e.g. Sveiby & Risling, 1986; Alvesson, 1989/1995; Løwendahl, 1992; 1997; Maister, 1993), on institutional change and archetypes (e.g. Greenwood & Hinings, 1993; 1996; Greenwood & Lachman, 1996; Greenwood, Suddaby & Hinings, 2002; Greenwood, Hinings & Cooper, 2004; Greenwood & Suddaby, 2006; 2006; Brock, 2006; Brock, Powell & Hinings, 2007), on identity and rhetoric from a critical management studies perspective (e.g. Alvesson, 1993; 2001; 2004; Alvesson & Kärreman, 2007), and on the role of knowledge from various angles such as codification (Morris, 2001; Suddaby & Greenwood, 2001), internationalization (Raymond & Mittelstaedt, 2001; Hitt, Bierman, Uhlenbruck & Shimizu, 2006), mergers (Empson, 2000; 2001b), promotion and career mobility (Burke, 1995; Morris & Pinnington, 1998; Malos & Campion, 1995; 2000), reputation (Greenwood et al., 2005; Zabala, Panadero, Gallardo et al., 2005), and organizational performance (Hitt, Bierman, Shimizu & Kochar, 2001; Stumpf, Doh & Clark, 2002; French, Kelly & Harrison, 2004).<sup>4</sup> Hence, based on these arguments and that the study of the development of competence resources is an approach rarely pursued in PSF research, it becomes important to investigate and understand *how professionals develop competence* within such firms.

This exceptional emphasis on knowledge, as discussed so far, may lead us to think that knowledge is something new. While the explosion of interest in knowledge may be different than ever experienced before, knowledge as such is not a new label or phenomenon. As Nonaka and Takeuchi (1995) remind us, the study of human knowledge is as old as human history itself. What seems to be novel, however, is the focus on knowledge as a competitive resource in firms. In this respect, the resource-based view (RBV) of the firm has become one of the most prominent theoretical perspectives in strategic management (e.g. Acedo, Barroso & Galan, 2006). This study builds on some of the key thoughts of the RBV.

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<sup>4</sup> Sveiby and Risling (1986) and Alvesson (1989) use the term “knowledge-intensive firms”. However, the firms they refer to can be classified as PSFs, based on the definition by Løwendahl (1997).

### 1.3. The resource-based view of the firm

Based on the notion that competence represents a critical resource for PSFs, this study is anchored within the resource-based view of strategy, which emphasizes intangible resources as key to value creation and competitive ability. The RBV (e.g. Dierickx & Cool, 1989; Barney, 1991; Amit & Schoemaker, 1993; Peteraf, 1993; Ahuja & Katila, 2004; Acedo et al., 2006) suggests that firm heterogeneity underlies competitiveness, and that resources form the basis for differential company performance. As stated previously, a lot of attention has been given to the importance of firms' intangible resources (Itami, 1987; Løwendahl, 1992; 1997; Teece, Pisano & Shuen, 1997) such as knowledge (e.g. Grant, 1996; Spender, 1996; Nonaka, Nishiguchi & von Krogh, 2000; Carlsen, Klev & von Krogh, 2004) or competence (e.g. Nordhaug, 1993; Hamel & Heene, 1994; Sanchez, Heene & Thomas, 1996; Nordhaug et al., 2006) as the primary drivers of competitive ability.

But, how do firms get to the point where they have superior intangible resources? This question is considered to be fundamental to business and strategic management. According to Teece et al. (1997:514-515), "*It is in this second dimension, encompassing skill acquisition, learning, and accumulation of organizational and intangible or 'invisible assets' (Itami and Roehl, 1987), that we believe lies the greatest potential for contributions to strategy*". Yet, such processes have received little empirical attention within both strategy and PSF research. Only very recently have researchers come up with empirical material on the subject, with an aim to explain firm heterogeneity. Questions such as where do resources and capabilities come from (Ahuja & Katila, 2004; Ethiraj, Kale, Krishnan & Singh, 2005), and an identification of human capital and learning as a source of sustainable competitive advantage (Hatch & Dyer, 2004), have been investigated and tested through large surveys. While these studies point out important capabilities, trace paths of resource emergence, and show that investments in firm-specific human capital have a significant impact on learning and firm performance, none of them investigates how competences actually develop. Quite to the contrary, resources have typically been treated in an ex post manner, as a given asset which can bring about good results, and, possibly even competitive advantage. In contrast, this study points to the importance of investigating the ex ante development of resources in order to further understand the antecedents which may shape firm performance and competitive ability. Therefore, by building on the above premises, with references to both PSF and resource-based strategy literature, this study seeks to investigate the following research question:

- How does competence development take place in PSFs?

Focus is on the ways in which competence development *actually* takes place. In this respect, Tsoukas (1996) emphasizes that it is essential not only to study what the company says it does (in terms of its top managers) in order to develop competence, but also how employees say that they develop competence in the firm - both regarding particular investments in learning and as part of daily work (Itami, 1987). It also seems important to identify what facilitates and constrains processes of CD in PSFs, in order to understand what activities to improve, maintain, and nurture (Nordhaug, 1993). Further, previous studies of competence (e.g. Nordhaug, 1993; Løwendahl & Nordhaug, 1994) show that people develop different types of competences at work. Therefore, it seems relevant to investigate the kind of competence that is developed. As a result, the overall research question is amplified through the following sub questions:

- (i) What is done from the firm's side in terms of approach to and orchestration of competence development, i.e. the firm's CD policy?
- (ii) How do professionals develop competence through investments in such processes?<sup>5</sup>
- (iii) How do professionals develop competence through daily operations?
- (iv) What facilitates and constrains competence development in the firm?
- (v) What type of competence is being developed?<sup>6</sup>

Based on these research questions and the theoretical positioning of the study, the research design is as follows:

*First*, empirical resource-based research focuses primarily on large-scale surveys and secondary data (e.g. Miller & Shamsie, 1996; Hitt et al., 2001; McEvily & Chakravarthy, 2002; Ahua & Katila, 2004; Hatch & Dyer, 2004; Ethiraj et al., 2005), investigated at a macro level (e.g. Rumelt, 1991; Bowman & Helfat, 2001). Rouse and Daellenbach (1999:489) claim that *“while strategic management research during the last two decades has shifted from a focus on environmental factors to intangible resource-based factors in the search for sources of sustainable superior performance, the*

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<sup>5</sup> In this study, the term ‘professionals’ refers to the people working in PSFs, as managers or regular employees who work on client assignments in order to solve client problems.

<sup>6</sup> The research questions were redefined several times during the research process. The questions set forth here represent the result of this process. A more detailed discussion and further clarification of the research questions are provided in chapter 2 with regard to theory and in chapter 3 with regard to methodology.

*dominant research approach has not changed significantly*". They further argue that since only firms with unique resources and competences are assumed to have the potential for competitive advantage, the very nature of such resources suggests that large, quantitative, single time period samples of average performing firms using secondary sources of data from single industries, will not help disentangle the key factors that may provide sustainable competitive ability. Therefore, this study of CD in PSFs applies a qualitative approach that emphasizes detail and nearness to the empirical field based on primary data provided by people in different types of good standing firms. The empirical investigation is based on an exploratory design with open interview questions. In addition, written materials are used to supplement the interviews.

*Second*, in PSF as well as RBV research, the level of analysis has typically been the firm level, where the "firm" is typically aggregated from top management groups or managers in general (Rouse & Daellenbach, 1999). In contrast, Nordhaug (1993) claims that in order to fruitfully investigate the development of competence in firms, there is an apparent need to track the analysis down to the people in the organization. In this regard, Tsoukas (1996) questions what and who is the firm. Who are relevant and representative agents of the organization? Is it the CEO, a particular group of managers, or maybe all the people employed in a firm? Tsoukas (1996) looks at a company as a distributed knowledge system in which no *single* agent can specify in advance what kind of practical competence is going to be relevant, when and where. The reason for this is that the particular *circumstances* each individual is faced with are "*bound to be, to some extent, unique*" (Tsoukas, 1996:12). This highlights the importance of investigating a variety of professionals at different levels, rather than restricting the study to managers as representatives of the firm as a whole. Therefore, this study includes the perspectives of a variety of informants, managers as well as non-managers, with different experience, education, tenure, age, and gender. How professionals develop competence, thus, is primarily investigated based on how individuals say that he or she develop his or her competence.

*Third*, PSF and RBV literature is dominated by studies of single industries (e.g. Elfring & Baven, 1994; Rouse & Daellenbach, 1999; Baark, 2001). In contrast, this study includes firms representing multiple industries in order to investigate whether for example industry and organizational context gives variation with regard to how CD processes take place across PSFs. In order to accentuate, as well as balance, differences, two engineering design firms and two communication consulting firms are chosen.

Overall, this study sets out to shed light on some processes, i.e. competence development processes, which are assumed to be important to the competitive ability of PSFs. The aim is to develop a better understanding of how CD takes place in PSFs. Hence, the intention is not to investigate competence development *per se*, or measure competence - as is common in traditional survey studies (e.g. Henderson & Cockburn, 1994; McGrath, MacMillan & Venkataraman, 1995). Moreover, based on e.g. Løwendahl (1992; 1997) and Maister (1993), it is likely to assume that some degree of learning and development takes place in PSFs, because they by definition do little routine-based work. In particular, this seems to be the case when competence is broadly defined (see Nordhaug, 1993), which is the approach taken in this study.

On the other hand, it is not given that competence and efficiency are enhanced all the time. Nor that all learning is strategically important for the firm. In this respect, the RBV poses the challenge of how resources in the form of routines and assets are configured to provide sustainable rents. Hence, Nordhaug (1993:245) claims that there is a strong need to investigate more closely the forces governing human resource development in organizations. His argument is that this represents a necessary step toward establishing theoretical and empirical links between firms' human resource investments and management on the one hand, and their internal efficiency and external effectiveness on the other. However, according to Johnson, Melin, and Whittington (2003), it may not be possible to link such forms of resources directly to organizational performance. Therefore, based on Løwendahl (1992; 1997), Starbuck (1992), Maister (1993), Morris and Empson (1998), and Empson (2000), this study assumes that competence development is important for a PSF's competitive ability, vis-à-vis current and potential clients as well as professionals. Hence, the study does not aim to document *that* CD is important to competitive ability, *that* strategically important CD takes place, or to what degree the CD taking place leads to improved competitive ability, better firm performance, or even competitive advantage. Since the connection between CD and firm performance is not investigated directly, only speculations about implications for competitive ability can be suggested based on this research. Rather, this investigation addresses *how* CD *actually* takes place - an approach rarely pursued in PSF and RBV studies. As a primary step in this area, this study aims at providing new insight about competence development, which again may help PSFs to better facilitate such processes.

By addressing competence in firms, this study also relates to a debate which has to do with epistemology. Since the epistemological view on competence has major impact on the positioning of the study, this issue is addressed below.

#### **1.4. Epistemological approach**

When conducting research, each researcher usually approaches a subject with conscious and unconscious, as well as explicit and implicit assumptions about the nature of the world and how this should be investigated (Burrell & Morgan, 1979). Therefore, according to several authors (e.g. Astley & Van de Ven, 1983; Burrell & Morgan, 1979; Gummesson, 1991; De Witt & Meyer, 1998), it is important to lay open the orientation that the study builds on regarding approach to competence in PSFs. However, the role and nature of knowledge or competence in organizations is a complex and long-standing debate. According to e.g. Empson (2001a), most research on competence in organizations is either functionalist or interpretive in nature. She claims that the functionalist perspective builds on economics as the disciplinary foundation and seeks to identify valuable competence within firms and to develop appropriate mechanisms for effective competence management. The RBV represents an example, as organizations are conceptualized as mechanisms for utilizing competence, transferring competence capabilities, renewing competence bases, and measuring competence assets. As discussed previously, the firm and its competence base is the primary unit of analysis, and competence is often viewed as an objectively defined commodity, where exchanges of competence among individuals are governed by the functioning of an implicit internal market (Empson, 2001a). However, an alternative interpretive approach challenges these fundamental views (Empson, 2001a). The interpretive perspective argues that competence cannot be analyzed and understood as an objective reality, but rather as a social construct, developed, transmitted, and maintained in social situations (e.g. Berger & Luckmann, 1966; Blackler, 1995; Tsoukas, 1996). This means that different concepts of legitimate competence can co-exist within firms, as individuals seek to establish their claims to legitimacy by demonstrating the preeminence of their expertise (e.g. Morgan, 1986; von Krogh & Roos, 1996; Alvesson, 1995; 2004). The aim is to understand how competence is created, articulated, shared, and legitimated within firms on an ongoing basis (e.g. Latour, 1987; Brown & Duguid; 1991; Lave & Wenger, 1991). This view lies broadly within sociology, and the primary unit of analysis is the individual operating within his or her social and organizational context (Empson, 2001a).

This current study builds on PSF and RBV literature which can be associated with the functionalist perspective. Within this approach, however, there seems to be at least two different streams of research: (a) research that emphasizes the stock of competence as a potential source of competitive ability (e.g. Barney, 1991), and (b) research that emphasizes competence as a potential source of innovation and value creation (e.g. Løwendahl, 1992; 1997; Leonard-Barton, 1995; Teece, 1998). With regard to the latter, it is not

(access to) the superior stock of competence in itself that may improve competitive ability, but rather the way competence is utilized in value creation processes. Competence is only one of many elements in innovation and value creation, and even PSFs which lack unique or distinctive competences may, with luck and appropriate processes, generate services that are superior from the clients' perspective (Løwendahl et al., 2001). Hence, in line with (b) and the previously discussed arguments for the focus of this study, the development of competence is seen as a process, and a further understanding of how CD processes take place in PSFs requires nearness to the field and the perspectives of a variety of individuals who are directly involved in such processes. In this respect, the view in this study is closer to a perspective of seeing the development of competence as a socially constructed process than a given asset ready to be deployed in a range of work settings. From this point of departure, it seems possible to investigate how competence development takes place, with the implicit assumption that CD is good for the value creation and competitive ability of PSFs. In this respect, competence development is not about allocation and control, as with tangible resource investments, but rather requires more interactive and dynamic approaches. It is not possible to manage and control knowledge or competence per se, but it seems possible to manage people and processes whereby they interact and develop competence. Hence, the focus of this study is on the processes whereby firms (through their people) may presumably improve value creation and competitive ability through the development of competence. It is further assumed that given certain circumstances, some practices seem better than others in this respect.

Hence, while anchored within literature which can be characterized as broadly functionalist in nature, this study is also inspired by ideas and literature from the interpretive perspective. As such, the study can be criticized for less rigor than studies operating solely within one of the two overall perspectives on competence in organizations. However, according to Argote (1999), opportunities to learn from multi-disciplinarity are to be encouraged because innovation and novel thinking are facilitated through such cross fertilization. In a similar vein, research that acknowledges different paradigms as complementary, rather than polar and incompatible with each other, can also develop novel insight and understanding. In this respect, many researchers operate across disciplinary, epistemological, and paradigmatic boundaries (Empson, 2001a), e.g. Kogut and Zander (1992), Amit and Schoemaker (1993), Spender (1996), and Løwendahl (1997). This is particularly so at the working level. According to Miles and Huberman (1994:4-5): *“ it seems hard to find researchers encamped in one fixed place along a stereotyped continuum. ... In epistemological debates it is tempting to operate at the poles. But in the actual practice of empirical research, we believe that all of us – realists, interpretivists, critical theorists – are closer*

*to the center, with multiple overlaps*". Hence, attempts to classify research, or to present the researcher's paradigm, as advised by many researchers, may also have a way of making things more certain than they are. The paradox is that this typologization represents the reductivist thinking that is so deplored by researchers firmly placing themselves within the interpretive paradigm (Empson, 2001a), done so exactly to dissociate themselves from the functionalist perspective.

From the above theoretical and epistemological positioning, the study seeks to make the following contributions: By comparing *multiple PSFs* from *different industries*, the study seeks to enrich the PSF literature with an *empirical* investigation of *how competence development takes place*. In addition, the study seeks to contribute to resource-based strategy literature with a *qualitative* study, which addresses the *development* of intangible resources in terms of *competence*, and, which includes *managers as well as regular employees* as informants. From a practical point of view, this study tries to contribute to an increased understanding of CD processes in order to strengthen opportunities for the PSF to compete for, attract, and retain both the right people and clients. It is essential for managers and employees to know what kind of competence people develop and how, so that appropriate action can be made to *strategically* enhance one of the most important resources of a PSF, namely the competence of its professionals.

### **1.5. Structure of the dissertation**

The thesis is structured in the following way: As shown, chapter 1 describes the positioning of the study, including epistemological approach. Chapter 2 continues by discussing the theoretical foundation for this research. This includes literature on PSFs, strategic resources, and competence and learning. Thereafter, chapter 3 addresses methodological considerations, with particular emphasis on research design, data sources, and analysis. Chapters 4, 5, 6, and 7 present the empirical findings of each PSF. Thereafter, chapter 8 presents findings based on cross-case comparisons of the four PSFs. Finally, chapter 9 contains a concluding discussion of the main findings, as well as contributions and implications of the study. Suggestions for further research complete the dissertation.



## **2. Theoretical background**

This chapter further presents the theoretical background for this research. The chapter consists of four main sections, which are organized under the headings of professional service firms, strategic resources, competence and learning, and CD in PSFs. First, section 2.1 discusses literature on PSFs with particular emphasis on characteristics of PSFs, key resources, and a framework for knowledge and value creation. Second, based on the notion that competence represents a critical resource for PSFs, the anchor to strategic resource-based literature is discussed in section 2.2. This perspective emphasizes why it is strategically important for firms to develop intangible resources such as competence, and identifies two “routes” to CD in firms. However, PSF and strategy literature has paid little attention to the “content” of these routes. Therefore, the third section, 2.3, brings in research from competence and learning literature, which emphasizes that CD and learning processes occur primarily to human beings. Correspondingly, a large part of this literature has not paid much attention to the strategic importance of such processes in firms. The learning literature is used to specify central aspects within the two strategic routes to CD. The aim is to further provide focus and guidelines for the empirical analysis. Fourth, these three main strands of literature are taken together in section 2.4. The literature on PSFs, strategic resources, and competence and learning is built upon in order to investigate how CD takes place in PSFs, where CD is regarded as a vital, underlying process for the competitive ability of such firms. A figurative illustration is developed to visualize the integration of the framework on PSFs with the two routes to strategic CD and the further elaboration on learning. This serves as a starting point for the empirical exploration. Finally, a summary of the chapter is given.

### **2.1. Professional service firms**

Based on the notion that PSFs are interesting to study in their own right (e.g. Maister, 1993; Løwendahl, 1997; Empson, 2000), this section starts out by discussing characteristics of PSFs. Thereafter, different types of PSFs are addressed. Third, key resources and value creation of PSFs are attended to, before presenting the VCPs of PSFs-framework. Together, these discussions establish a conceptual framework from which to start thinking in order to investigate the research questions. Finally, a summary of the section is given.

#### **2.1.1. Characteristics of PSFs**

PSFs can be characterized by (i) the types of intangible services they

provide, (ii) their project-based organizing, (iii) their workers as both inputs to and sources of value creation, and (iv) the particular managerial challenges associated with these features. Each of these characteristics is discussed below.

#### *Types of services*

Løwendahl (1992; 1997) proposes a pragmatic definition of PSFs, classifying them based on the *types of services* they deliver, rather than e.g. the characteristics of their employees. Thus, professional services:

1. are highly knowledge intensive, delivered by people with higher education, and frequently closely linked to scientific knowledge development within the relevant area of expertise
2. involve a high degree of customization
3. involve a high degree of discretionary effort and personal judgment by the expert(s) delivering the service
4. typically require substantial interaction with the client firm representatives involved and
5. are delivered within the constraints of professional norms of conduct, including setting client needs higher than the profits and respecting the limits of professional expertise (Løwendahl, 1997:18-23).

This description characterizes professional services as distinguished from non-professional, more routinized services, and not all PSFs deliver only professional services. Some firms also try to develop standardized solutions, in order to achieve economies of scale. Unless the majority of services delivered are of a professional as opposed to a standardized nature, the firm is not a pure PSF (Løwendahl et al., 2001). However, the distinction between such categories of firms, as well as their relation to less knowledge-intensive firms, is not clear, because what is knowledge *intensity*? Since most work is based on some kind of knowledge, it is difficult to imagine organizations that are not based on knowledge, and any evaluation of “intensity” or degree of “professionalism” is likely to be contested (Alvesson, 2001). Hence, what is the degree of knowledge intensity in PSFs relative to other organizations? Or, how knowledge intensive are PSFs? Zack (2002) illustrates how a research company, an ostensibly knowledge-based organization, is not very knowledge-based at all. By comparison, a cement company, an ostensibly low knowledge-intensity organization, operates as a highly knowledge-based organization. Nevertheless, based on the characteristics mentioned above, it seems useful to distinguish between PSFs offering customized services on the one hand, and more routinized service and manufacturing firms on the other (Løwendahl, 1997). Examples of routinized service firms include fast food chains, hotels, airlines, and the majority of banks.

Whereas manufacturing firms typically rely to a large extent on technology, machines, and highly standardized operations (Løwendahl, 1997), service delivery, on the other hand, can in general be characterized as the delivery of *“something that can be bought and sold, but which you cannot drop on your foot”* (Edvardsson & Gummesson, 1988:6). With PSF deliverables, clients cannot sample what they buy prior to purchase. In this respect, Maister (1993) suggests that professional services be classified according to what the clients hire the firm for – its experience (“grey hairs”), its expertise (“brains”), or its efficiency (“procedures”) (i.e. its ability to carry out client firm tasks more quickly and/or cheaply than the client firm). Services of a “brains” type imply that the client’s problem is at the forefront of professional or technical knowledge, or at least is of high complexity. “Grey hair” services involve a lesser degree of innovation and creativity in the actual performance of the work than would a brains assignment, while “procedure” services usually involve a well-recognized and familiar type of problem.<sup>7</sup> Løwendahl (1997) expands these categories, and suggests that services differ both in terms of the characteristics of the output delivered, the characteristics of the interaction with the client, and the characteristics of their inputs – i.e. the people involved as well as other resources. This implies that PSF services are influenced by several factors which add to the complexity of the service in general, and increasingly so the more innovative and complex the service.

However, related to a PSF’s strategic positioning in terms of the types of services it offers, the type of competence required varies accordingly. A lot of work may not call for excellence, but more moderately competent work (Alvesson, 2004). For a firm predominantly pursuing Maister’s procedures approach, perhaps “good enough” is more appropriate than optimization of CD? In comparison, a firm predominantly offering the brains type of highly innovative and customized projects requires more careful attention to sophisticated CD. Hence, the centrality of CD may be contested depending on the firm’s business model. The services offered, e.g. innovation or efficient delivery, high creativity, esoteric technical expertise, or routine (Alvesson, 2004), are likely to imply differences with regard to CD. At an operational level, PSFs are probably most occupied with getting clients and delivering services according to deadlines in order to generate revenues (Maister, 1993), than being “caught up” with CD issues. However, this study argues that in order to be profitable over time when competing in an increasingly knowledge-based economy, PSFs are particularly vulnerable if they do not develop the competence of their work force.

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<sup>7</sup> These three categories are only points along a spectrum of project types.

In terms of service quality, the more idiosyncratic, innovative and complex, or in other words, the more distant the service is from already existing versions of solutions, the more difficult it is both for the service firm to guarantee the quality of the service *ex ante* and for the client to evaluate the service delivery (Løwendahl, 1997). In addition, interdependence in terms of input, as well as competence asymmetry between the service provider and the client make the service rely on a high degree of individual judgment of the professionals (Løwendahl, 1992; 1997). Fields of action with low uncertainty, or where the competence required to evaluate problems and solutions is easily accessible, do not provide the space necessary for the development of socially recognized expertise (Beckman, 1989). In many cases, thus, the quality of intangible services is difficult to evaluate for people external to the given area of expertise. For this reason, society accepts that professional associations take care of peer reviews, licensing, and sanctioning of inappropriate behavior (e.g. Løwendahl, 1997; Schön, 1983). This also explains the high prestige involved when, for instance, an engineer is evaluated and invited to become a member of RIF.<sup>8</sup> In industries where there are few or no established professional standards or licensing, reputation is strengthened based on less standardized and more subjective criteria, e.g. when an advertising agency receives a prize judged and awarded by other professionals, typically competitors from the same field. However, in daily work, criteria for evaluating services can be unreliable or entirely absent (Alvesson, 2001). Further, professional work is not unambiguous to the professionals themselves either. A study comparing the decisions of expert and novice auditors indicated no relationship between the degree of expertise (as indicated by experience) and consensus in high-risk and less standardized situations, as the consensus level of the experts is lower than that of novices (Bédard & Chi, 1993). This indicates that a classification of services is not unproblematic, and that the complexity involved is further enhanced due to potential differences within the overall PSF category. This will be further discussed in the section on different types of PSFs.

Next, the services provided to clients are mainly delivered through project work (Maister, 1993), thereby making project-based organizing the common structure of PSFs.

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<sup>8</sup> The Association of Consulting Engineers (RIF) is a business sector organization for knowledge intensive firms in Norway mainly operating within the building-, construction, and commercial property sectors. RIF members must have formal university level education within the area of approval in addition to at least eight years of relevant practice ([www.rif.no](http://www.rif.no)).

### *Project-based organizing*

Literature on project organizations defines a project as a one-time event or an event occurring with low frequency, e.g. when an unusual problem occurs that the organization normally does not handle (e.g. Andersen, Grude & Haug, 1984; Kolltveit & Reve, 1998; Jessen, 1998). Then, a project is set up which operates in parallel to the rest of the organization. In contrast, in project-based organizations such as PSFs, project work *is* the way of working (Maister, 1993). Compared to the vast literature on project organization, literature on project-based organizations as such is not yet much in evidence. Nevertheless, particular challenges seem to apply to project-based organizations, as project assignments are solved by teams (Maister, 1993). As further discussed in chapter 2.3.3, teams are increasingly used as a form of organizing in firms in general, and research on group learning has escalated in response to competitive challenges (Cohen & Bailey, 1997). In particular, cross-functional teams are important for R&D units (Cohen & Levinthal, 1989) and new product and technology development (Dodgson, 1991).

According to Mintzberg (1983), innovation requires an adhocracy configuration that is able to fuse its experts drawn from different disciplines into smoothly functioning ad hoc project teams. The adhocracy form of organizing hires and gives power to experts – professionals with highly developed knowledge and skills who innovate and solve problems directly on behalf of their clients. Further, the adhocracy shows little reverence for the classical principles of management, especially unity of command. In contrast to traditional manufacturing firms configured as machine bureaucracies with relatively stable and highly standardized work/products, which rely on hierarchy and a long-linked technology (Thompson, 1967), adhocracies represent flat structured, fluent, and transparent configurations, based on a cyclical and intensive problem solving logic (Thompson, 1967; Stabell & Fjeldstad, 1998). Thus, in many respects, the adhocracy form of organizing seems to resemble project-based organizations of intangible non-standardized services based on high degrees of individual expertise, combined with the mutual matching of clients and competences operating in relatively unstable markets (Løwendahl & Revang, 2000). As a result, project-based organizing seems particularly efficient in PSFs where the nature of the services often requires flexibility, as well as specialized competence and autonomy on the part of the individual professional.

Further, in PSFs, the professionals are both inputs to and sources of value creation.

### *The professionals as inputs to and sources of value creation*

PSF workers are typically individuals with high levels of theoretical

education (Løwendahl, 1997; Empson, 2000). In addition, creativity and the ability to use analytical and social skills are regarded to be beneficial (Frenkel, Korczynski, Donoghue & Shire, 1995). What is significant about these types of workers is that unlike e.g. traditional industrial workers, PSF workers are the direct “productive” force of the organization (Maister, 1993). In a post-industrial economy with the decline of manual work, knowledge displaces capital as the driver of performance. Value creation is increasingly dependent on knowledge being applied to knowledge itself in order to create new knowledge relevant for innovation. In other words, rent generation in contemporary society relies ever more on innovation through the application and development of new knowledge to existing knowledge and, therefore, on the contribution of knowledge workers to this process (Newell, Robertson, Scarbrough & Swan, 2002). These characteristics have led to the term “gold collar” worker being attached to some of them (Kelley, 1990). According to Newell et al. (2002), this implies that these workers need to be provided with challenging work tasks to sustain their motivation, as well as good working conditions. These aspects seem particularly important in terms of recruiting and retaining highly attractive individuals - both for the sake of developing the resource base as well as gaining appropriate clients.

The knowledge work of PSF employees does not lend itself particularly well to standardization because the customization involved leads to a significant application of both explicit and tacit knowledge.<sup>9</sup> Therefore, those engaged in this type of work need to be left to make their own decisions about what and how to do their work (Løwendahl, 1997). In other words, the nature of the job activities PSF employees conduct, demands autonomy over the major work process. Hence, PSF workers typically enjoy relatively high degrees of individual autonomy (Løwendahl, 1997; Empson, 2000). Even junior employees seem to benefit from greater work autonomy compared to corresponding peers in traditional hierarchical structures (Hinings, Brown & Greenwood, 1991). The loosely coupled organizational environment characterized as an adhocracy provides the necessary autonomous working conditions in which individuals are encouraged to use their competence to experiment with ideas and engage in creative activities (Newell et al., 2002).

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<sup>9</sup> All work requires the application of some knowledge, however simple the task. Yet, the term knowledge work tends to be used to refer to specific occupations including what is traditionally referred to as professional work, such as accountancy, scientific and legal work, and more contemporary types of work, such as consultancy, software development, advertising and public relations (Newell et al., 2002).

These characteristics of PSFs and their workers pose particular challenges on managers. Since managers are included as informants, central managerial challenges in PSFs are discussed below.

### *Managerial challenges*

The autonomy of PSF professionals can be explained by characteristics of the service delivery process, which requires a relatively high degree of independent action, both in terms of client interaction and service customization (Empson, 2000). Further, since PSFs are traditionally associated with the partnership form of governance, a diffuse authority structure is maintained (Greenwood, Hinings & Brown, 1990). As a result, diffuse authority combined with the tendency of highly educated individuals to resist leadership, counteract directive managerial authority in PSFs (Greenwood et al., 1990). Raelin (1991) argues that a conflict can arise between competing professional and organizational values. For example, professionals will typically want to complete client work to the best of their professional abilities, applying discipline-based knowledge (e.g. legal, financial, scientific) to client problems. However, time is considered a scarce resource, which is strongly associated with the fee structure and billable hours (Maister, 1993). Hence, a conflict can emerge between the professionals' wish to do a good job, and the needs of the PSF to utilize the firm's resource base as efficiently as possible. Hence, managers in PSFs are required to find ways of mediating such conflicting tensions.

According to Løwendahl (1997), it is not easy to "allocate" assignments to highly autonomous PSF workers unless they see them as interesting and worthwhile. However, if they do find a problem challenging and appropriate for their expertise, they "run" by their own internal motivation, triggered by the problem at hand. Thus, PSF managers typically have relatively limited formal power (Løwendahl, 1992; 1997; Empson, 2000). In such a context, strict procedures and hierarchy do not seem particularly suitable. Instead, Newell et al. (2002) suggest that managers abandon traditional styles of hierarchical leadership, and act more like conductors who coordinate the activities of the employees. Further, they are advised to rely on informal managerial legitimacy through consensus-based management, which requires negotiation and persuasion (Tolbert & Stern, 1991; Dirsmith, Heian & Covalski, 1997). A crucial managerial challenge, thus, becomes how to manage "*resources that make their own decisions*" (Løwendahl, 1994; 1997:49), i.e. people who can easily walk out of the firm in order to start working for a competitor or set up their own (rival) business. Due to the importance of investing in individuals' CD, it is also vital for managers to be able to keep the right people over time, as key individuals are likely to take their competence with them if they leave.

At the same time as managerial authority seems constrained by the extensive operational autonomy PSF workers frequently enjoy (Raelin, 1984; Bailyn, 1985), management can arguably be seen as particularly important precisely because of the very large percentage of exceptions rather than routine replications of earlier procedures in daily work activities (Løwendahl, 1997). A managerial task, then, is to make ad hoc, local decisions known to the workers, and to take action if these decisions fail (Løwendahl, 1997). Hence, diffuse authority, combined with the PSF workers inclination to resist autocratic actions, counteracts personalized directive leadership (Empson, 2000). As a result, in PSFs, “*strategic management and leadership is a matter of guiding, nudging and persuading*” (Greenwood et al., 1990:748). These characteristics imply that the managerial tasks may be both more challenging and more crucial in firms generally associated with ambiguity, intangibility, individual expertise, and project-based organizing, in contrast to hierarchically structured firms with more routinized operations and products (Løwendahl, 1997).

The aim of the above discussion on characteristics of PSFs is to provide a general understanding of such firms. According to Løwendahl (1997), most writers on PSF management have generalized their insights from firms in one industry and assumed their findings to be valid across firms with very different priorities. Even though PSFs share many of the same characteristics, they are not all the same. The following section addresses some critical dimensions that make PSFs fundamentally different.

### **2.1.2. Different types of PSFs**

PSF differences are partly industry specific and partly strategic, as firms set their own priorities in order to try to develop or maintain competitive advantage (Løwendahl, 1997). Løwendahl (1997) suggests that the following key dimensions make PSFs different:

- The extent to which a PSF can expect the client to continue to buy more or less the same service repeatedly.
- Application of existing versus development of new solutions.
- Not all types of PSFs can compete for all types of contracts. There is an obvious connection between e.g. the size of the project and the required minimum size of the firm.
- The characteristics of the typical sales process, i.e. proposal based versus personal. For example, whereas engineering projects are typically awarded on the basis of public bidding processes, most management consulting contracts are based on personal relations between senior professionals of the consulting firm and decision makers of the client firm.



- The maturity and size of the firm. Three fundamental phases in the evolution of a PSF is suggested, where the level of complexity of the organizational challenges increases substantially from one stage to the next: (i) The firm as a collection of individuals who make decisions independently, possibly after informal discussions. (ii) The firm as a small, informally coordinated organization with part-time managers making decisions after consulting all key professionals. Organizational goals are developed, but need not be explicitly stated. (iii) The multi-office firm. Formal structures and full time management become fundamental to performance.

Further, two fundamental dimensions seem to drive strategic choices in PSFs: (i) the role of the professionals employed, i.e. the characteristics of the resource base utilized for value creation, and (ii) the types of projects targeted for value creation, i.e. the strategic focus (Løwendahl, 1997). The PSF resource base may be predominantly (i) individually controlled, (ii) organizationally controlled, or (iii) some combination. In terms of competence, thus, some PSFs rely on competence that is controlled by individual professionals, whereas other PSFs rely on organizationally controlled competences such as complex data systems and/or practices and procedures that are difficult to copy. An extreme example of an individually controlled PSF is a firm organized as a network or “federation of equals”, where each partner runs his or her own profit center (Løwendahl, 1997). The other extreme can be exemplified by PSFs with well established methods and other types of organizationally controlled competences that enable the professionals to work together for a much higher joint value than what could have been created by summing the individual competences. The strategy consultancy McKinsey & Co represents an example of the latter (Løwendahl, 1997). Organizationally controlled competence, thus, primarily has value when utilized in relation to the company that controls the competence. Such PSFs invest substantially in the development of firm specific procedures, methods, and data bases to support their work. In addition, they train newly hired people in these methods and thereby enforce their commitment to the unique organization culture or “way of doing things” (Løwendahl, 1997).

Hence, resource ownership and control can differ substantially between different resource bases, although PSFs generally rely to a large extent on intangible resources controlled by individual professionals (Løwendahl, 1997). The individual competence resources are contracted or rented from individuals, whereas tangible resources (see also chapter 2.2.2) are owned by the firm (Nordhaug, 1993). Resources, such as reputation and client relations, are even embodied in people who do not work for the firm. Brand name, for instance, is held by clients, not employees (Itami, 1987). The type

of resource base, thus, both determines competitive ability and affects the firm's domain, whether deliberately chosen or emergent. In terms of strategic focus, PSFs may develop a competitive advantage based on (i) superior client responsiveness or ability to handle relationships, (ii) their superior ability to solve complex problems, or (iii) their superior ability to deliver a given set of solutions more efficiently than competitors (Løwendahl, 1997). The combination of these choices leads to nine theoretical possibilities, as shown in figure 1. However, the three most successful combinations seem to be represented on the diagonal starting from the bottom left hand corner. Løwendahl (1997) terms these the three generic strategies for PSFs.

Resource base \ Strategic focus	Client relations	Creative problem solving	Adaptation of ready solutions
Organizationally controlled resources			B
Team-based individual + collective		C	
Individually controlled resources	A		

Figure 1. PSF strategic modes (Løwendahl, 1997:115)

Each generic strategy leads to a different set of challenges and opportunities, but the shift from one generic strategy to another is likely to be very difficult to accomplish. Regardless of industry, these three strategies seem to coexist, and it seems to be possible to be highly successful both in the short and the long run with any one of the three strategies. However, it does not seem to be possible to pick the best of all three by choosing the elements that are most attractive from each of the modes, as they are fundamentally different in terms of their underlying competitive dynamics (Løwendahl, 1997). A more detailed presentation of the generic strategies follows below.

#### Three generic strategies of PSFs

*A. Client relation based strategies.* According to Løwendahl (1992; 1997), a PSF applying this approach emphasizes its unique ability to understand and help particular client groups. The primary strategic assets are the professionals' reputation among target client groups and their strong relationships with key clients. Firm growth is based on the development of

new relationships of trust and confidence to new clients. The professionals with the highest status and authority are those who are able to build such confidence and win new clients. Young professionals, to the extent that they are hired at all, can only be trained through years of apprenticeship working with the seniors in close interaction with the clients. The organizational structure must be very flexible and the informal interaction required at any point in time drives the coordination within the firm. The formal structure, however, is only a minimal skeleton. Formal procedures and requirements for coordination are likely to be ignored, unless they are seen by the professionals as beneficial in their efforts to deliver the best quality service to clients. Senior professionals and top management spend most of their time with clients, building new relationships, making certain the client is happy with the services delivered, and exploring possibilities for additional contracts. Administration and management are primarily classified as costly overheads and barely tolerated. If coordination is required, it is likely to be achieved predominantly through financial incentives. Very few activities are planned in advance, and the strategic decision making authority rests in the hands of the senior professionals who interact with clients. Synergies may be achieved through clear priorities on client groups that allow the PSF to build its competences cumulatively, even though the competences are individually controlled and client related. This is primarily achieved through the new professionals recruited. The shared knowledge about key clients may be increased through internal training, client information data bases, team cooperation in service delivery, etc., thus, reducing somewhat the dependence on specific key individuals.

*B. Solution or output based strategies.* According to Løwendahl (1992; 1997), PSFs basing their strategies on superior collective capabilities or solutions have developed a core portfolio of such services, methods, or solutions. This implies that competence primarily relates to the efficient development of standardized solutions, which do not call for outstanding expertise. Typically, large investments in further innovation are not required after the technique or solution is first learned. Consequently, the firm is less dependent on single individuals, because new people can become operative relatively fast through training. Growth is achieved through the addition of new markets and client groups where similar services are needed. The core strategic resources of these firms are embodied in organizational competences. Since the people developing the solutions do not need to be externally oriented and interested in sales, top management has substantial authority on these firms. Activities need to be coordinated to a great extent, and the formal organization is likely to be more important to actual behavior than the PSFs following either of the other two strategies.

*C. Problem solving or creativity based strategies.* According to Løwendahl (1992; 1997), the problem solving based strategies result in the most complex firms typically delivering services involving a high degree of innovation. One reason is that the professional competence in terms of problem solving capabilities, creativity, and expertise cannot be converted to organizational competence, even though it may be used to develop collective competence such as team and organizational methods or new software support. The expert developing the service is unlikely to be made redundant by the development of organizational competences. The more the key professionals use their competence for the organization at large, the more important they become for the continued welfare of the PSF. As a result, the competence based or problem solving firm cannot avoid dependence on key individuals. It can develop organizational competence assets such that the firm's survival does not depend on a few key individuals, but it cannot develop competitive advantage without central individuals unless it alters strategy. These PSFs have to develop strategies and structures that make the most of the strengths of the individuals and *simultaneously* develop the organization as well as collective competence. The top managers of the problem solving firms are likely to be the most highly recognized professional experts, or rather the best professional who is willing and able to accept managerial responsibilities. The firm is likely to prioritize professional goals and hence is unlikely to have external owners. Respect and authority follow the best professional expertise. Because expert professionals often only accept control by a manager or organization to the extent that they see the control to benefit their own and the firm's professional development, management needs to spend a great deal of energy on internal issues, including the development of consensus on goals and priorities.

The three types of competitive advantages and resultant strategies are not mutually exclusive. However, it seems to be difficult for any firm to deliver superior performance based on multiple strategies simultaneously because the managerial and organizational challenges involved differ too much (Løwendahl, 1992; 1997). According to Løwendahl (1992; 1997), there are also inherent tensions between the three modes. For example, PSFs of type B face pressures pulling the resources toward the individual (bottom) corner, as well as pulling professional tasks toward the more challenging tailor made solutions in the left-hand corner. PSFs of type A typically face pressures towards more standardization in order to increase revenues. Attempts to codify individual expertise and routinize successful approaches represent pressures pulling the PSF up the vertical axis. Similarly, attempts to reutilize existing solutions with new clients pull the firm in the right-hand direction of the horizontal axis. PSFs of type C face all four pressures simultaneously. This intermediate position is highly unstable. For example,

managers develop more routines to control “the mavericks” and leverage solutions. Professionals find creative ways of avoiding repetition, and make ad hoc decisions even in situations where procedures do exist. Moreover, to various degrees, all PSFs need to manage these tensions (Løwendahl, 1992; 1997). In particular, the main pressures for change associated with each generic strategy are illustrated by the arrows of figure 2.

Strategic focus Resource base	Client relations	Creative problem solving	Adaptation of ready solutions
Organizationally controlled resources			B
Team-based individual + collective		C	
Individually controlled resources	A		

Figure 2. Pressures for change (Løwendahl, 1997:129)

However, these generic strategies primarily concern issues related to organizational structure, coordination, control mechanisms, and individual priorities, as summarized in tables 1 and 2. Thus, specific attention to competence development as part of the overall firm direction is not emphasized. An article which specifically brings up strategies for knowledge management within one type of PSF industry is one by Hansen, Nohria, and Tierney (1999). Yet, they say little about the development of competence. Instead, they set forth two different strategies, “codification” and “personalization”, as illustrations of how consulting firms manage their knowledge. The competitive logic underlying these two approaches seems to resemble Løwendahl’s (1997) generic strategies of adaptation of ready solutions and creative problem solving respectively. The codification and personalization strategies for knowledge management and their relationship with the generic PSF strategies are further discussed below.

Table 1. The three generic strategies and configurations (Løwendahl, 1997:126)

	<b>Solution</b>	<b>Client relation</b>	<b>Problem solving</b>
<b>Status and authority</b>	Hierarchical management	Client relations	Expert
<b>Management focus</b>	Internal R&D	External Sales	Internal+ external competence development
<b>Control Coordination</b>	Authority High HQ to local	Price Low	Trust Medium two-way
<b>Performance evaluation</b>	Sales revenues New solutions	Client satisfaction % repeat buy	Innovation Capture rate for challenging projects
<b>Org. design</b>	Top down	Bottom up	Self designing
<b>Org. flexibility</b>	Low	High	Medium
<b>Service complexity</b>	Low	Medium	High
<b>Ownership</b>	External possible	Internal	Internal
<b>Key assets</b>	Org. control	Ind. control	Org. + ind. control
<b>Vulnerability</b>	Obsolescence of solutions	Exits	Obsolescence of competence rigidity (loss of innovativeness)
<b>Strategic focus</b>	Target markets	Target clients	Target projects/problems (challenges)

Table 2. The three generic strategies and individual priorities (Løwendahl, 1997:128)

	<b>Solution</b>	<b>Client relation</b>	<b>Problem solving</b>
<b>Priority</b>	Job security	Autonomy	Learning, Innovation
<b>Risk aversion</b>	High	Low	Medium
<b>Goal setting</b>	Firm	Individual	Team
<b>Primary goal</b>	Sell or develop solutions	Pleasing the client	Enhancing competence
<b>Authority</b>	“The boss”	The client dec. maker	Professional expert
<b>Reference group</b>	Firm	Client	Academe/peers
<b>Status/Rewards linked to</b>	Loyalty, New solutions, Sales	Client satisfaction, Retention	Creativity, Challenging projects won and completed
<b>Demand from organization</b>	Org. support	Challenging clients, Autonomy	Challenging projects, Expert colleagues
<b>Degree of autonomy preferred</b>	Low	High	Medium
<b>Primary conflict resolution mode</b>	Loyalty	Exit	Voice

#### *Strategies for managing knowledge*

With reference to management consulting, Hansen et al. (1999:109) relate “codification” to reuse economics, and “personalization” to expert economics. The first is typically linked to a low degree of customization, and involves reuse of knowledge assets many times, large teams with a high ratio of associates to partners, and emphasis on scale and large overall revenues. As a result, scale in knowledge reuse and potential growth in the business can be achieved. Since only explicit knowledge can be stored in such systems, this restricts the type of knowledge to be stored and retrieved throughout the organization. Expert economics, on the other hand, requires face-to-face interactions and involves high fees for highly customized solutions to unique problems, small teams with a low ratio of associates to partners, and emphasis on high profit margins. In terms of knowledge management, PSFs relying on a codification approach invest heavily in databases to codify, store, and disseminate knowledge. The aim is to connect employees with reusable codified knowledge. On the other hand, for PSFs emphasizing a personalization strategy, a person-to-person approach is chosen. Networks are developed in order to link professionals so that tacit knowledge can be shared. Table 3 provides further comparisons between the two strategies. According to Hansen et al. (1999), emphasizing the wrong

approach can quickly undermine the business, whereas trying to pursue both at the same time leads to the firm being “stuck in the middle” – without any chance of creating a competitive advantage. Firms that use knowledge effectively pursue one strategy predominantly and use the second strategy to support the first in an 80-20 split: 80 % of the knowledge sharing follows one strategy, 20 % the other (Hansen et al., 1999).

These personalization/codification strategies also resemble Maister’s (1993) categories of PSFs, except that “expert economics” includes both “brains” and “grey hair” services. Other related distinctions are illustrated in Morris and Empson (1998), under the terms “codified” and “tacit” forms of knowledge, as well as in March’s (1991) distinction between “exploration” – i.e. knowledge creation, and “exploitation” – i.e. knowledge application and reuse. Finally, as mentioned above, personalization resembles Løwendahl’s (1997) problem solving or creativity based strategy, whereas codification resembles the solution or output based strategy. In many respects, thus, the knowledge management strategies labelled “person-to-person” and “people-to-documents” by Hansen et al. (1999) can each be matched with respectively the type C and the type B generic strategies suggested by Løwendahl (1997). However, neither the codification nor the personalization approach seems to fit as naturally with the type A client relation based generic strategy. In many respects, the competitive strategy of superior client responsiveness seems to share many similarities with the personalization approach: e.g. customized solutions and person-to-person relationships and conversations. On the other hand, whereas the personalization strategy primarily has an internal focus with regard to knowledge management, the client relation based strategy may need to focus on the external client relationships also when it comes to knowledge management. A distinction, thus, can be made between different strategies for the development of competence, i.e. individually based “personalization strategies”, and organizationally based “codification strategies”. These two strategies for CD imply that not all types of competences are equally useful to a given firm. For example, to a firm based on reuse economics, CD in relation to novel and highly innovative solutions is less important than rehearsal of previous practices in order to improve service delivery efficiency, and vice versa.

Further, the codification and personalization strategies also relate to the size of the firm. According to Kim (1993), the difference between individual and organizational competence emerges, in particular, when a company grows from a small organization with low complexity to a larger one with a larger number of employees and greater complexity. This implies that large firms may benefit from CD based on codified knowledge stored in databases to a greater extent than small firms, where the opportunities for competence sharing person-to-person are greater for the organization in total. According



to Starbuck (1992), large knowledge-intensive firms are better able and more inclined to bureaucratize. Further, large firms better tolerate and balance opposing forces in their work, by allowing experts to specialize in either design or implementation. On the other hand, such firms may experience lower knowledge intensity, because “*when support staff come to outnumber experts greatly, or when knowledge intensive firms (KIFs) claim expertise in too many domains, KIFs lose their halos of expertise and their credibility*” (Starbuck, 1992:737). In addition, PSFs also grow by increasing activities and services that extract more value from the expertise already in-house. Thus, such firms tend to lose knowledge intensity as they grow (Starbuck, 1992).

Table 3. Strategies for managing knowledge (Hansen et al., 1999:109)

<p><b>CODIFICATION</b> Provide high-quality, reliable, and fast information-systems implementation by reusing codified knowledge.</p>	<p><b>Competitive Strategy</b></p>	<p><b>PERSONALIZATION</b> Provide creative, analytically rigorous advice on high-level strategic problems by channeling individual expertise.</p>
<p><b>REUSE ECONOMICS:</b> Invest once in a knowledge asset; reuse it many times. Use large teams with a high ratio of associates to partners. Focus on generating large overall revenues.</p>	<p><b>Economic Model</b></p>	<p><b>EXPERT ECONOMICS:</b> Charge high fees for highly customized solutions to unique problems. Use small teams with a low ratio of associates to partners. Focus on maintaining high profit margins.</p>
<p><b>PEOPLE-TO-DOCUMENTS:</b> Develop an electronic document system that codifies, stores, disseminates, and allows reuse of knowledge.</p>	<p><b>Knowledge Management Strategy</b></p>	<p><b>PERSON-TO-PERSON:</b> Develop networks for linking people so that tacit knowledge can be shared.</p>
<p>Invest heavily in IT; the goal is to connect people with reusable codified knowledge.</p>	<p><b>Information Technology</b></p>	<p>Invest moderately in IT; the goal is to facilitate conversations and the exchange of tacit knowledge.</p>
<p>Hire new college graduates who are well suited to the reuse of knowledge and the implementation of solutions. Train people in groups and through computer-based distance learning. Reward people for using and contributing to document databases.</p>	<p><b>Human Resources</b></p>	<p>Hire M.B.A.s who like problem solving and can tolerate ambiguity. Train people through one-on-one mentoring. Reward people for directly sharing knowledge with others.</p>
<p>Andersen Consulting, Ernst &amp; Young</p>	<p><b>Examples</b></p>	<p>McKinsey &amp; Company, Bain &amp; Company</p>

In this study, the approaches set out by Hansen et al. (1999) seem central to the analysis of the CD policy as expressed by the first research sub question set forth in chapter 1: What is done from the firm's side in terms of approach to and orchestration of competence development? Whereas the generic

strategies proposed by Løwendahl (1997) can help classify the overall company orientation of PSFs.

The following section specifically emphasizes key resources and value creation, thereby moving deeper into the importance of CD in PSFs.

### **2.1.3. Key resources and value creation**

The most valuable and critical resources of PSFs are claimed to be competence and client relationships (Winch & Schneider, 1993; Sveiby, 1997; Empson, 2000). These link together, as good client relationships often lead to a favorable reputation (Stabell & Fjeldstad, 1998), which in return improves access to beneficial personnel and clients. In PSFs, competence is primarily developed and maintained through the experience and actions of individuals (e.g. Dodgson, 1993; Empson, 2000). In this respect, tacit knowledge (Polanyi, 1966; Nonaka & Takeuchi, 1995) is identified as a valuable and fragile resource (Grant & Spender, 1996), especially in the work of experts (Empson, 2000). A PSF may possess an extensive body of technical competence that is both codified and collective. However, sustainable competitive advantage is more likely to derive from the tacit competence which resides within each individual, resulting from his or her unique combination of skills and experiences, and which enables an actor to judge how best to use available competence in client assistance (Empson, 2000).

Client relationships develop between professionals and the clients over the course of several engagements. As a result, if professionals leave, they may bring their client relationships with them (Maister, 1993). Hence, valuable resources can be proprietary to individuals within the firm, rather than to the PSF as a whole (Løwendahl, 1992; Morris, 2001). In order to increase economic efficiency and reduce vulnerability to staff departures, PSFs may seek to codify or disseminate individuals' competence throughout the organization, as well as to share specific client relationships among a broader group of individuals (Morris & Empson, 1998). The frequency and velocity of such diffusion is affected by the complexity of the competence to be shared, depending on (i) the level of codification, (ii) the extent to which the competence shared is independent or is an element of a set of interdependent components, and, (iii) the strength of the relationship between the parties involved (Hansen, 1999). However, individuals may be unwilling to share their competence and relationships with colleagues, as this may undermine their individual status, power, and personal competitive advantage within the firm (Morris, 2001). Since competence is suggested proprietary to individuals rather than to the organization as a whole (Løwendahl, 1992; 1997; Empson, 2000; Morris, 2001), this study

emphasizes the importance of professionals' individual CD in order to improve the PSF resource base.

Despite acknowledging PSFs as highly dependent on continuously up-dating and training the professionals (Maister, 1993), only scarce attention is given to the development of competence in the PSF literature. Some recent studies focus on the role of knowledge. These include the linking of knowledge bases and organizational structure (Morris & Empson, 1998), knowledge transfer resistance in mergers (Empson, 2001b), knowledge codification in management consulting (Hansen et al., 1999; Morris, 2001), modes of knowledge organizing in expert consultancy (Robertson & Swan, 1998), knowledge production and consumption in society at a field level (Suddaby & Greenwood, 2001), and individual knowledge development through interactions between colleagues and competitors in financial market trading - showing how traders utilize generally understood models of finance theory to predict how the market will work, but rely upon personal experience and intuition to determine how to "work the market" (Willman, Fenton O'Creevy, Nicholson & Soane, 2001). Whilst several studies investigate the organizing of knowledge, only Løwendahl et al. (2001) point out the *development* of competence as a potential strategic resource of particular interest to PSF value creation, competitive ability, and survival in the long run.

From a critical perspective, Alvesson (1993; 2001) suggests that it may not always be the case that professionals are hired merely because of their experience, expertise, or efficiency. Contributions from professionals can also be seen as matters of interpretation and beliefs, expectations and symbolism. Knowledge workers are not just valuable for their technical functions and results. They also *symbolize* rationality, wisdom, intelligence etc. Through the symbolization of these virtues, a general impression is communicated that something rational, sensible, and valuable characterizes such people and the work they perform. Thus, professionals create norms about what things should be like through social recognition based on rhetorical skills, thereby indicating a gap between current imperfections and the ideal (Alvesson, 1993; 2001). In a similar vein, Sturdy (1997) suggests that such symbolic attractiveness may be exploited by, for example, management consultants and other "fashion setters" (Abrahamson, 1996) in their efforts to sell new vogues for business managers. This is by Abrahamson (1996) referred to as the dissemination of management fashions in terms of transitory collective beliefs that certain techniques are at the forefront of management progress, and by Czarniawska-Joerges (1988) as "merchants of meaning trading in words". Hence, some activities may rest just as much on the reuse of knowledge, persuasion, and rhetorical skills, as on knowledge creation, innovation, and novelty (Kieser, 1999).

Professionals, thus, may be hired because of their institutionalized expert image rather than their ability to contribute to value creation in terms of problem solving capacities. As a result, in a context of uncertainty and ambiguity, the use of external consultants may reduce client firm managers' responsibility if and when "blame-time" occurs (Alvesson, 2001).

In response to these critical views, Newell et al. (2002:26) advocate that such circumstances "*might be the case in some contemporary service-based knowledge-intensive firms, for example, some advertising agencies, but certainly not all knowledge-intensive firms*". In general, an understanding of the importance of knowledge to PSFs seems to prevail. This study follows several authors (e.g. Løwendahl, 1997; Empson, 2000; Newell et al., 2002) in viewing appropriate competence and client relationships as the primary resources of PSFs. These are closely related and both may be enhanced through service delivery to clients - the core PSF value creating activity (Mills, Hall, Leidecker & Marguillies, 1983; Løwendahl, 1997; Empson, 2001b). This endeavor is further discussed below.

#### *Value creation*

Value creation can be seen as the change from an existing towards a more desired state (Stabell & Fjeldstad, 1998). In this process, PSF professionals are supposed to and may create different value from the same processes (Løwendahl et al., 2001): (i) potential value for the client, (ii) potential value for the professional(s) in terms of competence gained from the client work, (iii) potential value for the service firm in terms of potential individual, collective and organizational learning, and (iv) potential value for the owners (be it partnerships or corporations) through financial profit. In addition, clients are viewed as important value co-producers (Ramírez, 1999). In this respect, value is seen as mutually created and re-created, reconciled or combined in co-producing activities between the client and the service provider. These value creation activities are summarized by Løwendahl (1997:42-43), and consist of three critical processes. The first process concerns the ability to attract and keep clients by becoming the preferred service provider ahead of competitors. The second process involves the activities required in order to assist clients and deliver accordingly, whereas the third process emphasizes learning at work. Of main concern in this study, is the third process.

Based on characteristics of PSFs, their key resources, and value creation logic, Løwendahl et al. (2001) have developed a framework which specifically addresses the strategic importance of CD in the value creation processes of PSFs. The so-called "VCPs of PSFs-framework" bridges the domain choice from organization theory and the resource base from the RBV, and explains the relationship between the two as value creation

processes (VCPs) of service delivery. Based on these processes, two interrelated dimensions are proposed: (i) direct value creation for the clients in terms of service delivery, and (ii) indirect value creation in terms of enhancing the resource base. The latter seems particularly important for an understanding of CD in PSFs. Therefore, the components of the framework and their interconnections are further clarified in the next section.

#### **2.1.4. The VCPs of PSFs-framework**

The VCPs of PSFs-framework (see figure 3) consists of three central components: strategy/domain choice, service delivery, and resources. These components illustrate a “snap-shot” taken at a given point in time. In addition, dynamic processes are illustrated by the arrows in the figure. A presentation of each of the components and arrows is given below.<sup>10</sup>

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<sup>10</sup> In the framework, “knowledge” is chosen as the preferred term instead of “competence”. This is because the framework is published in a special issue where the topic is “knowledge creation in PSFs”. In this dissertation, the term knowledge in the framework corresponds to competence, which is the term used in relation to the informants (in Norwegian). Moreover, this study is in line with several Scandinavian authors (e.g. Nordhaug, 1993; Karnøe, 1996; von Krogh & Roos, 1995; Løwendahl, 1997; Drejer, 2000; Sandberg, 2000; Kvålshaugen, 2001) in viewing competence as a broader term than knowledge. However, numerous debates in the literature weigh the pros and cons of using these terms. For example, Machlup’s (1980) identification of 13 “elements of knowing” and five “classes of knowledge” (cited in Grant, 1996:110) suggests that when knowledge is broadly defined, ascertaining whether competence is a broader term than knowledge or vice versa is difficult. In Anglo-American business literature, the term knowledge is preferred, whereas in Norwegian (and other Scandinavian) literature, the term competence seems to be the choice of preference, especially in relation to practice. In this study, the use of competence as a broader term than knowledge comes from an understanding of competence as it is used in the Norwegian language to address issues related to human development in a practical work context. By comparison, knowledge seems to be generally associated with teaching and scholarly development in a more formal theoretical school context.

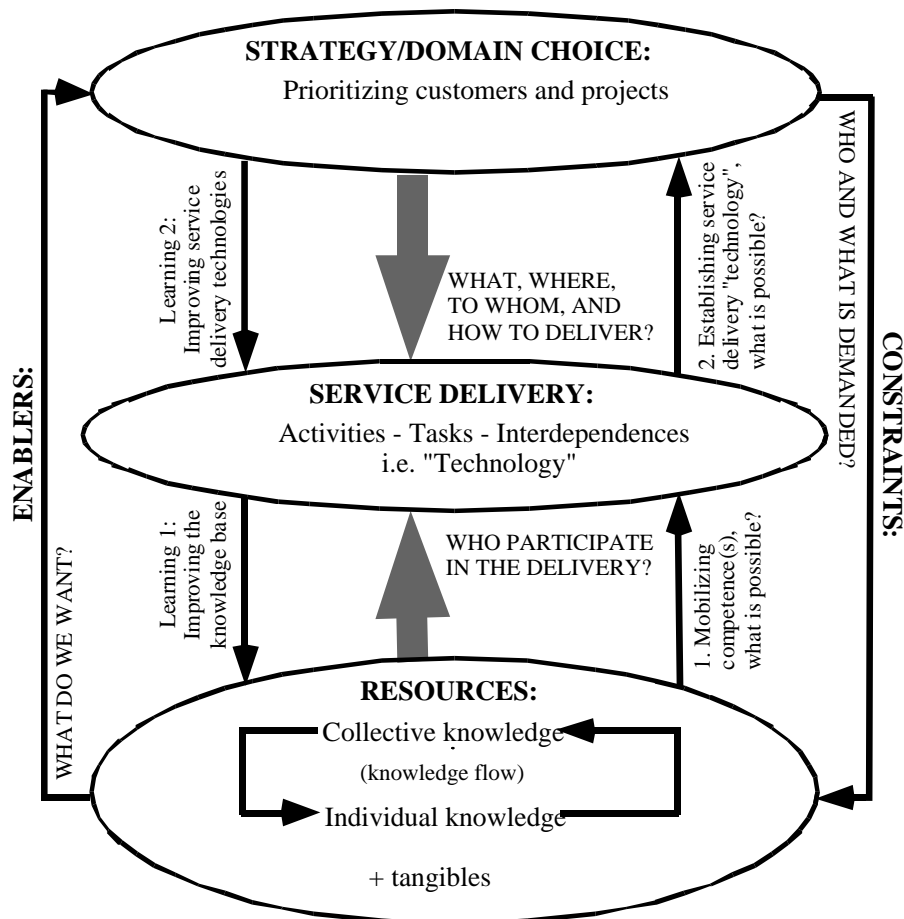


Figure 3. The VCPs of PSFs-framework (Løwendahl, Revang & Fosstenløyken, 2001:925)

### Strategy/Domain choice

At any given point in time, PSFs have made their domain choice (Levine & White, 1961) in terms of strategies concerning prioritization of clients and projects, – “what” is delivered, to “whom”, “where”, and “how”. According to Itami (1987), the aim of these strategic choices is to achieve the firm’s goals. However, choices do not need to be consciously or explicitly made (Mintzberg, 1994; Alvesson, 1995), but through recruiting and a preference for particular types of projects, a pattern will normally emerge. A strategic

portfolio of clients and projects allows for additive improvements of the competence base, whereas without focus, projects, CD, and recruiting are likely to be ad hoc (Løwendahl, 1992; 1997). Hence, it is important to pursue and secure the right kinds of projects and clients (Løwendahl, 1992; 1997). Because domain choice both affects and results from the type of professionals hired, it also has a fundamental effect on the type of CD that may occur in a firm.

#### *Service delivery*

Regarding service delivery, there seems to be path dependency, where previous projects may enhance both the competence and the reputation of the PSF, thereby allowing people to gain the most appropriate projects in terms of CD as well as profitability. On the other hand, previous projects may constrain strategic development, as previous experience limits both the types of projects people have adequate competence to compete for, and the reputation of the PSF allowing it to sell a “credible promise” (Løwendahl, 1997). In this respect, VCPs may be seen as a key bridge to client markets. Professionals often deliver services that require specific combinations of competence, and whereas some services involve CD, others do not. For the professionals involved, CD may add value directly, in terms of individual, collective, and/or organizational learning. Further, different types of services involve different task characteristics, lead to different interdependencies and coordination needs, and require different types of knowledge bases (Løwendahl et al., 2001). In light of Thompson (1967), these aspects constitute different types of organizational technologies. Such technologies are classified by increasing complexity and cost of coordination, based on the interdependence between tasks. Many tasks carried out by PSFs, especially those requiring a high degree of customization take on the characteristics of synthetic organizations (Thompson, 1967) which are effective but not highly efficient, because they cannot calculate in advance the extent of the problem to be solved or the full array of resources needed. This raises the question of whether it can be assumed that for PSFs, which deliver highly customized services, is only a costly form of coordination applicable? Does the firm need to remain inefficient and costly to operate, or can modes of coordination and collaboration be developed which reduce costs without reducing customization? (Løwendahl et al., 2001). In this respect, the composition of the resources plays a crucial role for competitive ability.

#### *Resources*

The VCPs of PSFs-framework suggests that CD processes primarily relates to the development of individual and collective competence, as indicated by the arrows within the resource component. The resource base, thus, consists most importantly of individual and collective competence, as well as



tangibles in terms of e.g. computer based technology and financial capital. A further discussion of individual competence and collective competence follows below.

*Individual competence* is seen to include human knowledge, skills, and aptitudes that are applicable in work (Nordhaug, 1993). In this respect, “knowledge” involves information-based, task related “know-what”, which concerns comprehending a conceptual understanding of a phenomenon or experience. “Skills” refer in this study to the ability to perform work-related tasks in practice, i.e. knowing how to perform. “Aptitudes” encompass natural talents, intelligence, artistic abilities, creativity, intuition, etc. that can be applied in work. As such, an aptitude can be very difficult to develop or share (Nordhaug, 1993). Hence, to the degree that a firm needs special types of aptitudes for the performance of specific tasks, it will have to search for persons who already have these talents, or who have a potential for developing them if that is considered possible (Nordhaug, 1993). Aptitudes may contribute both to the quality of the skills and the ability to learn new skills quickly. Similarly, knowledge contributes both to the skills applied and to the ease with which new skills may be learned (Nordhaug, 1993).

Conceptually, competence incorporates both tacit and explicit dimensions (Polanyi, 1958; 1966). While explicit knowledge can be acquired by formal study, codified, and shared, professional skill is more personal and contextual, often closely connected with tacit knowledge, and most likely developed through practice involving close social interactions, a mutual understanding, and trust (e.g. Polanyi, 1966; Schön, 1983; Nonaka & Takeuchi, 1995; Leonard & Sensiper, 1998; Lam, 2000). Tacit knowledge defined as inarticulate is by definition not possible to articulate. Polanyi (1958) suggests that parts of personal, individual knowledge may be impossible to convey linguistically, as individuals may not be aware of their knowledge, nor possess an appropriate repertoire of words to express their knowledge and views. On the other hand, in lack of language or the complement of linguistic expressions, an individual may convey knowledge by other signs such as gesturing, drawing, playing, or by evoking facial expressions (von Krogh & Roos, 1995). In practice, however, it is difficult to distinguish clearly between explicit and tacit knowledge, because of their interconnectedness (Nonaka & Takeuchi, 1995). In any event, the added value in PSFs seems to lie both in what professionals *know* and in what they *do* at work (Maister, 1993), as these are likely to mutually influence each other.

In addition, individual competence is influenced by personal characteristics. For example, the person’s capacity to perform tasks – what a person is potentially *able* to do, as well as what an individual is *willing* to do at work

(Nordhaug, 1993). Individuals can be driven by a desire to do a good job for the sake of personal satisfaction, or the main driver of motivation can be found in external rewards such as e.g. increase in pay. Over time, the most persistent is internally driven motivation (Rand, 1991). The use of the term “individual competence” in the literature is closely tied to action and performance. In daily work, it can often be easier to notice lack of competence, than the opposite. As such, competence represents an experience-near concept related to both subjective and social elements (von Krogh & Roos, 1995). Existing competence, thus, provides a platform from which further development is sought, comprehended, and interpreted (Nordhaug, 1993). Hence, fundamental to individual competence is both previous competence (based on e.g. education and experience), and the process of competence development.

*Collective competence* relates to collectively developed routines, procedures, and shared ways of doing work. This collective competence can include e.g. codified knowledge, databases, information about who knows what, norms, routines, “best practices”, organizational skills, culture, language, values, and corporate identity (e.g. Kogut & Zander, 1992; Løwendahl, 1992; 1997). Hence, collective competence involves synergies in the form of shared competences (Nordhaug, 1993). Because professionals are evidently tied to the organization through their actions and activities, whereas the organization finds expression in individuals and groups of individuals through organizational priorities and processes, systems and structures, routines and cultures (Alvesson, 1991), there is an iterative interaction of mutual influence between individual and collective levels in a firm (e.g. Crossan, Lane & White, 1999; Johnson et al., 2003). The transitions between individual and collective competence is not trivial, and is widely debated in the literature (e.g. Spender, 1996). According to Nonaka and his co-authors: e.g. Hedlund and Nonaka (1993), Nonaka and Takeuchi (1995), Nonaka and Konno (1998), von Krogh, Ichiju, and Nonaka (2000), and Nonaka, Toyama, and Konno (2000), knowledge is created through dynamic interactions and combinations of explicit and tacit knowledge taking place in a shared context termed “ba”, where knowledge assets serve as inputs, outputs, and moderators in the knowledge-creating processes. In their so-called SECI-model (e.g. Nonaka et al., 2000), knowledge is seen as incorporating processes of (i) “socialization”, i.e. converting new tacit knowledge through shared experience, (ii) “externalization”, i.e. articulating tacit knowledge into explicit knowledge, (iii) “combination”, i.e. converting explicit knowledge into more complex and systematic sets of explicit knowledge, and (iv) “internalization”, i.e. embodying explicit knowledge into tacit knowledge.

Further, Crossan et al. (1999) use the tension between exploration and

exploitation developed by March (1991) to illustrate movements between individual, collective, and organizational levels as feed forward and feedback processes.<sup>11</sup> “Feed forward” relates to exploration. It is the diffusion of competence from individuals and groups through to the competence that becomes embedded in the forms of systems, structures, strategies, and procedures. “Feedback” relates to exploitation and to the way in which institutionalized competence affects individuals and groups. Individuals, groups, and organizations explore and learn new ways while concurrently exploiting what they have already learned. However, continued investment made to enhance individual and collective competence may be counterproductive if the organization does not have the capacity to absorb or utilize it (Cohen & Levinthal, 1990). As a result, “bottlenecks” may prevent individual competence from feed forward processes to group and organization. Further, the feedback processes provide the means to exploit what has been learned, but because competence institutionalized at the organizational level is difficult to change, it runs the risk of becoming irrelevant to future competence (Crossan et al., 1999). While notwithstanding the differences between individual and collective competence and their relationships, it is, however, outside the scope of this study to investigate the *transformations* of individual competence into collective or organizational competence and vice versa, just as little as it is the aim of this study to investigate organizational learning (e.g. Easterby-Smith, Crossan & Nicolini, 2000).

Based on this discussion, competence development is in this study understood as improving individual and/or collective competence through learning processes. In this respect, CD involves learning, whereas learning does not necessarily involve CD - e.g. when learning does not increase an actor’s capacity to take relevant action in a particular situation (Nordhaug, 1993). This approach implies that CD is not merely conceived of as a cumulative process of adding more and more competence, as competence is not of value in itself (Penrose, 1959). In other words, the value of CD depends not on the volume of its existence, but on its utilization and contribution to PSF value creation (Løwendahl, 1992; 1997).

Together, the components of resources, service delivery, and domain choice are essential to determine the value creation logic of a PSF. Therefore, in the empirical part, these three components will be central to the discussion of the value creation approach of each PSF.

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<sup>11</sup> “Exploration” includes elements captured by terms such as search, variation, risk taking, experimentation, play, flexibility, discovery, and innovation. “Exploitation”, on the other hand, involves elements such as refinement, choice, production, efficiency, selection, implementation, and execution.

#### *The outer arrows*

The domain choice and the resource base represent contextual components, which both enable and constrain the value creation processes for each specific project, as illustrated by the outer arrows of figure 3. From a short-term perspective, the components set limits for the types of projects the firm can win, and what it is able to do based on its resources. In other words, they constrain what the PSF can offer clients, which clients are likely to be convinced by a project proposal, and what kinds of projects and service deliveries can be successfully completed. On the other hand, reputation, client relationships, and expertise may enable the PSF to gain advanced projects within its area of domain choice. As a result, PSFs must compete actively in two markets simultaneously: the market for clients and the market for professional resources (Maister, 1982; 1993; Løwendahl & Revang, 1998).

#### *The inner arrows*

The two broad arrows illustrate the processes by which domain choices and resource mobilization combine to determine the value created for and delivered to the client(s). As a by-product of these services, value is created both in terms of options for domain enhancement (vertical arrows pointing up from resources, via service delivery, to strategy/domain choice), and in terms of learning (vertical arrows pointing down from strategy/domain choice, via service delivery, to resources). Based on the right matching of people and projects, service delivery experiences can result in opportunities to alter the domain choice in terms of going after other types of clients and projects. This is referred to as establishing service delivery technology. The strategic focus in terms of which projects the professionals want to undertake determines the priorities among projects. As a result, experience from former projects can improve competence through at least two learning processes. First, the resource base improves through experience (Itami, 1987). Second, experience can be used to improve the design and management of service delivery, referred to as respectively Learning 1 and Learning 2 in the figure. In terms of the research questions of this study, Learning 1 is of particular interest, as this process addresses competence developed as a by-product of service delivery to clients.

Hence, the VCPs of PSFs-framework provides an approach to the investigation of resource base enhancement in PSFs. However, the framework does not go in detail on how the *development* of competence actually takes place. Therefore, it is the aim of this study to conduct an empirical investigation that probes deeper into this process. To this aim, the VCPs of PSFs-framework contributes by highlighting and linking learning processes to the value creation activities of PSFs.

### **2.1.5. Summary**

PSFs are characterized by the types of intangible services they deliver, the project-based organizing, and the employees as both inputs to and sources of value creation. As a result, particular managerial challenges apply to PSFs compared to traditional manufacturing firms. Competence and client relationships represent key resources, and service delivery to clients is the fundamental value creation activity in PSFs. The VCPs of PSFs-framework specifically addresses value creation and learning in PSFs. The three central components in the framework, domain choice, service delivery, and resource base, are suggested to represent critical elements of PSF value creation logic. Further, the personalization and codification strategies for managing knowledge seem especially important to the empirical investigation of CD policy in PSFs.

The notion that competence represents a critical resource for PSF competitive ability needs further clarification, as addressed in the following section on strategic resources.

## **2.2. Strategic resources**

Based on competence as a key example of intangible resources in PSFs, this study addresses how competence development takes place in such firms. Hence, this section on strategic resources serves three purposes. First, it addresses why and in what way resources are of strategic importance. In this respect, the resource-based view of the firm is used to inform the discussion. Thereafter, the distinction between tangible and intangible resources is clarified. Third, the importance of accumulating intangible resources is highlighted, and a conceptual framework for this process is discussed.

### **2.2.1. The resource-based view**

A primary concern of strategic management is how companies bring about value (e.g. Normann & Ramírez, 1993) and gain and maintain competitive advantage over time (e.g. Porter, 1985; Barney, 1991; Black & Boal, 1994; Teece et al., 1997). On the one hand, the strategy literature emphasizes firm growth through the market positioning of business firms in order to increase profits (e.g. Porter, 1980; Birley & Westhead, 1990). Then, understanding market mechanisms and how firms compete (e.g. D'Aveni with Gunther, 1995) become central strategic challenges. On the other hand, core strategic issues related to the resources of organizations (Barney, 1991) are e.g. why some firms perform better than others (Penrose, 1959; Chandler, 1962), how a firm's resource position influences profitability (Wernerfelt, 1984), and why firms differ (Nelson, 1991). However, according to Grant (1991), the

aim of strategic management is to explain firm performance and the determinants of strategic choice based on the *matching* of internal resources and skills with the opportunities and risks created by the external environment.

In early conceptual strategy work conducted in the 1960's and 70's, scholars generally gave equivalent attention to the strengths and weaknesses of firms on the one hand, and the opportunities and threats in the competitive environment on the other (e.g. Ansoff, 1965; Andrews, 1971). However, with Porter's publication of *Competitive Strategy* in 1980, the emphasis shifted toward external, industry-based competitive issues. In this environment, Wernerfelt (1984:171) asserted that: "*For the firm, resources and products are two sides of the same coin,*" reminding scholars and practitioners of the importance of resources as antecedents to products and, ultimately, firm performance. Picking up on Wernerfelt's statement, and as a counterweight to a focus on external opportunities and threats determined by industry conditions, the resource-based view emphasizes the internal resources available to the firm.

The underlying assumption of the economics-based RBV is that rents based on sustained superior performance grow out of the rational identification and use of resources that are valuable, rare, difficult to copy, and without equivalent substitutes (Barney, 1991).<sup>12</sup> The idea is that firm heterogeneity in acquiring and deploying firm-specific resources leads to enduring firm variations, which account for the generation of (above normal) profits. These lasting firm differences are a function of firms' abilities to exploit imperfect and incomplete factor markets in obtaining and developing strategic assets (Barney, 1991). Company decisions about selecting and accumulating resources are characterized as economically rational within the constraints of limited information, cognitive biases, and causal ambiguity (Lippman & Rumelt, 1982; Reed & DeFillippi, 1990; Amit & Schoemaker, 1993; Peteraf, 1993; Ginsberg, 1994). In other words, the RBV examines the characteristics of resources and the strategic factor markets from which they are obtained to explain firm heterogeneity and sustainable competitive advantage. The latter refers to the implementation of a value-creating strategy that is not susceptible to duplication and not currently implemented by competitors (Barney, 1991).

Firm resources are by Barney (1991:101) broadly defined as "*all assets, capabilities, organizational processes, firm attributes, information,*

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<sup>12</sup> The framework of Barney (1991) has later been presented in a shorter and more pragmatic version termed the VRIO framework (Barney, 1997), where VRIO refers to the questions of Value, Rarity, Imitability, and Organization of a resource.

*knowledge, etc. controlled by a firm that enable the firm to conceive of and implement strategies that improve its efficiency and effectiveness*". The conceptual work of Rumelt (1984), Barney, (1986b, 1991), Dierickx and Cool (1989), and Conner (1991) generally focuses on the characteristics of firm resources that can contribute to a sustainable competitive advantage in a particular product-market. From the core ideas underlying the RBV, further investigations suggest that single-business firms can achieve competitive advantage from various resources such as information technology (Mata, Fuerst & Barney, 1995; Powell, 1997), strategic planning (Michalisin, Smith & Kline, 1997), organizational alignment (Powell, 1992), human resources management (Flood, Smith & Derfus, 1996), trust (Barney & Hansen, 1994), administrative skills (Powell, 1993), top management skills (Castanias & Helfat, 1991), and guanxi (Tsang, 1998) (referred to in Priem and Butler, 2001:25).

According to Penrose (1959), however, the value of a resource depends not on its existence, but on its utilization. Resources are valuable only to the extent that they can deliver valuable services. Resources can generate different types of services and hence: "*exactly the same resource when used for different purposes or in different ways and in combination with different types or amounts of other resources provides a different service or set of services*" (Penrose, 1959:25). These different sets of services also have different potentials for generating competitive advantage.<sup>13</sup> Thus, building on the ideas of Penrose (1959), the RBV has developed into a broader and more dynamic view which suggests that it is not the stock of resources, but rather the combination and ways in which resources are applied, that may provide a competitive advantage (e.g. Leonard-Barton, 1995; Løwendahl, 1997). This study builds on the latter advancements in particular.

Notwithstanding these insights, and despite its major impact on strategy literature, the economics-based RBV has also received extensive critique.

#### *Critique of the RBV*

The applicability of the RBV is contested, and there is debate concerning the understanding, use, and scope of the perspective, or theory (e.g. Coff, 1997; Scarbrough, 1998; Priem & Butler, 2001). The dominant focus is on deductive economics in which a resource represents a value if it is superior

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<sup>13</sup> When Penrose's basic path-breaking propositions were first set forth, they received little attention. However, with the growth of the "knowledge society", her work on managerial activities, organizational routines, and knowledge creation as critical to firm prosperity, became widely acknowledged. Currently, Penrose's "resources approach" to the growth of the firm is considered an antecedent for the resource-based view of the firm (Kor & Mahoney, 2000).

to that of competitors (e.g. Rumelt, 1984; Barney, 1991; Amit & Schoemaker, 1993; Peteraf, 1993). Thus, researchers who do not explicitly deal with the dynamics of resources (e.g. Wernerfelt, 1984; Barney, 1986a; 1991; Amit & Schoemaker, 1993; Peteraf, 1993) have been criticized for treating resources in an ex post manner as an asset ready to be applied in a range of work activities (Empson, 2001a). As a result, the few empirical studies on competence that exist within the RBV, primarily concern measures which set out to quantify the nature and effects of organizational competence ex post. For example, McGrath et al. (1995) operationally define “competence” as the degree to which a firm or its subunits reliably meet or exceed objectives. They identify two processes central to competence, termed “comprehension” and “deftness”. Based on a regression analysis, they show that the competence items reflect how well projects perform with respect to achieving basic goals, such as staffing, budget, and revenue objectives, typically measurable quantities. Another RBV study addresses heterogeneous organizational competence within ten pharmaceutical companies, distinguishing between “component” and “architectural” competence, using an econometric model (Henderson & Cockburn, 1994). In exploring the role of competence in pharmaceutical research, “component competence” refers to the local abilities and knowledge that are fundamental to day-to-day problem solving, whereas “architectural competence” is defined as the ability to *use* the component competences, “*to integrate them effectively and to develop fresh component competencies as they are required*” (1994:65). The quantitative studies of Henderson and Cockburn and McGrath et al. to some extent acknowledge the development of competence. However, how competence development actually takes place, i.e. the process that may underlie and constitute the ground for competitive ability, is not given specific attention.

In addition to a static view on resources, the RBV has recently also been criticized by more micro-oriented researchers (e.g. Johnson et al., 2003). The objection is primarily directed to the RBV focus on the macro level, with a superficial large-scale approach to the investigation of sustainable rents. Johnson et al. (2003) point out that the insight of the RBV, that the roots of superior performance lie in the unique and hard to copy attributes, is not likely to fit into broad, all-inclusive categories or leap out to the detached observer. Hence, the conceptual and statistical studies that dominate the RBV impose upon the discipline a flat, featureless characterization of resources, ironic given that their value is supposed to lie precisely in their uniqueness (Rouse & Daellenbach, 1999). Thus, it is likely that the RBV can be advanced through qualitative research, which is potentially capable of capturing both detail and nearness to the field in a better way than quantitative studies.



Further, in terms of the vague criteria for value represented by Barney's (1991) article, Priem and Butler (2001) claim that "*Prescription regarding competitive advantage itself, still is hindered because the criteria for value in the RBV remain, at present, in an exogenous "black box"*". In addition, Barney's (1991) definition of resources is criticized for being imprecise and all encompassing (e.g. McGrath et al., 1995; Haanæs, 1997; Løwendahl, 1997; Priem & Butler, 2001). McGrath et al. (1995) suggest that more carefully designed definitions of key constructs may be helpful in terms of reducing the problem of "all-inclusive resources". Thus, identifying specific competences that may be particularly effective in certain contexts might be a useful first step in contributing to the RBV in strategic management (Priem & Butler, 2001). In this respect, Miller and Shamsie (1996) have raised and begun to answer important when, where, and how questions about competence-based resources and value creation, establishing boundaries for the RBV by hypothesizing contexts within which particular resources are determined to be more or less valuable. From a study of the major U.S film studios from 1936-1965, two types of environments were investigated. They concluded that "property-based resources" in the form of exclusive long-term contracts with stars and theaters enhanced financial performance in stable, predictable environments. On the other hand, "knowledge-based resources" in the form of production and coordinative talent and budgets supported financial performance in a more changing and unpredictable environment. Another attempt to further define resources is the distinction made between tangible and intangible resources, as discussed below.

### **2.2.2. Tangible and intangible resources**

Løwendahl (1997) distinguishes between different types of resources termed *tangible resources* and *intangible resources*, as illustrated in figure 4. The first refers to financial assets, physical equipment, technology, buildings etc. The latter includes "relational resources" in terms of reputation, loyalty, and relationships on the one hand, and "competence" in terms of knowledge and capabilities on the other.<sup>14</sup> Løwendahl's notion of intangible resources builds on Itami's (1987) concept of "invisible assets". He conventionally defines resources as:

"... the people, goods, and capital a firm can deploy to meet its short- and long-term goals. A small but increasing number of managers add information to the list. That final item is not easy to pin down. Technology is an example, but information is much more than that. Consumer trust, brand image, control

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<sup>14</sup> While "competence" is highlighted in this study, other resources including organizational culture and management skills are also recognized as important. Yet, to focus the research, it has been necessary to emphasize one type of intangible resources in particular and make analytical limitations with regard to others.

of distribution, corporate culture, and management skill are all informational resources. I call these information-based resources invisible assets, and they are just as essential for effective operation as the more visible corporate resources. More than that, I believe they are the most important resources for long-term success” (Itami, 1987:12).

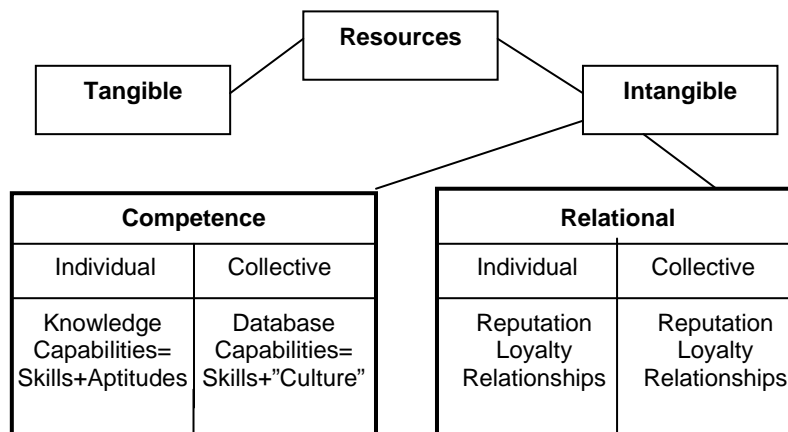


Figure 4. Strategic resources (Løwendahl, 1997: 87)<sup>15</sup>

Hence, a company’s resource base broadly consists of the combination of tangibles and intangibles, which may be useful to generate value for the firm and its stakeholders. However, for a PSF, the intangible resources in terms of reputation and competence primarily define its existence (Løwendahl, 1997). According to Itami (1987), the aim of strategic management is to manage firm resources such that the firm’s resource base is improved over time. In this respect, intangible resources are of interest because their value, in contrast to tangible resources, typically increases as they are used and challenged. In general, intangible resources can represent a key source of competitive power because they are hard to accumulate, and capable of simultaneous multiple uses. In addition, they are both inputs and outputs of business activities. In this respect, intangible resources “... are often a firm’s only real source of competitive edge that can be sustained over time” (Itami, 1987:1).

Intangible resources, which are the preferred terms in this study, are

<sup>15</sup> In relation to collective competences, the term “skills” is in the third edition (Løwendahl, 2005) changed to “procedures”, as this makes it easier to distinguish between individual and collective competence.

discussed under a variety of names, including distinctive competences (Ansoff, 1965; Andrews, 1971; Hofer & Schendel, 1978), core competences (Prahalad & Hamel, 1990), core capabilities (Stalk, Evans & Shulman, 1992), internal capabilities (Barney, 1986b), embedded knowledge (Badaracco, 1991), absorptive capacity (Cohen & Levinthal, 1990), underlying capabilities (Ghemawat, 1986), unique combinations of business experience (Huff, 1982; Prahalad & Bettis, 1986), corporate culture (Fiol, 1991), valuable heuristics and processes (Schoemaker, 1990), unique managerial talent (Penrose, 1959) (referred to in von Krogh & Roos, 1995:60), and strategic assets (Winter, 1987). However, despite numerous references to resources being useful, there is still a lack of careful attention to how these resources are developed (Priem & Butler, 2001). According to Priem and Butler (2001:34), the problems of the static, survey studies typically conducted within the RBV “*might be exacerbated when theorists extend the RBV to second-order issues and beyond, wherein the ability to learn to develop effective resources is in itself a resource*”. In line with this argument, competence development in firms can also represent a potential strategic resource. Hence, a discussion of resource accumulation follows.

### **2.2.3. Resource accumulation**

Another extension and advancement of the RBV in general is found in the literature on dynamic capabilities, which emphasizes the accumulation of resources (e.g. Teece et al., 1997; Eisenhardt & Martin, 2000; Zollo & Winter, 2002). Building on Wernerfelt and Montgomery (1988), Teece et al. (1997) claim that the RBV focuses on strategies for exploiting existing firm-specific assets. However, consideration for developing new capabilities is also invited (Wernerfelt, 1984). If control over scarce resources is the source of economic profits, then, it follows that issues such as CD, the management of knowledge/know-how and learning become fundamental strategic issues. However, only recently have researchers begun to focus on the specifics of how some organizations first develop firm-specific capabilities and how they renew competences to respond to shifts in the business environment (Teece et al., 1997). This ability to renew competences and achieve new forms of competitive advantage is referred to as *dynamic capabilities* (Teece et al., 1997), and represent a conceptual extension of the economics-based RBV.

The competitive advantage of firms is seen as resting on distinctive processes (ways of coordinating and combining), shaped by the firms' specific assets, such as knowledge assets and complementary assets, which are difficult to trade, and the evolution path(s) firms adopt or inherit (Teece et al., 1997). Building on this argument, Eisenhardt and Martin (2000) claim that dynamic capabilities are a set of specific and identifiable processes such as product development, strategic decision-making, and knowledge brokering (Hargadon & Sutton, 1997). Although dynamic capabilities are

idiosyncratic in their details and path dependent in their emergence, they also have significant commonalities (“best practice”) across firms. This suggests that they are more homogeneous, equifinal, and substitutable than is usually assumed in the economics-based RBV (Eisenhardt & Martin, 2000). Commonalities arise because there are more and less effective ways of dealing with the specific organizational, interpersonal, and technical challenges that must be addressed by a given capability. Thus, long-term competitive advantage lies in the configuration of resources that are built through processes embedded in firms, and which evolve via well-known learning mechanisms - not in the capabilities themselves (Eisenhardt & Martin, 2000). This implies that capabilities can be developed from many starting points and along different paths.

Yet, firms are heterogeneous with respect to their resources, and resource endowments are “sticky” (Teece et al., 1997; Szulanski, 1996), at least in the short run, as firms often lack the organizational capacity to develop new competences quickly (Dierickx & Cool, 1989). In addition, some assets are simply not readily tradable, e.g. tacit knowledge and reputation (e.g. Argote, 1999). In this respect, competences are intriguing assets as they typically must be built, because they cannot be bought (Teece et al., 1997). This makes CD a key resource for long-term value creation, and potential competitive advantage. Hence, it is not only the bundle of resources that matters, but the mechanisms by which individuals learn and develop competence, and the forces that limit the rate and direction of this process (Teece et al., 1997).

Notwithstanding the acknowledgement of the accumulation of resources, empirical research on dynamic capabilities is yet in its infancy. Hence, the dynamic capability perspective does not provide precise suggestions for the study of competence development as a potential strategic resource. Itami (1987), however, suggests that a firm can achieve competitive advantage through the effective use and efficient development of its competences. Through the concept of “invisible assets”, he illustrates the importance of accumulated experience and information to a corporation’s strategic resources. In addition, he emphasizes a “dynamic fit” between resources and the environment. For these reasons, Itami is frequently cited as a contributor to the resource-based view (see e.g. Løwendahl, 1997). Hence, the argument for the importance of studying CD in PSFs also builds on Itami’s thoughts on accumulating intangible resources (or invisible assets, as are the terms he uses) in particular, within the perspective of the RBV in general.

According to Itami (1987), resources change and strategy is often the source of that change. When firms use their resources effectively, they create new invisible assets. “Resource fit”, thus, requires more than effective utilization

of existing resources; efficient accumulation of new resources is just as important. Further, new resources must be accumulated at low cost, quickly, and in a timely manner. Invisible assets are accumulated in two ways. In the “direct route”, a firm takes explicit action to achieve that goal based on what Itami terms an “asset accumulation strategy”. In the second route, the “operations route”, invisible assets are accumulated as “by-products of daily operations”. In this sense, this route is seen as indirect. These two routes to resource accumulation are illustrated in figure 5.

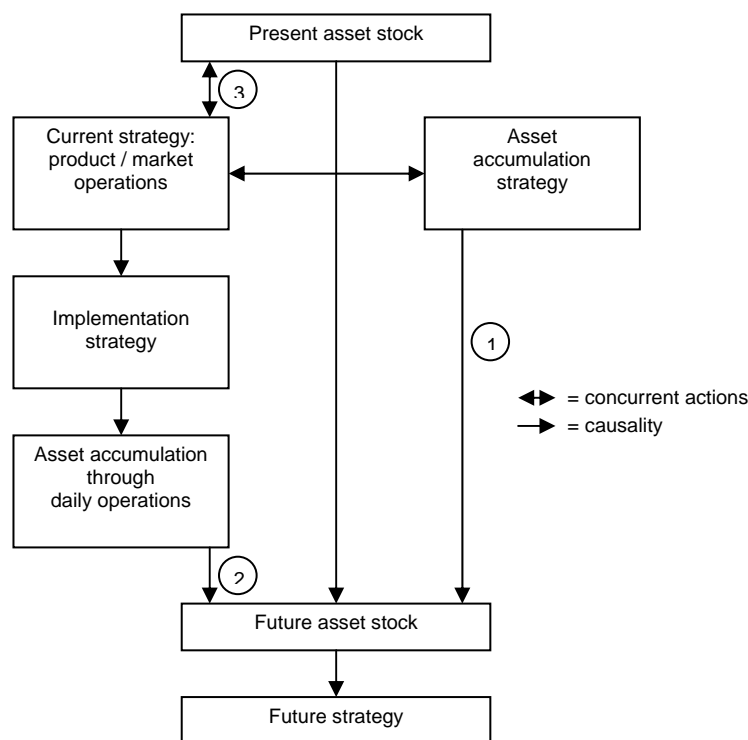


Figure 5. A framework of asset accumulation (Itami, 1987:129)

Applied to this study, the figure is explained as follows:

- *Present asset stock*. This includes the current competence available to the firm.
- *Asset accumulation strategy*. The company can take explicit action to enhance the competence of the people in the resource base (route 1 in the figure). This represents the direct route in terms of *investments in CD*, and includes e.g. training programs or other

efforts undertaken in order to improve work tasks or processes.<sup>16</sup> In this way, CD takes place through implementation of the firm's strategy in the operations route and through competitive pressures in the market. According to Itami (1987:25): "That approach requires little further explanation".

- *Current strategy: product/market operations.* This concerns the present strategy regarding the firm's product/market portfolio.
- *Implementation strategy.* This concerns the carrying out of the current strategy throughout the firm.
- *Asset accumulation through daily operations.* Competence can be developed as a by-product of current strategies in the product/market portfolio and the operations mission. In this route, both financial resources and CD are created without any direct effort by the firm (Itami, 1987). When competence develops as a by-product of daily operations, the process can take place at low cost. However, CD is not automatically created through these routes. The process needs effective management support and an explicit understanding of the purpose of developing competence (Itami, 1987). The operations route can be regarded as an attractive and efficient alternative to the direct route. On the other hand, CD through the operations route may take longer than through the direct route. In return, it is often more reliable and steadier (Itami, 1987). As a result, a mix of both routes is suggested for this study, based on an understanding of the advantages and disadvantages of each route.
- *Future asset stock and future strategy.* A current strategy has to create enough resources for future strategy to be carried out. And the future strategy must make effective use of the resources that have been developed. By doing, this, the firm's "dynamic combinatorial effect" represents the basis of "dynamic resource fit". Hence, effective strategy in the present builds invisible assets, and the expanded stock enables the firm to plan its future strategy (Itami, 1987). For example, through the two routes to CD, a firm's competence base is enhanced. These improved competences, again, may be the firm's entry into new markets. By creating a static imbalance between resources and operations (route 3 in the figure), the flow of additional resources for use in future strategy (route 2 in the figure), is increased. However, there is no assurance that successive short-term imbalances will lead to the desired long-term balance. Still, avoiding all short-term imbalances means giving up the potential for dynamic strategy (Itami, 1987). If a firm fails to

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<sup>16</sup> In this study, "investments" are not restricted to direct financial investments. Efforts and action made by people, as well as time devoted to CD issues, are also included.

develop competence, it loses in two ways. Not only does its pool of competences fail to increase, but the basic structure of the resources can be weakened as well. In addition, the failure of the process may result in further negative effect on the firm (Itami, 1987).

Based on this framework, two routes to potential CD in firms are identified, whereby the resource base can be improved. As a result, the firm's competitive ability may be strengthened and new market opportunities may arise. Hence, building on Itami (1987), these two routes to CD and the arguments underlying their strategic importance seem to represent a useful approach for the empirical investigation. In terms of how CD actually takes place in this study, the two routes to CD are especially central to the second and third sub questions set forth in chapter 1.

In light of the VCPs of PSFs-framework, this framework particularly emphasizes one way in which the resource base can be improved. This includes learning as a by-product of service delivery. However, based on the above discussion, Itami (1987) also launches another route to CD, namely direct investments in CD. As a result, it seems fruitful to include both routes to CD into the VCPs of PSFs-framework. This integration is further reverted to in section 2.4.

#### **2.2.4. Summary**

This discussion on strategic resources from the resource-based view has shown that valuable, firm-specific resources, which cannot easily be imitated or substituted, are vital because they can generate profits and enhance competitive ability. Such resources are further suggested dynamically accumulated in order for a firm to stay competitive. In this respect, the development of intangible resources may represent a long-lasting resource. Within this not so well researched field, this study argues the importance of addressing the development of competence as a potential strategic resource. Following Itami (1987), there are particularly two ways in which a company can develop competence. (1) The firm can take explicit action to enhance the competence of the work force through *investments in CD*. (2) Competence can be developed as a *by-product of daily operations*. Hence, this study builds on these two routes as central to the investigation of CD in PSFs.

However, PSF and strategy literature have paid little attention to what may be “inside” the boxes of “Asset accumulation strategy” and “Asset accumulation through daily operations” in Itami's framework. Therefore, in order to facilitate empirical investigation of how competence development takes place in PSFs, the next section specifies central processes of the two routes to CD through a discussion of research on people's competence and learning in organizations. Since these latter strands of literature have not

paid particular attention to the strategic importance of learning in business firms, a potential for fruitful cross-fertilization is suggested.

### **2.3. Competence and learning**

Based on the two routes identified as important to the development of competence as an intangible resource in PSFs, this section provides further content to these routes through the support of literature on competence and learning. The aim is to develop a conceptual understanding for the analysis of how professionals develop competence in PSFs. Regarding *CD through daily operations*, CD is argued to take place in the course of everyday work activities. In learning literature, this is commonly referred to as “learning by doing” (e.g. Dewey, 1916). Hence, to put focus on an experience-based learning approach (e.g. Dewey, 1916; Kolb, 1984) in this study seems highly relevant. This is due to several reasons: The perspective of experience-based learning emphasizes experience as the source of learning and development, it focuses on individuals’ learning conditions, as well as individuality in learning. However, this perspective has been criticized for de-emphasizing aspects of collective learning. As a result, a discussion of learning in groups based on team literature and communities of practice is further included in this section. In terms of *CD through investments*, organizational orchestration for learning is discussed. Building on Nordhaug (1993), focus is on important determinants of CD in firms. In particular, the firm’s training activities seem important. In addition, different types of competences in firms are also addressed. Hence, this section is structured as follows: First, learning based on individual experiences is discussed. Second, learning in groups is addressed. Third, organizational conditions and investments in competence development are discussed. Fourth, different types of competences are attended to. Finally, a summary is provided, which synthesizes and points out important directions for the empirical study.

#### **2.3.1. Learning based on individual experiences**

According to Kolb (1984), the experience-based learning theory of human development emphasizes the process of learning from experience that shapes and actualizes individual developmental potentialities. The learning perspective rests on the foundations of John Dewey, Kurt Lewin, and Jean Piaget. Together, these define the following main characteristics of experience-based learning: *First*, experience plays a central role as the source of learning and development. The learning process is seen as “learning by doing”, shaped by here-and-now concrete experiences, as well as feedback processes. Situations of learning by doing are often characterized by uncertainty, disorder, and indeterminacy (Dale, 1993). According to Dewey (1938), the learning process transforms impulses,



feelings, and desires of concrete experience into higher-order purposeful action. For example:

“The formation of purposes is, then, a rather complex intellectual operation. It involves: (1) observation of surrounding conditions; (2) knowledge of what has happened in similar situations in the past, a knowledge obtained partly by recollection and partly from the information, advice, and warning of those who have had a wider experience; and (3) judgment, which puts together what is observed and what is recalled to see what they signify. A purpose differs from an original impulse and desire through its translation into a plan and a method of action based upon foresight of the consequences of action under given observed conditions in a certain way” (Dewey, 1938:69).

*Second*, learning is best conceived as a process, not in terms of outcomes. This stands in sharp contrast to the behavioral theories of learning created by e.g. Watson, Hull, and Skinner, which proceed from the assumption that elements of consciousness always remain the same. As a result, the tendency is to define learning in terms of its outcomes, whether these are knowledge in an accumulated storehouse of facts or habits representing behavioral responses to specific stimulus conditions (Kolb, 1984).

*Third*, learning is a continuous process grounded in experience. This means that knowledge is continuously derived from and tested out in the experiences of the learner (Kolb, 1984).

*Fourth*, even though learning is seen to primarily occur through individual experiences, learning involves transactions between the person and the environment. According to Dewey (1938:39): “*Experience does not go on simply inside a person. It does go on there, for it influences the formation of attitudes of desire and purpose. But it is not the whole of the story*”. He continues: “*An experience is always what it is because of a transaction taking place between an individual and what, at the time, constitutes his environment, whether the latter consists of persons with whom he is talking about some topic or event, the subject talked about being also a part of the situation; the book he is reading ... or the materials of an experiment he is performing. The environment in other words, is whatever conditions interact with personal needs, desires, purposes, and capacities to create the experience which is had*” (Dewey, 1938:42-43). This implies that the characteristics of the experiences will largely shape CD. In this respect, the practice opportunities individuals are exposed to will heavily influence learning. Nordhaug (1993:200) compares competences with muscles: “*they are strengthened and maintained when activated, and shrink when not in use for an extended period of time*”. Hence, having the opportunity to practice and rehearse what is learned is necessary to maintain and develop competence. On the other hand, lack of such experiences may lead to

negative learning, i.e. loss of knowledge and skills (Nordhaug, 1993). It is essential then to be involved in practice that not only exploits existing competence, but also provides for further explorations (March, 1991). CD requires demonstration of new knowledge and skills, and some authors have argued that such competence must be over-learned through practice so that smooth performance can be maintained under stress and other difficult conditions (Hall & Fukami, 1979). Further, practice opportunities provide possibilities to learn from failure (Nordhaug, 1983). However, Argyris (1991) claims that professionals are less susceptible to learn precisely because they are well educated, high-powered, and high-committed. Professionals rarely experience failure and, hence, have not learned how to learn from failure because of their propensity to subscribe unsuccessful projects to factors outside themselves, such as limitations by clients etc. They thereby turn the focus away from their own role and actions, and, thus, bring learning to a “grinding halt” (Argyris, 1991:103).

*Finally*, experience-based learning is seen as the process of creating knowledge. Knowledge results from the transaction between these objective and subjective experiences in the process called learning. Hence, learning is suggested the process whereby knowledge is created through the transformation of experience (Kolb, 1984).

Based on a study of architects, psychotherapists, engineers, and town planners, Schön (1983) argues that learning from one’s own experience relates to two fundamental dimensions: reflection in and on action. Further, a practice opportunity may involve uniqueness as well as elements of repetition. As practice becomes more repetitive and routine, or as “knowing-in-practice” becomes increasingly tacit and spontaneous, the practitioner may miss important opportunities to think about what (s)he is doing (Schön, 1983). Moreover, according to Schön (1983), the complexity of practitioners’ learning by doing seems to be further intensified by rapid technological changes. Thus, a dilemma of the professional today lies in both the knowledge available as well as meeting varying expectations of the society. In such situations, practitioners are disturbed to find that they cannot account for processes they have come to see as central to professional competence based on learning by doing. As a result, it may be difficult to describe and teach what might be meant by making sense of learning by doing, which involves e.g. uncertainty, artistic performance, and choice between competing professional paradigms (Schön, 1983).

According to Kolb (1984), experiential learning differs from rationalist and other cognitive theories of learning that tend to give primary emphasis to acquisition, manipulation, and recall of abstract symbols, and from behavioral learning theories that deny any role for consciousness and

subjective experience in the learning process. Rather, learning is seen as a social process, and, thus, the course of individual development is shaped by the cultural system of social knowledge. How learning shapes the course of development can be explained through Vygotsky's (1978) concept of "the zone of proximal development", which is where learning occurs. The zone of proximal development relates to the connection between the learner's current competence and the next step of development. A good learning situation, thus, occurs when the distance between the current competence and the efforts made to enhance competence corresponds to the actor's "zone of proximal development". Through experiences of imitation and communication with others, as well as interaction with the physical environment, individual developmental potentialities are enacted and practiced. If these become internalized, they can be seen as a development achievement (Kolb, 1984). As a result, learning becomes the vehicle for human progress, and, therefore, also the foundation for value creation and business development.

In particular, the experiential learning perspective has been criticized for being too occupied with the contribution of individual experiences to learning, and, thereby neglected collective aspects of the learning process. Recently, there has been a large increase in research on group learning. Since PSFs can be seen as project-based organizations, insight from studies of learning in groups is likely to be relevant to this study of CD in PSFs.

### **2.3.2. Learning in groups**

The influence of group characteristics on professionals' CD depends on the ways in which competence is distributed and shared among its members (Lam, 2000). Cohen and Bailey (1997) defined a group in an organizational setting as a collection of individuals who are interdependent in their tasks, who see themselves and are seen by others as an intact social entity, and who are embedded in a larger social system. Building on Argote (1999), competence from research on groups relates to different alternatives including: (i) people can learn from competence elicited or shared by others in the group through collaboration and interaction, (ii) people can learn from the combination of competences: once competence is shared and evaluated it must be combined and transformed into a collective value, and (iii) competence can come from outside the group through learning from a third party. Thus, professionals' CD involves the processes through which team members learn from sharing, generating, evaluating, and combining different types of competences. There is, however, considerable diffusion and overlap between these processes. Whereas some processes may occur very explicitly, others may be more implicit, and, hence, require particular sensitivity and attention. Hence, group functioning, trust, team composition, and the degree

to which teams are able to recall, share and combine competence with others in the group are likely to influence competence development (Argote, 1999).

In particular, there has been major research interest regarding the composition of teams. This literature typically distinguishes between homogeneous and heterogeneous teams (Williams & O'Reilly, 1998). Compared to homogeneous groups, heterogeneous groups are more likely to generate new knowledge as a result of their interaction (Argote, 1999). This is because diversity causes group members to rethink their positions and to create new approaches and alternatives that accommodate different views. Too much diversity, however, can impair the learning process, if there is not some overlap or base of common understanding (Argote, 1999).

Another arena for learning which recently has gained interest is research on what is termed communities of practice (CoP) (e.g. Lave & Wenger, 1991; Wenger, 1998; Swan, Scarbrough & Robertson, 2002; Hildrum & Fosstenlökken, 2007). CoP is an analytical construct which implies participation in an activity system about which participants share understandings concerning what they are doing and what that means in their lives and for their communities (Lave & Wenger, 1991). Hence, a community of practice is a set of relations among persons, activity, and the world, over time and in relation with other tangential and overlapping communities of practice (Lave & Wenger, 1991). According to Wenger (1998), what is shared by a CoP, what makes it a community, is its *practice*. This is where action takes place, and where competence develops. In the words of Brown and Duguid (1991), it is the actual practices that determine the success or failure of organizations. Therefore, understanding practice within this perspective is to get insight into what goes on in CoP. However, while the concepts of practice connotes doing, it is not just doing in and of itself. It is doing in a historical and social context that gives structure to what we do (Wenger, 1998).

CoP researchers, in contrast to the experience-based learning perspective, see learning as an integral and inseparable aspect of social life (Lave & Wenger, 1991), in which learning is "*not something we do when we do nothing else or stop doing when we do something else*" (Wenger, 1998:8). This means that it can be difficult for individuals to be conscious about their own learning, and to distinguish learning from the social process of which it is part – both with regard to time and content. To research, this implies that challenges may arise with regard to people's ability to talk about learning and competence. These issues are reverted to and further elaborated in the chapter on methodology.

Communities of practice share many similarities with what has above been referred to as groups or teams. Another collective grouping is e.g. informal networks (e.g. Cross, Nohria & Parker, 2002). According to Wenger and Snyder (2000), CoP, formal work groups, teams, and informal networks are useful in complementary ways. A comparison of their characteristics is summarized in table 4:

*Table 4. Comparison of different group constellations (Wenger & Snyder, 2000:142)*

	<b>What is the purpose?</b>	<b>Who belongs?</b>	<b>What holds it together?</b>	<b>How long does it last?</b>
<b>Community of practice</b>	To develop members' capabilities; to build and exchange knowledge	Members who select themselves	Passion, commitment, and identification with the group's expertise	As long as there is interest in maintaining the group
<b>Formal work group</b>	To deliver a product or service	Everyone who reports to the group's manager	Job requirements and common goals	Until the next reorganization
<b>Project team</b>	To accomplish a specified task	Employees assigned by senior management	The project's milestones and goals	Until the project has been completed
<b>Informal network</b>	To collect and pass on business information	Friends and business acquaintances	Mutual needs	As long as people have a reason to connect

It is likely that these different settings also bring various frames for learning. Compared to the other constellations, CoP are merely self-driven and constitute themselves. In terms of CD, this implies high motivation for learning as the interest in the common subject is very strong.

In terms of collective collaboration in PSFs, Maister (1993) points to the importance for junior employees to be exposed to a variety of senior professionals. In this respect, the ratio of junior, middle-level, and senior members - the firm's leverage - influences these interactions. Promotions may be an incentive to visualize improved competence, and are often based on the judgments of senior members who have worked with a given junior (Maister, 1993). Maister's emphasis is on the CD of junior staff, neglecting the need for seniors to maintain and develop their competence further. Correspondingly, Lave and Wenger (1991) in their perspective of situated

learning, discuss legitimate peripheral participation as the gradual move of apprentice newcomers to become old-timers. These processes are at first legitimately peripheral, but gradually they increase in engagement and complexity. In the context of a changing shared practice, newcomers learn from old-timers (Lave & Wenger, 1991). At the same time, old-timers themselves change through acting as co-learners, and, therefore, also the skills being mastered are likely to change in the process. However, the authors do not carefully explain how such skills change, nor the activities facilitating learning for both newcomers and old-timers. Seniors, however, when interacting with juniors, may differ in their capabilities and in their willingness to share competence and expertise (Starbuck, 1992; Maister, 1993; Løwendahl, 1997; Empson, 2000). In addition, incentives encouraging the seniors' to share their competence, coaching the juniors, and providing them with relevant practice opportunities, may vary from context to context (Nordhaug, 1993). As a result, learning in groups may be influenced by resistance, which requires inducement and encouragement.

So far, based on the discussions of learning in groups and learning through individual experiences, there seems to be at least two approaches to people's learning. These emphasize different elements of the CD process as, respectively, *learning collectively through social interactions* and *learning individually through own experiences*. This is not to say that people do not learn from individual experiences in groups. Or, that learning based on individual experiences does not take place in a social context. The distinction is made for analytical purposes, according to the *predominant* weight each of the two approaches put on either collectivity on the one hand, in contrast to individuality on the other. As a result, CD through daily operations (Itami, 1987) can be specified as taking place based on two types of processes: learning individually and learning collectively.

Next, organizational conditions and investments in CD are attended to.

### **2.3.3. Organizational conditions and investments in CD**

The characteristics of the organization and the environment in general influence learning in firms (Nordhaug, 1993). These characteristics can be manifested in the organization's physical capital (Starbuck, 1992), in its technology, including layout, hardware, and software (Szulanski, 1996; Galbraith, 1990), in its culture (Blackler, 1995; Alvesson, 2002), formal and informal reporting structures, routines, planning, controlling, and coordinating systems (Nelson & Winter, 1982; Levitt & March, 1988; Kogut & Zander, 1992; Løwendahl, 1992), as well as recruitment and retaining issues, incentive systems, and competence investments (Nordhaug, 1993). CD in firms, therefore, rests heavily on the organizing principles by which relationships among individuals, within and between groups, and among

organizations are constructed (Kogut & Zander, 1992). In addition, CD processes are influenced by a unique language or code, and the spoken and unspoken norms and values guiding behavior, as well as the problem-solving activities and patterns of interaction between the members of the organization. If a set of values is learned, permitting a shared culture and a shared language by which to communicate, this enables diffusion of competence (Schein, 1985). This language also provides a normative sanction on how activities are to be organized or what information is to be shared and evaluated.

More specifically, Nordhaug (1993) suggests six different organizational barriers to learning. These include the work system, the incentives system, human resource development (HRD) priority, organizational culture, organizational structure, and time perspective. Each is discussed below. On the other hand, if used right, what Nordhaug refers to as “barriers” are also likely to turn into conditions that can facilitate CD.

#### *Work system*

One of the most important determinants of CD in firms relates to the way work is organized (Nordhaug, 1993). According to Nordhaug (1993:207), central aspects of the work system include how jobs are designed and the extent to which they are being developed, the degree to which rigid boundaries between jobs have been drawn, the amount of bureaucratic control routines and decision making, the mobility across jobs and organizational units, and the extent to which development of multi-skills is encouraged in the firm. However, in many organizations, little systematic work is done in the area of job design and competence development (Nordhaug, 1993).

#### *Incentives system*

Incentives systems are used in order to motivate people to work in a specific direction which aim is to achieve organizational goals - be it in terms of profitability, growth, consolidation, or just survival (Nordhaug, 1993). In literature, a distinction is made between pecuniary and psychological rewards on the one hand, and work performance on the other. However, according to Nordhaug (1993), there is good reason to include the effects that incentives have on the mobility, exchange, and utilization of competence in firms. The reason is that a firm's performance is inextricably tied to the knowledge and skills of its people. Further, there are trade offs between incentives that primarily promote job performance directly and incentives that stimulate CD. Here, a distinction can be made between (i) a competence-based career system, (ii) a career system based on past performance, and (iii) a seniority-based career system. Professionals' CD is likely to be most strongly stimulated by a career or promotion planning

system that puts main emphasis on skills and knowledge when promotion decisions are made. If the system is based on past performance, individuals will easily be tempted to postpone training activities because it is rewarding to work as hard as one can in the short run (Nordhaug, 1993). Consequently, a conflict between short term and long term performance occurs: *“Employees who work hard and do not take the time to update themselves will at some point find that they have exhausted their competence wells without paying any attention to filling them up with new competence”* (Nordhaug, 1993:212).

In comparison, seniority-based career systems are probably the least efficient in terms of CD. Since the length of the employment determines promotion decisions, there is no particular incentive for employees to develop their competence. On the other hand, such a system may promote competence sharing, as people will have little interest in withholding skills and knowledge from others (Nordhaug, 1993). In sharp contrast, in a system based on prior performance, people who seek upward mobility will have the opposite interest, as sharing expertise with others may reduce one’s own competitive ability. Further, competence-based systems may enable individuals to pursue opportune personal CD benefits in favor of the needs of the firm (Nordhaug, 1993). In this respect, performance-based promotion is likely to ensure a better utilization of competences than competence-based or seniority-based systems if results are all that ultimately count. Then, people who are interested in advancing will try to use their competences to create high performance. In addition to the career systems, compensations systems influence CD. Whereas career planning and promotion systems relate to firms’ long-term operations, salaries and wages are set or negotiated to secure short-term efficiency in current jobs (Nordhaug, 1993). Examples of incentives geared to promote highest possible short-term performance is e.g. individual bonus systems for sales people and piece-rate payment. There is no reason to believe that such systems stimulate the long-term process of learning and CD (Nordhaug, 1993). On the contrary, there is an inherent danger that employees working under strong short-term pressure concentrate almost solely on utilizing, or exploiting, the competence they already possess and do not want to “waste time” enhancing their competence through exploration (March, 1991; Nordhaug, 1993).

#### *HRD priority*

The priority firms give to CD efforts differs greatly (Nordhaug, 1993). However, there is a growing tendency to assign this subject a higher priority than before. This is due to a fiercer competition for highly qualified personnel in many industries and geographic regions, and is likely to continue to do so in the decades to come (Nordhaug, 1993). Nordhaug (1993) suggests that firms assigning a high priority to CD will succeed better



than other firms in creating good learning environments which add to the total competence base. Three major factors indicate the priority given to this matter: (i) monetary and time resources, (ii) the institutional role and status of HRD work, and (iii) attention and concrete action directed to competence issues by the top management.

#### *Organizational culture*

There is a dialectic or interactive relationship between culture on the macro level and human action of the micro level in that culture partly determines individual behavior and is in part concurrently constituted and altered through human behavior (Nordhaug, 1993). This way, culture shapes the environment for learning through values and norms attached to the development of competence. Here, language plays a crucial role. For example, a firm which has established a language in which the frequencies of using terms like “challenges”, “competence”, “novel ideas”, “creativity”, and “personal growth” are high, is more likely to reflect an innovation-centered organization than a firm where such terms are rarely applied (Nordhaug, 1993). Recently, firms have used language to formulate explicit slogans pinpointing the need for continuous learning. According to Normann (1984), to be aware of culture is to increase the likelihood of learning. Only when the basic assumptions, beliefs, and success formulas are made conscious and visible do they become testable and open to reinforcement or modification. This suggests language and symbols as important elements of the organizational culture in relation to learning.

#### *Organizational structure*

The degree of centralization influences CD, and there is widespread consensus in literature that high centralization is not particularly favorable for employee learning (Nordhaug, 1993). This opinion relates largely to the vast amount of predefined procedures and little local autonomy in such structures. Another important aspect is the extent to which the organizational structure facilitates contact and learning across jobs, professions, teams, and sub-units (Nordhaug, 1993). In this respect, cross-unit work teams can be established precisely to mix dissimilar competences in order to empower the overall competence of the team. In this respect, small units are considered to be more favorable in terms of learning than large (Quinn, 1985). On the other hand, if the units are too small, they cannot generate the professional and creative cross-fertilization that promotes learning (Nordhaug, 1993). Since organizational structure and work system are closely connected, they will hereafter be treated jointly.

#### *Time perspective*

To what degree are investments in CD regarded and treated as long-term investments? Often, firms view investments in CD as residual, pure costs,

thereby applying a short-term perspective (Nordhaug, 1993). Since competence resources are invisible and largely non-quantifiable, there is substantial uncertainty attached to the expected and actual return on such investments compared to investments in tangible production equipment. In difficult economic circumstances, thus, investments in CD are likely among the first to be cut (Nordhaug, 1993). However, such short-term adjustments may damage the firm's long-term potential since necessary investments are either not made at all or postponed. A paradox is that the firms being forced to cut in CD "expenses" quite often are those that need to develop their human resources most (Nordhaug, 1993). This illustrates what may be called the cost-focus syndrome when dealing with the development of human resources. The issue of time perspective can be seen as an extension of the HRD priority. Due to the close relation between HRD priority and time perspective, these will hereafter be treated jointly under the HRD priority term.

Together, these elements provide a good overview of organizational conditions for CD in firms. Hence, they seem central to a firm's CD processes, particularly in terms of investments in CD and regarding what the firm does in order to orchestrate competence development.

Moreover, it seems relevant to ask what *concrete* training investments are made by firms in order to enhance competence. In this respect, Nordhaug (1993) divides investments into internal and external training investments, as discussed below.

#### *Internal and external training*

According to Nordhaug (1993), there are two main ways of developing competence through investments in training. These are in-house training or training through markets. The term "internal training" is synonymous with in-house training and refers to educational activities that are planned and arranged predominantly by and for people employed in the firm. On the other hand, "external training" activities for employees are arranged and carried out by others, e.g. consultants and training firms, business associations, and educational institutions (Nordhaug, 1993). The main difference between internal and external training relates to their respective degrees of market exposure. In-house training results primarily from processes within single firms. External training is primarily offered as a consequence of adjustments between supply and demand in the market for employee training, often based on negotiations about price and content (Nordhaug, 1993).

Hence, what determines firms' choices in terms of investing in internal or external training activities? According to Nordhaug (1993), internal training

is regarded as being considerably less expensive than external training. Often, the size of the firm determines whether it is economically preferable to carry out in-house training or buy from external providers. Further, internal training can often be timed more flexibly than external training in relation to fluctuations in actual work-load. External training, on the other hand, is beneficial if the aim is to enhance non firm-specific competence. However, if the goal is to develop firm-specific competence through training, such competence must almost exclusively be developed in-house. In this respect, Nordhaug (1993) proposes the following relationships: The more the competition in the firm's service markets is based upon complexity, innovation, and quality, the larger its training activity. Further, based on what he refers to as the external/internal training ratio (the E/I-ratio, i.e. the relative volume of the two training types), it is suggested that: The larger the size of the firm, the lower is the E/I-ratio; The stronger the internal status and power position of human resource management and development staff in the firm, the lower its E/I-ratio; The more the firm wants to develop firm-specific relative to non firm-specific competences, the lower its E/I ratio. However, the aim of this study is not to specifically test out these propositions. Rather, they provide some mental modes of thinking, which can be of help in the process of analyzing the empirical data.

Overall, internal and external training can be characterized as "formal CD", whereas learning based on daily work can be viewed as non-institutional, or "informal CD", developed as a by-product of another activity (Marsick & Watkins, 1990; Nordhaug, 1993). While Nordhaug (1993) points out a lot of questions regarding training which remain open to empirical research, Marsick and Watkins (1990) claim that competence developed through informal and incidental activities, which are difficult to organize and control, represents a neglected, but crucial, area of professional practice. In this study, the broad approach to CD reduces the chance of only capturing the planned and easily measurable investments listed on HR budgets. Moreover, the broad approach opens up for variety, and does not limit a study of CD to either include formal *or* informal processes. Since organizational conditions can promote or impede CD, this section seems particularly important in relation to organizational facilitators and constraints in general, and to the second research sub question of how professionals develop competence through investments in such processes in particular.

The next section discusses different types of competences in firms.

#### **2.3.4. Competences in firms**

In addition to the dimensions of individual and collective competences, as discussed previously, a classification of different types of individual competences in firms has by Nordhaug (1993) been developed into a

typology. Here, the distinction between general and firm specific competence is central. By combining the analytical dimensions of work task specificity, firm specificity, and industry specificity, an analytically conceptual framework for the classification of employee competences is set forth. When task specificity is high, the competence is related to one single work task or very few tasks and is less relevant or irrelevant for the execution of other tasks. If a competence can be used in one firm only, it is firm specific, and by definition, has limited value in external labor markets. On the other hand, all competences that are not firm specific, are general or non-specific and can be sold in external labor markets (Nordhaug, 1993). Hence, firm specificity is different from the dimension of task specificity in that it is defined relative to an element of the firm's external environment. Further, competences can be more or less industry specific, i.e. tied exclusively to one particular industry and not well applicable in others. In table 5, the dimensions of task specificity, firm specificity, and industry specificity are combined into a typology. The cells represent different degrees of competence idiosyncrasy, and, thus, dissimilar types of competence. Each type of competence is further illustrated below.

		F I R M S P E C I F I C I T Y	
		LOW	HIGH
TASK SPECIFICITY		I N D U S T R Y S P E C I F I C I T Y	
		LOW	HIGH
LOW	I Meta-competences	II Industry competences	III Intraorganizational competences
HIGH	IV Standard technical competences	V Technical trade competences	VI Unique competences

Table 5. A competence typology (Nordhaug, 1993:58)

- *Meta-competence* is firm nonspecific, industry nonspecific, and can be utilized in a variety of tasks. Examples of meta-competences: Literacy; Learning capacity; Analytical capabilities; Creativity; Knowledge of foreign languages and cultures; Ability to perceive and process environmental signals and events; Capacity to tolerate and master uncertainty; Ability to communicate; Ability to cooperate with others; Negotiation skills; Ability to adjust to change.
- *Industry competence* relates to familiarity with the industry, and is characterized by low task specificity, low firm specificity, and high industry specificity. Examples of industry competences are: Familiarity with the history of the business; Knowledge about the

industry structure; Knowledge about the current development of the industry; Ability to analyze the operations and strategies of competitors; Knowledge about key persons, networks, and alliances in the industry; Capability to form cooperative ventures and alliances with other companies in the industry.

- *Intraorganizational competence* exhibits low task specificity and high firm specificity. Examples are: Knowledge about colleagues; Knowledge about elements in the organizational culture, such as symbols, sub cultures, history, norms, and ethical standards; Overviews of communication channels, informal networks and alliances within the firm; Mastery of organizational dialect or code; Familiarity with political dynamics in the organization; Knowledge about the firm's strategy and goals.
- *Standard technical competence* embraces a wide range of generally technical, in the sense of operatively oriented competences. This type of competence has high task specificity, low firm specificity, and low industry specificity. Examples are: Typing and stenography skills; Knowledge of generic budgeting and accounting principles and methods; Skills in computer programming; Knowledge of standard computer software; Craft skills and technical professional skills that can be applied across industries.
- *Technical trade competence* is task specific, industry specific, and firm nonspecific. Consequently, this type of competence is portable across firms within the industry and can only be used in accomplishing one or a few limited work tasks. Technical trade competences can be developed through training that is limited to one industry, such as educational programs in banking, or through concrete, practical work. Examples are: Skills in building automotive vehicles; Skills in building aircraft; Skills in assembling computer hardware; Skills in hair-cutting; Bartending skills.
- *Unique competence* is highly firm specific and task specific. Unique competence applies to one task or very few tasks within one firm only and includes knowledge and skills related to operation of unique technology and routines. Examples are: Skills related to the use of specialized tools crafted in the firm; Knowledge about rationalization devices that have been developed exclusively within the company; Skills in repairing tailored technology; Skills in operating specialized, local filing or data systems; Skills related to the administration and maintenance of organizationally idiosyncratic routines or procedures.

Further, from a starting point of defining competence as consisting of knowledge, skills, and aptitudes, Løwendahl and Nordhaug (1994) found that individual competence is influenced by the tasks performed and the situations in which individuals are involved. Based on an interview study with employees working for the Lillehammer Olympic Organizing Committee (LOOC), responses were sorted into six, non-mutually exclusive, categories of competences important for the employees to do a good job - as seen by the employees themselves. The categories consist of the following types of competence: (i) Task related competence (e.g. functional competence), (ii) competence related to mastering the job (e.g. handle stress, prioritize between tasks), (iii) competence related to intra-organizational circumstances (e.g. knowledge about colleagues, internal power relations, and informal decision processes), (iv) competence related to interpersonal relationships (e.g. ability to communicate, collaborate, establish trust), (v) competence related to the organization's external environment (e.g. knowledge of the industry, collaborators, suppliers, competitors, media), and (vi) meta-competence (e.g. general ability to acquire new competence, including creativity, memory, systematic work, flexibility, humility, personal integrity, etc.). As a result, different elements of competence are strengthened in various situations, indicating that competence consists of different, but intertwined parts. Even though the elements are highly interrelated, depending on the situation, etc., an element may be further developed relative to the others.

In this respect, individual competence defined as a composite of knowledge, skills, and aptitudes, turns empirical investigation of the construct into a major challenge. This current study does not seek to “decompose” the concept. Rather, a broad approach to CD is chosen, at the same time as the study also opens up for a more detailed discussion of CD with regard to what kind of competence is potentially developed in which type of work and setting. In this respect, this section seems particularly central to the analysis of the last research sub question set forth in chapter 1, namely what type of competence is being developed.

### **2.3.5. Summary**

Based on learning literature, people learn primarily either from own individual experiences of learning by doing, or through collective social interactions in e.g. groups or communities of practice. Overall, hence, CD can be seen as taking place through (i) learning individually (i.e. based on individual experiences) or through (ii) learning collectively (i.e. based on social interactions). Further, organizational conditions influence CD. These include, but need not be restricted to, incentive system, HRD priority, organizational culture, and organizational structure and work system. In particular, training investments seem important. These can be structured into

at least to overall categories, (i) internal investments (i.e. investments made within the given firm), and (ii) external investments (i.e. investments made external to the firm, e.g. in terms of external courses etc). Based on this section, the focus of the study is sharpened in the following way: Within Itami's framework for asset accumulation presented in chapter 2.2.3, *CD through daily operations* may include learning individually and learning collectively, whereas *investments in CD* may include internal investment and external investments. These specifications of Itami's (1987) two routes to CD serve as guidelines for the empirical study. In addition, different types of competences can result from these two learning routes, where some types of competences can be further developed relative to others.

Based on the above discussions of professional service firms, strategic resources, and competence and learning, these strands of literature are further brought together in an integrated illustration of CD in PSFs. The aim is to visualize the central elements that the empirical study builds on. The illustration brings together the three main sections of the theoretical background, as presented below.

#### **2.4. CD in PSFs**

The above discussion of the theoretical background enables the creation of an illustration of CD in PSFs. From PSF literature, the VCPs of PSFs-framework (Løwendahl et al., 2001) informs an understanding of value creation processes and learning as a by-product of daily operations. However, the framework does not go in detail on how competence is developed in PSFs. In this respect, by building on the RBV and Itami (1987), a framework on asset accumulation is presented, where two main strategic CD processes are identified. These are: (i) investments designed to improve CD and (ii) CD through daily operations. Compared to the VCPs of PSFs-framework, Itami's (1987) first route to CD is left out. However, investments made in order to train the workforce are considered increasingly important for the success of PSFs (Maister, 1993). This is a crucial issue in order to compete for clients as well as to develop and sustain the competence of the employees (Empson, 2000). In general, training refers to the planned and systematic development of resources, including courses and development programs (e.g. Maister, 1993; Nordhaug, 1993). Often, investments in employee training are measured by the annual number of training hours per capita in the firm (e.g. Starbuck, 1992). According to Maister (1993), PSFs offer varying degrees of systematic CD. Some firms have well-established formal training and development programs, whereas in others the pattern of work tasks *is* the program.

This suggests a highlighting of investments in CD in the VCPs of PSFs-framework. Building on Itami (1987), such investments are considered a strategic issue, which can be illustrated related to the strategy/domain choice in the VCPs of PSFs-framework. Hence, for PSFs, ‘prioritizing CD’ is important in addition to ‘prioritizing clients and projects’. Since the framework does not thoroughly explain how these processes take place, this study is designed for the development of such an understanding. Thus, further exploration of the process identified through the arrow related to ‘Learning 1’, as well as ‘investments in CD’ related to the strategy/domain choice is proposed. Together, these two routes are seen to represent central ingredients in the CD process of a PSF. Yet, the “content” of these processes is not sufficiently addressed in neither PSF nor RBV research. Therefore, these two routes to CD are further specified through literature on competence and learning. CD through daily operations relates to learning individually and learning collectively, whereas investments in CD relate to internal investments and external investments. Figure 6 illustrates these integrations. The two “magnifying glasses” in the figure are used to highlight the focus of the study. The figure also points out the parts of the relatively broad VCPs of PSFs-framework, which are of particular emphasis in this study. The two potential routes to CD and their possible impact on the resource base are illustrated by the two broad and curved arrows of the figure.<sup>17</sup>

The illustration serves as a starting point for empirically exploring the research questions set forth in chapter 1.

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<sup>17</sup> The different sizes of these arrows do not by any means indicate different relative emphasis or importance between the arrows. The difference in shape is merely due to technical drawing reasons.



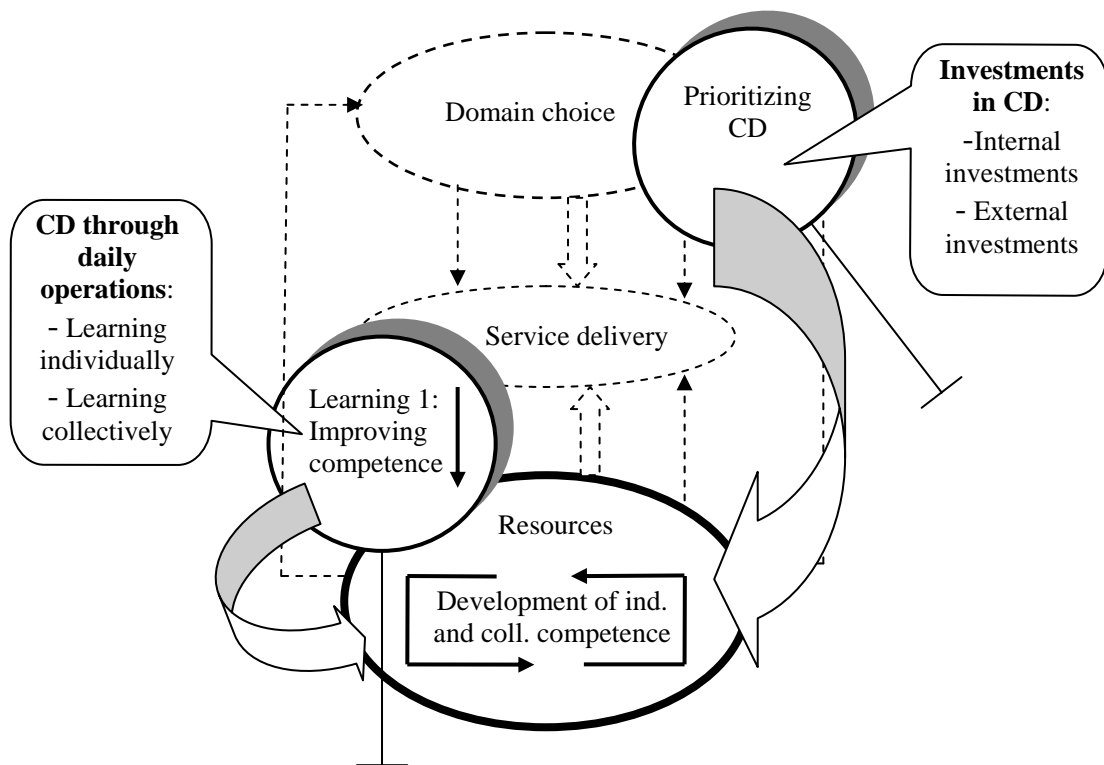


Figure 6. Integrated illustration of CD in PSFs

Finally, a summary of the theoretical background of the study is provided.

## 2.5. Summary

The purpose of this chapter has been to review relevant literature, and to build a theoretical understanding from which to investigate the research questions posed in chapter 1.

*First*, literature on PSFs is presented. Competence represents a key resource in such firms, and value creation is based on the delivery of intangible services to clients (Løwendahl, 1997). Generic strategies for PSFs are discussed, and the VCPs of PSFs-framework (Løwendahl et al., 2001) addresses the link between learning and value creation.

*Second*, the literature review identifies accumulation of intangible resources as important to resource base improvements and competitive ability (e.g.

Teece et al., 1997). Based on Itami (1987), two routes to CD in firms are identified. These include (i) investments in CD and (ii) CD through daily operations. Further, these two routes to CD are connected to the VCPs of PSFs-framework. However, the routes need further clarification. Therefore, literature on competence and learning is attended to.

*Third*, the learning of human beings is emphasized to take place either through individual practice-based experiences (e.g. Kolb, 1984) or through collective social interactions (e.g. Lave & Wenger, 1991). Hence, learning through daily operations relates to *learning individually* or *learning collectively*. Further, organizational conditions and investments in CD influence learning. In particular, investments in CD can be divided into *internal investments* and *external investments*. From these processes, different types of competences can be developed.

*Finally*, an integrated illustration of CD in PSFs is developed based on the theoretical discussions. The illustration is rooted in literature on PSFs and strategic resources, and builds on competence and learning theories in order to further investigate how competence development takes place in professional service firms. The underlying argument is that competence may represent a potential strategic resource which can enhance PSF value creation and competitive ability. The illustration serves as a starting point for structuring the empirical investigation and analysis.

An overview of the key literature this study draws upon is given in table 6 below. The first column refers to the different types of theoretical topics. The corresponding key references are pointed out in the second column, key concepts in the third column, and emphasis and contributions in the fourth column. Particular issues of concern in this study are illustrated in the fifth column.

Table 6. Theoretical concerns

Literature on	Key references	Concepts	Emphasis and contributions	Issues of concern in this study
<b>PSFs</b>	Løwendahl 1992; 1997; Maister 1993; Empson 2000; Newell et al. 2002 <sup>18</sup> Hansen et al. 1999  Løwendahl et al. 2001	Competence as a key resource  Codification Personalization  Competence development and value creation	Research on strategic management, value creation, and knowledge as a source of competitive advantage, mainly within one type of industry / The VCPs of PSFs-framework	A comparative study of how competence development takes place based on multiple firms and industries
<b>RBV</b>	Penrose 1959; Barney 1991; Itami 1987; Løwendahl 1997 / Teece et al. 1997; Eisenhardt & Martin 2000	Resources  Invisible assets Intangible resource Dynamic capabilities	Conceptual work or surveys on resources and competitive advantage. Focus on competence ex post, as a ready made and quantifiable asset	Qualitative study which addresses intangible resource <i>development</i> for enhancing long-term competitive ability
<b>Competence CD and learning</b>	Nordhaug 1993 / Dewey 1916; Kolb, 1984; Schön 1983 / Argote 1999 / Lave & Wenger 1991; Wenger 1998	Competence / Learning by doing, individual learning / Learning in groups / Learning in social interaction	Definition / Experience-based learning  Learning in social interaction	Competence types  The importance of learning
<b>CD in PSFs</b>	Itami 1987  Dewey 1916; Kolb 1984 Wenger 1998  Nordhaug 1993 / Løwendahl et al. 2001	Accumulating invisible assets /  Experience-based learning / Learning in social interaction / Training / Competence and value creation	Investments in CD, CD through daily operations / Learning individually  Learning collectively  Training / The VCPs of PSFs-framework	An integrated illustration for the investigation of how CD takes place in PSFs, as competence represents a key example of intangible resources

The next chapter discusses research design and methodological concerns.

<sup>18</sup> Newell et al. (2002) use the term “knowledge-intensive organizations”, not PSFs.



### 3. Methodology

This chapter discusses the methodological considerations and choices that underlie the empirical research process. First, the research design based on a case-study approach is presented. Second, the research setting regarding types of industries, companies, and informants is attended to. Third, the data collection based on interviews and written materials is addressed. Fourth, the data analysis of within-case and cross-case comparisons is explained. Fifth, criteria for evaluating qualitative research are discussed. Thereafter, a note on presenting the empirical material follows. Finally, a summary of the methodological issues is provided.

#### 3.1. Research design

The research design is based on choices of how to go about conducting the study. According to Yin (1994), these choices depend on the objective of the inquiry, the research question, and the degree of existing theory of relevance to the study. In this respect, an extended case-method (Burawoy, 1991) and a case-study approach (Yin, 1994) are chosen. A further clarification of these choices and approaches follows below.

##### 3.1.2. Case-studies

Yin (1994) emphasizes the development of a preliminary theory of the topic in focus as an essential aspect of study design. This involves “theory elaboration” (Vaughan, 1992), i.e. it draws on extant theory, concepts, and models as a point of departure. Hence, due to the theoretical background, which does not reflect one single perspective or theory, but builds on and brings together different approaches of existing literature, the *extended case-method* (Burawoy, 1991) is found beneficial. The primary focus of the extended case-method is to use empirical case-study data to re-conceptualize, integrate, and extend *existing* theory. Examples of studies which employ the extended case-method as the primary methodological guide to extend theory are Danneels (2002; 2003), who further refers to studies by Bartlett and Ghoshal (1993), Hargadon and Sutton (1997), Weick and Roberts (1993), and Rafaeli and Sutton (1991:757). These studies base their insights on an iterative process of traveling back and forth between pertinent literature, data, and emerging theory (Danneels, 2002; 2003). Since the aim is not to build an entirely new theory, but rather to converge and further develop present bodies of work, the qualitative approach of grounded

theory (GT) (Glaser & Strauss, 1967) is precluded.<sup>19</sup> GT is more likely to contribute to the already fragmented and dispersed body of literature by adding new concepts and new terms to describe the phenomenon (Danneels, 2003). Another alternative, an ethnographic approach (e.g. Fetterman, 1989), is refused for the same reason as GT, but also because of the difficulty of observing CD per se. Instead, based on the aim of the study, it seems fruitful to investigate how competence development takes place in PSFs by using a case-study design.

Case-studies (Lundberg, 1941; Morgan & Smircich, 1980; Eisenhardt, 1989; Ragin & Becker, 1992; Cunningham, 1997; Yin, 1994) are commonly used within various academic fields such as e.g. anthropology, psychology, sociology, political science, and business administration. However, no single general definition of a case is established, neither is there consensus as to how to proceed in order to conduct case-studies, nor how to draw inferences from them or present the results (Andersen, 1997). The case as a concept is derived from the Latin word “casus”, which draws attention to the importance of a single instance (Andersen, 1997). However, even this commonly held opinion that case-studies relate to investigations where N equals one or a few is disputed. For example, Le Play based his studies of 18<sup>th</sup> century industrial communities on more than 300 cases (Andersen, 1997). To illustrate the diversity, case-studies have involved both quantitative and qualitative research (e.g. Mintzberg & McHugh, 1985; Eisenhardt & Bourgeois, 1988), single case-studies (e.g. Whyte, 1943; Gouldner, 1954) and multiple cases (e.g. Chandler, 1962; Lawrence & Lorsch, 1967), one single investigator (e.g. Gersick, 1988) and multiple investigators (e.g. Pettigrew, 1990), as well as several levels of analysis (e.g. Mintzberg & Waters, 1982; Pettigrew, 1990). Case-studies are used to provide descriptions (e.g. Kidder, 1982), test theory (e.g. Pinfield, 1986), generate theory (e.g. Harris & Sutton, 1986), and extend theory (Danneels, 2003). Case-studies typically combine data from different sources such as interviews, questionnaires, archives, and observations.

Nevertheless, a frequently endorsed reference in business and management studies is the work of Yin (1994). Yin (1994:13) defines a case-study as “*an empirical inquiry that investigates a contemporary phenomenon within its*

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<sup>19</sup> The developers of GT (Glaser & Strauss, 1967) later took opposing stands regarding the use of existing theory (Locke, 1996). Glaser advocated a strict grounded theory approach, urging the researcher to start with a blank slate, devoid of theoretical preconceptions. Strauss, on the other hand, suggested a more moderate approach, in which prior theory and concepts play a guiding and sensitizing role (e.g. Strauss, 1987; Strauss & Corbin, 1998).

*real-life context, especially when the boundaries between phenomena and context are not clearly evident*". In particular, case-studies seem appropriate when an exploratory question is being asked about a contemporary set of events over which the researcher has little or no control (Yin, 1994:9). This seems to apply well to the circumstances of this research. Furthermore, case-studies are useful in the early stages of research on a topic when not much is known about it, and when current perspectives seem inadequate because they have little empirical substantiation (Eisenhardt, 1989). Due to scant PSF and RBV theory existing on CD processes, a broadly posed approach, as opposed to a highly specified and well-structured one, is suggested. The broad problem approach combined with the emphasis on CD at work do not support experiment as a suitable research method (Judd, Smith & Kidder, 1991). In such a setting, a qualitative case-study design is chosen because it allows for a detailed in-depth investigation of complex issues, as well as analysis of multiple types of data (Yin, 1994). This is seen as essential in a study focusing on an elusive and ambiguous concept such as CD. In contrast, quantitative studies are more appropriate for studying well-structured problems based on well-developed theory (Yin, 1994).

More specifically, according to Yin (1994), there are three fundamental approaches to the qualitative case-study design. These include an exploratory, a descriptive, and an explanatory approach, as discussed below.

#### *Exploratory, descriptive, and explanatory case-studies*

In general, the exploratory approach is used when investigating unknown or under-developed areas in order to identify and understand phenomena and relationships. Descriptive studies often aim at tracing and documenting events over time and the context in which the events take place. The explanatory approach attempts to identify and explain causal links over time in a real-life context, and may be appropriate when these are too complex for surveys or experimental strategies or when the researcher wants to understand in-depth "why" or "how" the phenomenon took place. This study emphasizes the first mentioned approach. This is due to the exploratory research question, as well as scant existing research on the topic. This study does not aim at generating hypotheses or propositions, nor does it view qualitative, exploratory case-studies only as pre-studies for later quantitative studies (see Yin, 1981:97). In line with several authors (e.g. Becker, 1992; Ragin, 1992; Stake, 1995; Andersen, 1997), qualitative case-studies can provide important contributions in their own right. In this respect, a comparative case-study approach can be valuable, particularly related to an exploratory study because of the increased opportunities that lie in multiple comparisons across cases (Yin, 1994). Hence, comparative case-studies represent an important part of the research design.

### *Comparative case-studies*

The principal research elements in conducting case-studies are the same for single and multiple case-studies: “... *no broad distinction is made between the so-called classic (that is, single-) case study and multiple-case studies. The choice is considered one of research design, with both being included under the case study strategy*” (Yin, 1994:45). The choice of using multiple cases is based on the notion that several cases increase the foundation for comparison. Hence, comparisons of several organizations may provide more comprehensive insight into the complexity and variety of CD processes than would comparisons within a single firm. As a result, this supports the overall robustness of the study. This raises the question of how many cases should be included in a comparative study? According to Andersen (1997), a sufficient number of cases has to be evaluated in terms of the research question and with regard to existing knowledge. Precision in terms of validity can be linked to the number of cases, which is an important aspect of Yin’s (1994) argument for a gradual extension of cases. Does a new case involve new dimensions, or does it necessitate tightening-up? Hence, case-firms are often approached sequentially, so that insights from the first firm can enhance the choice and understanding of the following (Yin, 1994). This approach is applied to the selection of case-firms in this study, as further explained in chapter 3.2.1. The choice of conducting comparative case-studies is in light of the time frames of this particular study regarded as not compatible with a longitudinal design.

As a result, in this study, an exploratory and comparative case-study approach is chosen based on various sources of data, conducted by a single researcher in order to try to extend theory.

Next, the criteria for case selection and the research setting are presented.

### **3.2. Case selection and research setting**

In PSF research, various types of industries have served as empirical settings. Examples include e.g. accounting (Brown, Cooper, Greenwood & Hinings, 1996; Morris & Empson, 1998), advertising (Rosen, 1985; 1988; Alvesson & Köping, 1993; Alvesson, 1994), engineering design (Løwendahl, 1992), IT-consulting (Alvesson, 1989; 1995), law firms (Starbuck, 1992; Cooper, Hinings, Greenwood & Brown, 1996), and management consulting (Løwendahl, 1992; Maister, 1993; Hansen et al., 1999; Sarvary, 1999). A random selection of cases is neither necessary nor preferable (Eisenhardt, 1989). Yin (1994) suggests a “maximizing” differences approach or a “minimizing” differences approach to case selection. Based on these guidelines, two communication consulting firms



and two engineering design firms were chosen. The criteria for choosing PSF industries, companies, and informants are discussed in the following sections.

### **3.2.1. Industries and firms**

Following an exploratory approach (Yin, 1994), the selection of PSF industries is based on insights from Løwendahl's (1992) study of multiple PSFs, as well as information provided through a pilot study (see chapter 3.3.1.). Following a maximizing differences approach (Yin, 1994), PSF industries that seem most different regarding (i) degree of established industry, and (ii) connection to professional organizations were selected. Based on theoretical sampling (Andersen, 1997), the idea is that differences between comparison groups increase the probability of collecting different and varied data bearing on a theme, while still finding strategic similarities among the groups (Glaser & Strauss, 1967:56).

#### *Communication consulting industry*

Communication consulting is a rather new industry with many small firms and no established educational standards. As in management consulting, consultants are recruited from a variety of backgrounds, and there is no professional organization where individual consultants are certified and become members. In terms of Maister's (1993) three categories, communication consulting firms are primarily hired for their experience and their competence of how to handle communication projects (a kind of "non-scientific" type of expertise). PR-advisory firms are also hired for their networks of connections to the media, whereas firms that focus on internal communication strategies need to document a good track record with successful clients and the right combination of experience and expertise in-house. According to Løwendahl's (1997) categories of PSFs, the output of professionals' work is highly intangible and customized. The degree of innovation involved may vary from project to project. Their projects involve a high degree of interaction with client representatives, and clients may very often be equally qualified for doing the job, or interested in learning fast, in order to reduce their dependence on the PSF. Inputs are experienced and well-connected professionals who communicate with clients as well as other contacts. A scientific knowledge base is less important.

#### *Engineering design industry*

Engineering design, on the other hand, is an old and well-established consulting industry with highly recognized science based education programs as well as professional organizations. People in many engineering design firms collaborate extensively with universities and research centers in their areas of expertise, and individual professionals may have close connections to peers in other firms through membership in the relevant

professional organization(s). Firm size varies from a handful of experts to several hundred, and competition for large projects can be highly international. In terms of Maister's (1993) categories of service delivery, a large engineering design firm may include experienced senior professionals as well as systems and routines to efficiently develop advice and reports.

As regards Løwendahl's (1992; 1997) research on PSFs, engineering design firms deliver a wide range of services, ranging from relatively simple reapplications of existing knowledge to research based innovations. The degree of customization also varies from one specialty to another. The degree of interaction with the clients can differ from a few meetings at the start-up of the project to frequent interaction, such as in large building projects. Clients also vary substantially in terms of their own level of professional expertise, from novices to clients who are experts themselves. Assignments range from small projects involving a single professional for less than a day, to huge national or international projects involving multiple engineering firms and hundreds of professionals for several years. Inputs are primarily engineering expertise in terms of highly skilled professionals supported by computer technology and well-established project management routines. However, the firms are fundamentally dependent on the reputations of individual professionals as well as the reputation of the firm.

Figure 7 illustrates how the chosen industries are “most different” on the two dimensions of professional affiliation and degree of established industry.

		Membership in profession	
		Yes	No
Degree of established industry	Hi	ENGINEERING	
	Low		COMMUNICATION

Figure 7. Industry differences

### *The firms*

The selection of firms is based on a maximizing *and* a minimizing differences approach (Yin, 1994). The latter aims at reducing differences (most similar cases), because this increases the possibility to establish a set of conditions under which a phenomenon exists, either to a particular degree or as a type (Glaser & Strauss, 1967:55-56). Firm differences are reduced on the criterion that each firm is characterized as a PSF according to Løwendahl (1997), and operating in Norway. Firm size, in terms of large and small firms is by Starbuck (1992) identified as influencing CD. Hence, a maximizing differences approach is pursued regarding firm size and number of employees, as CD may differ within firms depending on their size characterized as large or small. The firms chosen are similar in terms of size *within* the industries, but substantially different *across* industries in terms of number of employees. Large diversity with regard to firm size within industries might give even more variation. On the other hand, increased similarity in firm size within an industry facilitates comparisons of data across same-industry firms. Based on these notions, the following firms were chosen.

The first firm, CREO, is a small communication consulting firm focusing on internal communication. CREO was further chosen because people there seem to pay careful attention to continuously develop new and unique solutions for – and with – the clients, and because the employees are extremely diverse in terms of educational background and expertise. Clients are gained based on the firm's good reputation as successful in their particular niche. In order to maximize contrasts, the second firm, TEKNA, is one of Norway's largest in the engineering design industry. The company is recognized, also by competitors, as one of the best in terms of professional competence and experience. The work force consists of highly experienced seniors as well as newly educated top degree candidates. TEKNA is well connected to academic communities and the professional organization for consulting engineers. When the CEO of CREO agreed to participate in the study, confidentiality was an issue. An agreement was reached whereby the first firm would participate in the choice of the other firm within the same industry. Success and sufficient difference in terms of strategy and competence were emphasized in order to avoid the risk of creative solutions leaking to a competitor able to take advantage of them. The same opportunity was given to TEKNA. In contrast, success and similarity were highlighted: "... *maybe we can learn something from them,*" the manager suggested. Hence, the third firm, ENGY, was selected based on its large size and because of its investments in IT to facilitate CD. The choice is also based on the firm's reputation among competitor firms for being at the forefront in the industry in terms of CD. The fourth firm, INFO, focuses on external communication. The firm is small, however, larger than CREO in

terms of number of employees. INFO has grown quickly over the past few years, and is by newspapers and business magazines (e.g. Økonomisk Rapport, 8/2003) ranked among the leading firms in the Norwegian communication consulting industry.

The firms were chosen and approached sequentially, so that insights from the first firm could enhance the choice and understanding of the following (Yin, 1994). In this study, each firm serves a specific purpose within the overall scope of inquiry (Yin, 1994) and is chosen on the basis of prior knowledge. This is in accordance with what Glaser and Strauss (1967:50) call “*ongoing inclusion*”. The choice of research setting, thus, has both a planned and an emergent element. It is not uncommon for researchers to plan the number of firms in advance, which is partly what happened in this study. For example, the Warwick group planned their study of strategic change and competitiveness in British firms to include eight firms (Pettigrew, 1990). Following Eisenhardt (1989), in practice, such planning may be necessary due to the availability of resources and time constraints, which clearly are prominent issues when working on a doctoral dissertation. In this respect, four firms were found suitable and manageable within the framework of a doctoral study. The inclusion of one additional firm from each of the two industries is based on the notion of enhancing the comparative aspect as well as facilitating a balance in the number of firms and industries that seems manageable in this type of study.

### **3.2.2. Informants**

Informants were selected based on differences in terms of educational background/specialization, work experience, age, gender, tenure, seniority, and position with - as well as without - managerial responsibility. In addition, some informants of the large firms of TEKNA and ENGY were selected based on a key informant approach (John & Reve, 1982). Initially, this approach was used in quantitative studies (Campbell, 1955), but has lately been applied increasingly to ethnographic research (John & Reve, 1982). The key informants in this study occupy roles that presumably make them particularly knowledgeable about the topic under investigation. For example, one key informant of TEKNA has a very long history with the firm. In addition, the person has a central role in management as well as in terms of ownership. Another key informant has a particular responsibility for the development of human resources in the firm. In ENGY, one key informant is a member of a quality council called K3, whereas another has a particular role as functional coordinator. Both K3 and the group of functional coordinators have special tasks related to CD efforts in the firm. According to John and Reve (1982), the key informant approach has been criticized in terms of the extent to which key informants are able to provide reliable data on large organizations. In this study, however, this weakness is

reduced by combining the use of informants based on variety *and* key roles. In general, informants were also chosen with a view to a propensity to talk – as humorously pointed out by one ENGY manager: “*We tried to avoid the ones who are “silent as oysters”*”.<sup>20</sup>

Unfamiliarity with the firms, as well as the employees, made it difficult for the researcher to choose the informants. Therefore, access to informants went through the CEOs in the respective firms, with the exception of TEKNA, where the Vice President of Organisation and Personnel was the contact person. The assumption was that the managers, based on their knowledge of their employees, were much better suited to suggest key informants based on the criteria discussed previously. Another reason is that studies anchored with the top leaders are more likely to receive the support necessary from busy employees than studies anchored at lower levels in an organization.

In the engineering firms, the top managers notified the division managers who again notified the section managers, asking people (including themselves) to volunteer as interview informants. Division and section managers were notified during regular division and section meetings, whereas other potential informants were informed via e-mail. In the initial meeting with the CEO and the Vice President of ENGY Norway based in Oslo, the managers suggested interviews with people in some of the eight other offices spread around the country. They pointed out ENGY Tønsberg and ENGY Trondheim as interesting, because, as they put it: “*a lot of exciting activities are going on in those units*”. The Vice President notified the unit managers in Tønsberg and Trondheim, whereupon the unit managers e-mailed a list of potential candidates.

At the communication firms, people were informed about the study by the CEO at regular weekly meetings for all employees. Within two weeks after the initial meeting with the top managers, a list of potential interview candidates was provided by e-mail, whereupon each candidate was contacted and asked if (s)he was willing to be interviewed. Shortly after each phone call, informants were sent an e-mail confirming the date, time, and place settled on the phone. The e-mail included a one-page summary of the topic, design, and overall purpose of the study along with contact information. Of the people called, only two (both from TEKNA) turned down the request to participate in the study. Reasons given were heavy workloads and limited time. Table 7 provides an overview of the case-firms, and the number of informants from each firm.

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<sup>20</sup> Norwegian expression for people who don't talk much.

Table 7. Overview of the firms and informants

Industry	Firm	Number of informants	Managers	Non-managers	Women	Men	Total number of employees in the firm
Communication	CREO	11	1	10	9	2	11
Engineering	TEKNA	10	6	4	1	9	450 <sup>21</sup>
Engineering	ENGY Oslo	(18)	(8)	(10)	(5)	(13)	(450) <sup>22</sup>
	Trondheim	10	5	5	4	6	140
	Tønsberg	4	1	3	0	4	137
		4	2	2	1	3	35
Communication	INFO	12	1	11	4	8	19
In total	4	51	16	35	19	32	792

Of the four firms, only TEKNA and ENGY are divided into divisions. In TEKNA, the group of informants consists of people from six different sections within five different divisions in addition to the Vice President of Organization and Personnel. In ENGY Oslo, the group of informants is made up of people from six different divisions in addition to the CEO of ENGY Norway and the Vice President of ENGY Norway. The group of informants in ENGY Tønsberg comprises people from one division in addition to the office head. In ENGY Trondheim, the group of informants is composed of people from four divisions. For a detailed overview of the informants in each case-firm, see Appendix 2. Further, the informants selected for this study are individuals employed and working in each of the four case-firms. Thus, the study does not attempt to solicit the views of people external to the firm, such as clients, competitors, suppliers, partners, collaborators, former employees, etc. However, the role of some of these groups, particularly the clients, turned out to be important to the professionals' competence development. Hence, the discussion about these groups is based on the opinions of the PSF employees interviewed.

<sup>21</sup> In the head office, where this research was conducted, there are approximately 450 employees. In total including all units in Norway, TEKNA consists of approximately 800 employees.

<sup>22</sup> In total, including all units in Norway, ENGY comprises approximately 450 employees. The ENGY Group has close to 2000 employees.

Next, an overview of the research setting represented by each of the four PSFs is provided. The company descriptions serve as background information for analyzing the empirical data.

### 3.2.3. Case-firm backgrounds

#### *CREO*

Since its foundation in 1983, CREO has moved away from advertising and evolved into a company focusing on internal communication. At its web site, the firm is presented as follows: “*CREO transforms visions, values, and strategic plans into practical and clear communication. Our goal is that words, concepts, and plans should have practical consequences for co-workers as well as managers. Our task is to help organizations in change create organizational cultures that help them realize their desired reputation. In this work, we involve our own professionals as well as near and long-range networks – and clients*”. CREO gains clients based on its good reputation, and is regarded as highly successful in its particular niche area. Employee owned, with the CEO as the primary shareholder, the firm is divided into a consulting part of six consultants (including the CEO) and a studio part<sup>23</sup> of three designers.<sup>24</sup> Five consultants and one designer are partners. The premises consist of open plan offices. Designers and consultants are located at each side of the common kitchen and lunch area. The studio part looks “artistic” with posters covering large parts of the walls under the high ceilings. Newspapers, magazines, photos, and working materials disorderly cover the desks, and music from the radio often accompanies work. CREO deliberately employs experienced people with a background that is highly different from that of other colleagues.

#### *TEKNA*

TEKNA has grown through numerous mergers and acquisitions since it was initially established in 1928. The firm is fully owned by the employees, and had an operating profit of 3,3 million NOK in 2000.<sup>25</sup> In addition to the headquarters in Sandvika outside Oslo, TEKNA has many smaller offices in major cities around the country. The goal and value statement of TEKNA is

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<sup>23</sup> The studio part was later downsized considerably.

<sup>24</sup> In addition, one person takes care of the financial accounts, whereas another works with printing services. In the analysis, the emphasis is put on the consultants and the designers, because they are the ones involved in service delivery to clients.

<sup>25</sup> The annual plans for the years shortly before and during this study show the following economic results: Operating profit for the year 1998: 20,7 M NOK; 1999: 19,2 M NOK; Operating profit (loss) for the year 2001: minus 15,3 M NOK; 2002: 25,7 M NOK; 2003: 26,7 M NOK; 2004: 32,5 M NOK. The 2001 result is influenced by depreciations related to the firm’s international business as well as a poor market situation in general.

formulated as follows: “*Our goal is that TEKNA should be Norway’s most preferred company both among clients and employees in technical-economic consulting. We shall have a profitability that makes our shares attractive to own, and a growth necessary for a company in development*” (Goals and Values in TEKNA, 1999).<sup>26</sup> TEKNA is marketed as an independent, multi-discipline engineering and management consulting company,<sup>27</sup> and competes in most major areas of engineering. The firm has operated internationally since 1956, and has a long-standing reputation from foreign aid projects in developing, as well as newly industrialized, countries.<sup>28</sup> The firm’s operations correspond to the requirements, codes of ethics, and quality assurance policies of the International Federation of Consulting Engineers. TEKNA works closely with research institutions such as e.g. the technical university in Trondheim, and has relatively considerable R&D activities.

#### *ENGY*

ENGY Norway represents one of three geographic markets in the Nordic region. Each business area is made up of a number of regions or offices with several local branches controlling their own operations and developments.<sup>29</sup> The Oslo office is the largest, and the top managers and the central administration are localized here. ENGY has close ties both to its “parent firm” in Sweden and to its partner firm in Finland. The ENGY Group, with headquarters in Sweden and with roots back to 1947, changed its name to ENGY in 1977. The company has experienced major growth in terms of acquisitions and profits, and is listed on the Stockholm stock exchange. In 2000, its operating profit was 16,9 M NOK.<sup>30</sup> In publicity material, the company’s vision is stated as follows: “*Our vision is to be the leading Nordic consulting engineering company. We will realize this vision by offering greater client benefit based on a strong corporate culture and dedicated teamwork*” (ENGY bulletin).<sup>31</sup> Compared to TEKNA, ENGY is about half the size in terms of number of employees in Norway, more aggressive in terms of growth, and expanding more rapidly. However, whereas TEKNA operates worldwide, ENGY limits their international

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<sup>26</sup> Booklet distributed internally in TEKNA.

<sup>27</sup> This study is restricted to include engineering design, because the services of the management consulting division (MC) is very different from those of engineering. In addition, MC is very small compared to engineering which represents the core value creating activity of the firm.

<sup>28</sup> About 25 % of the income stems from international activities worldwide.

<sup>29</sup> The firm operates through local presence in nine cities. In total, there are 50 offices in Sweden, Norway, and Finland.

<sup>30</sup> Operating profit for ENGY Norway for the year 1999: 17,8 M NOK; 2001: 24,2 M NOK; 2002: 28,7 M NOK; 2003: 28,3 M NOK; 2004: 32,1 M NOK; 2005: 43,4 M NOK.

<sup>31</sup> This bulletin is distributed internally in ENGY Norway.



activities to the Nordic region. Like TEKNA, ENGY Norway offers consulting engineering services in most of the main engineering areas. Yet, ENGY's domain is considerably narrower than TEKNA's. For example, ENGY has deliberately omitted oil and gas as a priority area, and has in particular specialized in the construction of buildings where the firm offers complete, multi-disciplinary services.

#### *INFO*

INFO primarily provides advice for external communication. This includes setting strategic communication goals, monitoring relevant public attitudes, and expressing messages through the use of a selected range of media channels (INFO web site). Founded by the CEO, INFO has expanded relatively rapidly due to high market demand for its services. In its current form, the firm has existed for over ten years, and has grown organically from a handful of employees to 19 at the time of the study. INFO is owned by five partners, whereof the CEO has over 50 % of the shares. The agency is closely connected to the newly established national organization of public relations and communication consulting firms. The firm's vision is to be the PR agency in Norway which is the best to prove effect, i.e. the real impact of the communication actions undertaken. In contrast to TEKNA's upscale building, and the industry parks from which CREO and ENGY operate, INFO occupies a characteristic, old villa. Effort is put into creating a relaxing and home cozy environment. This also includes a garden furnished for luncheons and meetings. This way, INFO wants to state its difference from competitors through an informal style, less "yuppie" than the environment generally associated with the PR industry. The house further contains a special place called "the children's room". This creatively designed room appears stylish, yet snug, with a red sofa, and a yellow carpet portraying a funny duck on the front wall. In one corner stands a "brag shelf" with items representing various client assignments.

Next, after having addressed the research design and the research settings, a discussion of the data sources follows.

### **3.3. Data sources**

The empirical sources of this study include interviews and written materials. In addition, to some degree, observations are used in order for the researcher to further understand what people do at work and say in interviews. Interviews, however, represent the main approach to data collection. The interview guide builds on a pilot study. Below, the pilot study is presented, before turning to the empirical sources.

### **3.3.1. The pilot study**

The pilot study was designed to generate a variety of dimensions for the development of an interview guide for the main study. The pilot study is exploratory in nature, and based on qualitative, open-ended interviews which give room for the informants to provide a variety of elements and dimensions for further exploration. The interview guide for the pilot study was developed based on PSF literature reviews, particularly building on Løwendahl (1992; 1997) and Maister (1993). The informants consist of seven managers and partners in seven different PSFs, including small and large firms from management consulting, law, IT-consulting, advertising, and engineering design. The choice to limit interviews to managers and partners is in accordance with common firm level approaches to strategic management. In addition, the choice of interviewees is also based on the notion that experienced people with lengthy service in the industry are likely to have a comprehensive understanding of work activities. The pilot interviews lasted 1½ - 2 hours and were conducted jointly by advisor Professor Bente Løwendahl and the author during fall/winter 1998 and spring 1999. Joint interviews increase reliability by allowing for discussion and comparison of data after each interview (Patton, 1990). The pilot study confirmed that the questions asked were relevant to the informants and their work. Analyses of the pilot study identified questions important to CD, which were then themed and sorted, thereby establishing an interview guide for the first case of the main study (see Appendix 1). The empirical sources of the main study are further discussed below.

### **3.3.2. Interviews, written materials, and observations in the main study**

In this section, the data collection process and the use of the different data sources are clarified, starting out with interviews, followed by written materials and observations.

#### *Interviews*

Interviews were conducted based on an interview guide developed from the pilot study discussed above. According to Patton (1990:280-281), there are two broad types of interviews: A general interview guide approach and an informal conversational interview. The first approach outlines a set of issues that are to be explored with each informant before interviewing begins. The issues in the outline need not be taken in any particular order and the actual wording of questions to elicit responses about those issues is not determined in advance. The interview guide simply serves as a basic checklist during the interview to make sure that all relevant topics are covered. In this respect, both the wording and the sequence of questions are adapted to each specific informant in the context of the actual interview. The informal conversational interview is more open-ended and flexible. Information can be pursued in

whatever direction that seems appropriate, depending on what emerges from the talk, or is observed, in a particular setting.

In order to let primary data enlighten the research question, semi-structured interviews of the first type were chosen at the outset of the study. Such interviews carry the advantages of both structured (generally easier to analyze and compare) and unstructured approaches (allowing interviewees to explain their responses and to provide more in-depth information where necessary). As the research process progressed, initial questions were compared to responses from informants interviewed at later stages, resulting in some questions being refined, others downplayed, as well as new questions added. Therefore, the interview guide evolved during the process of interviewing, from semi-structured to more open, as themes and dimensions in the data grew clearer. The informal conversational approach was particularly dominant in the last two firms, due to an evolving understanding of the data combined with growing research experience. A more informal approach also allowed for the further exploration of themes that emerged in earlier interviews. As the interview process progressed, questions became more focused and detailed as themes became more distinct and manifest. However, each interview situation was unique, not only because of the uniqueness of each individual, but also because the interview questions developed over time. Each interview built successively on the former statements provided, expanding, balancing, refining, supporting, and rejecting aspects of information picked up previously in a two-way interaction. The aim is to seek elucidation and elaboration from various participants (Patton, 1990), to reveal many-faceted themes and dimensions of CD processes in PSFs.

Interviews consisted of face-to-face conversations with a single informant. In general, each person was interviewed once, however a few were interviewed twice in order to elaborate on the first interview. In the interview situation, the term conversation was preferred to the term interview, in order to create a more informal atmosphere. The talk both before as well as after the interview is also important in order to establish a relationship of trust, and gain honest responses. The interview typically began with a brief outline of the research project, enabling informants to focus on the topic of the study. Typically, interviews lasted between 60-90 minutes. The interview started on a general level, aiming at providing background information as well as a context for the main focus of the study. Gradually, the conversation became more detailed and specific, focusing on CD experiences, and activities, tasks, and processes important to CD. Responses were followed up by asking for further details (e.g. can you elaborate on that? what do you mean by that?). This approach invites the informant to shape the conversation, allowing the view of each informant to come forward, and

enabling the researcher to grasp commonality, variety, and individuality. Leading questions were sought avoided. For instance, regarding courses, instead of asking “was the course useful?”, the question was phrased “what do you think about the course?” and then, depending on the response, appropriate follow up questions were formulated.

In addition, the initial conversations with the top managers were also important. Even though the purpose of these interviews was to determine whether the firm in question represented a prospective case, and whether the top managers were willing to participate in the study, the interviews also provided valuable information in terms of more overall perspectives concerning issues such as firm organization, investments in CD, strategic position, and future challenges.<sup>32</sup> Beyond the regular interviews, other informal conversations frequently occurred. For example, the CEO in CREO spent time with the author explaining the firm’s activities, as their niche services can be difficult to understand for an external person. Further, if the interview ended around lunch hours, informants of all four firms often invited the author to join them for lunch. These occasions provided yet another angle for informal conversations with the informants.

In CREO, interviews were conducted in the meeting rooms at each end of the open plan facilities. Both rooms were equipped with glass doors, which were closed during the interviews. The interviews in TEKNA primarily took place at the informant’s office. A few times a meeting room was used. At ENGY, interviews primarily took place at meeting rooms located at the center of the office corridors at each floor. At INFO, most of the interviews were conducted in the “children’s room”, which was the room least subject to interruptions. A few interviews took place in the combined eating and meeting room, where colleagues sometimes passed by during the conversation. In addition, some interviews were conducted outdoors in the garden with birds chirping in the background. The interview process carried out in each firm was characterized by intensive periods of tightly scheduled interviews. Overall, interviews took place over the span of approximately 1.5 years, in iteration with data analysis and literature study. Table 8 provides an overview of the time spent in each case-firm.

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<sup>32</sup> Due to the different purpose and setting of these conversations, they are not regarded as regular interviews, and the “informants” are not included in Appendix 2. The initial interviews were conducted jointly by the author and her advisor.

Table 8. Overview of the time span of the interview process

Case-firm	Time span
CREO	January-March 2000
TEKNA	April-May 2000
ENGY	January-February 2001
Oslo	January 2001
Trondheim	January/February 2001
Tønsberg	February 2001
INFO	May 2001

*From speech to transcript*

In order to strengthen validity and treat the quotes fairly, a tape recorder was used during the interviews. At the beginning of the conversation, all informants consented to the use of the recorder without hesitation. The recordings made it easier to focus on the topic and the dynamics of the interview (Kvale, 1996), including interpreting responses in order to ask follow up questions, rather than being occupied with writing down answers. However, short notes were written on a notepad during the interviews. The question of if and, possibly, how a recorder may influence responses, is of relevance. In this study, the advantages in terms of securing accurate descriptions are viewed as larger than the possible biases. This is supported by data procured from interviews conducted without using the recorder, i.e. initial interviews with the managers, one follow-up interview with the same individual, and all the interviews in the pilot study. In terms of content, character, etc., the unrecorded interviews do not seem to be different from the recorded ones. In terms of rich descriptions, details, and continuity, however, the interview text of the unrecorded interviews cannot in any respect compete with the transcripts of the recorded ones.

Following Eisenhardt (1989), each interview was transcribed as soon as possible after completion, so that the conversation and the setting were fresh in mind. In the process of transposing an oral interview into a written transcript, the presentation naturally becomes somewhat more formal. However, emphasis was put on preserving the spoken form. Therefore, the interview transcripts are mainly recorded verbatim, because this is regarded crucial in terms of preserving “raw” data as the point of departure for further analysis (Patton, 1990). Pauses, interruptions, laughter, the tone etc. are all indicated in the transcripts. Further, the interview transcripts were translated from Norwegian to English. Since this process can lead to possible alteration of meaning, interviews were not translated word by word. Rather, effort was put into communicating the speaker’s meaning. In this process, the content of particular quotes was compared to the rest of the interview, in order to

render the meaning of the quote as accurately as possible. Finally, the degree to which informants' viewpoints, thoughts, feelings, intentions, and experiences are accurately understood and portrayed by the researcher (Johnson 1997:285), is sought strengthened by returning the interview transcript back to each participant. This gave them the possibility to adjust, comment, and correct their statements in order to reduce possible slips and misinterpretations by the researcher. Some informants returned the transcripts with comments. These mainly concerned language and grammar, rarely meaning or intentions, and did not change the overall content of the interview.

Other matters taken into consideration in this study, and which relate to interviews, are discussed below.

#### *Interview concerns*

As with all research methods, interviews are also open to a number of biases and issues to be considered. First, an interview may be portrayed as "*how do we pack the world into words?*" (Latour, 1999:24). Informants are not only representatives of the world, but part of the world they are describing. Formally arranged interviews take the informant out of a natural work setting and make demands on verbal abilities. A concern, then, is to what extent people are able to talk about, express, and communicate their opinions and experiences. This aspect in terms of a transformation process is perhaps reinforced when telling/talking about ambiguous terms such as competence, knowledge, and learning. Hence, there is reason to be cautious about distinctions and categorizations of such concepts because:

"Knowledge is a slippery and elusive concept, and every discipline has its own secret realization of it. Problems of interpretation haunt every attempt to use the concept effectively, such that even basic typologies that talk about, say, formal versus tacit knowledge (Polanyi, 1966) actually can be quite meaningless in certain contexts" (Scarborough & Burrell, 1996:178, referred to in Alvesson, 2001:865).

On the other hand, interviews, as opposed to other approaches such as e.g. observations, provide time to reflect on specific questions asked. This seemed to be appreciated by the informants, and some made statements like, "*I haven't thought of that in such an analytical way before*", indicating that the interview provided an opportunity to reflect upon work activities in another way than in daily operations. Further, senior people with a lot of experience provided richer descriptions, and were also better at describing issues from several perspectives compared to younger, less experienced people. Similarly, highly educated people seemed better at explaining and evaluating their work and communicating their views, compared to people

with fewer years of formal education. This draws attention to how interviews reflect an informants' eloquence, and that oral skills can be mistaken for a high level of e.g. task related competence.

Yet, the self-report approach used in this study also raises concerns about the information provided. According to Argyris (1991), people have a tendency to consistently act inconsistently, more or less aware of the contradiction between the way they think they act, or would like to appear (their espoused theory of action), and the way they really act (their theory-in-use). In addition, interviews largely depend on what information the informant is willing to share, as well as is able to call to mind in the interview setting. Whether or not information is kept deliberately concealed during interviews is therefore difficult to ascertain. However, comments like, e.g. "*There are few secrets in this business*", "*We collaborate with competitors as well as colleagues*", "*Our functional community is very transparent and easy to get to know*", indicate that this is not a major threat to credibility.

Further, the aspect of confidentiality also raises important questions in terms of what kind of information comes out of the interview. Informants may be uneasy related to what they see as sensitive matters, particularly if they know/think/fear that managers or other colleagues in the firm can gain access to personal opinions provided in the interview. Therefore, at the beginning of each interview the informant was assured of confidentiality, and that single quotes could not be traced back to the informant, unless he or she was first asked for permission. Little indicates that the informants consciously steered away from potentially sensitive areas. Quite to the contrary, it seemed as if people enjoyed being asked about their work. A few informants even pointed out explicitly that they look upon themselves as appreciative interview subjects. One of them explained: "*Who wouldn't be interested in talking about themselves and their work?*" However, a couple of times, informants commented in a humorous way "*this won't go straight to my boss, right?*" Yet, notwithstanding these aspects, open-ended interviews are seen as a fruitful way of investigating complex processes such as CD.

Another useful data source employed in this study is written material.

#### *Written materials*

Secondary data were used to get an impression of each firm, including services offered, people involved, and markets for operation. The firms' web sites and annual reports (the latter existent for TEKNA and ENGY only) provided key information about each firm at an early stage. In addition, company bulletins provided information about internal organizational affairs. In particular, a lot of bulletins were created in TEKNA. Examples

are: “news”, “nois”, and “MEGAsus”. ENGY distributed “News from ENGY”, which primarily seemed to cater to clients and other external interest groups. Further, industry descriptions gave important information about the wider context of each firm, such as the competitive environment. In addition, written materials facilitated a collection of more factual and quantitative information such as economic reports, statistics, and information about mergers and acquisitions (relevant for TEKNA and ENGY only) in terms of when, where, and which firms were involved. Written materials were also used as indications of the firms’ emphasis on human resources and CD. However, such documents provided limited information about the actual work activities and processes behind these statements. Hence, information found in written materials often generated questions later elaborated in interviews.

The informants frequently recalled additional written materials related to what they were talking about during the interviews. As a result, they presented and explained written material during the interviews. This included organization charts (TEKNA and ENGY only), client lists, materials from courses they had attended, materials presenting firm history, products, strategy plans, tenders, project handbooks, bulletins, and even texts of speeches held on special occasions. The author was given some of this material for further analysis. Some engineers demonstrated how they use CAD software in their work, what the program is able to do for them as well as its limitations. Further, the author was given access to the firms’ intranets. Compared to the web pages, the intranets give useful information about employees and organizations from the “inside”. The resources spent on such electronic channels also indicate a firm’s emphasis and reliance on them.

In addition, observations in real work practice are used as a supplement to further understand work practices and what people say in interviews. Observations are not systematically carried out throughout the entire study. Primarily, they serve as a backdrop to enhance the researcher’s understanding of the activities that the informants’ actually do at work. Hence, observations are not specifically highlighted in the presentation of the empirical analyses.

#### *Observations*

During interviews in the first case-firm, it became clear that informants experience CD to mainly take place in informal interactions in project work for clients. This sparked a need to look more closely at real work projects, in order to better understand what the informants actually do at work. Observations of work situations reveal other types of information compared to interviews and written materials. In addition, they provide other angles to sense and grasp the atmosphere and the environment surrounding individuals



in real work practice. Observations were made by the author while present at internal meetings (e.g. regular meetings in the firm and in divisions), and by “shadowing” people from different functional areas as they conducted their work. Different phases of project work activities were observed, which is important in order to capture both parts of the project as well as relationships within the project as a whole. Important observations were also made at meetings with clients. This also included a visit to a construction site, observing meetings and work practices of several actors such as owners, engineering consultants, and entrepreneurs.

Further, the trip to and from external client meetings was useful in order to get a briefing before the meeting as well as an opportunity to discuss the meeting in retrospect - sharing and comparing interpretations with the consultant. This also provides opportunities to go further in-depth on issues of interest in terms of detailed follow up questions in interviewing. When observing people on a project team as they work, be it internally or together with clients, conversations and discussions provide aspects of how information is communicated and shared among people in order to make decisions and develop solutions. In addition, special arrangements such as seminars for invited guests, as well as everyday lunches and informal conversations provided valuable information. The latter included discussions and anecdotes about clients and projects, which provided glimpses into the employees’ everyday lives, including their successes and failures, both professionally and outside of the work arena. These elements help build a more holistic “picture” and a background context for interpreting both observations and interviews.

The purpose of observational data is to describe the setting observed, the activities that took place, and the people who participated, i.e. what went on (Patton, 1990:202). Thus, during observations and shortly afterwards, as much as possible of what went on was written down. Because it could not be precisely determined at that point what might be relevant at later stages of the process. The handwritten notes were transferred to an “observation template” (Robson, 1993; Jess Hansen, 2001) as shown in table 9, which helped to structure the observations.

Table 9. Themes in observation<sup>33</sup>

1. <b>Actors</b>	names and relevant details of the individuals involved
2. <b>Space</b>	layout of physical setting (rooms, outdoor spaces, etc.)
3. <b>Activities</b>	of the individuals
4. <b>Objects</b>	physical elements, furniture, etc.
5. <b>Acts</b>	specific individual actions
6. <b>Events</b>	emerging during the observation unit
7. <b>Time</b>	the sequence of events
8. <b>Goals</b>	what the individuals are attempting to accomplish
9. <b>Feelings</b>	emotions in particular contexts

According to Patton (1990:216), the breadth of observations is determined by time and “*limits in the human ability to grasp the complex nature of social reality*”. In addition, the degree of credible observational data is influenced by the degree to which the people observed are informed of the purpose of the research. According to Hellevik (1971) the hazard of the observer’s effect increases according to the degree of openness. Blichfeldt (1973), however, argues that people being observed tend to “forget” or “ignore” the observer after a while. This seemed to be the case in this study. For example, at a client meeting everybody was served beverages, except the author. This turned out not to be a deliberate action. The presence of the researcher sitting in the corner of the room was entirely forgotten.

Next, the process of data analysis is addressed. This includes the relationship between inductive and deductive approaches, how the different sources of data relate to the analysis, and the procedures used for the within-case and cross-case analyses.

### 3.4. Data analysis

In order to investigate the research questions, it is argued that a fruitful approach is to interview professionals, managers and employees (including key informants), about competence development in the company they work. From analyzing this material, the CD processes of the firms are outlined.

Although theoretically deduced frameworks are used to structure the empirical presentation, the analysis is also very much an inductive process. The theoretical background is not “forced” on the data. Rather, the analysis is kept open to what the data is “saying”. In line with the exploratory design, the inductive analysis takes place in the context of discovery, as iteration

<sup>33</sup> Inspired by Robson (1993:200) and Jess Hansen (2001).

between “process theory and process data to produce process knowledge” (Orton, 1997). In most case-studies, data collection is closely connected to data analysis. This is particularly so in a sequential study like this one, which probes and compares statements about CD, building on input from previous to current, to future informants. The process of analysis can therefore be seen as iterating between data sources and data analysis. This allows for a flexible and continuous sharpening of the research focus (Eisenhardt, 1989). Such an approach permits a comparison of data and analysis which emphasizes both the development of concepts and an incremental approach to case selection and data construction. A challenge and a paradox of qualitative analysis, thus, is that it moves constantly back and forth between descriptions and the interpretation of description, between the complexity of reality and the simplification of complexity (Patton, 1990). Hence, the analysis in this study alternates between deductive and inductive modes of theorizing, as well as between data collection and analysis.

The analysis also includes different sources of data. How do these relate to the analysis? Interviews constitute by far the primary data source. This material was important throughout the whole analysis. However, relative to the two routes to CD, and relative to the other data sources, interview data was particularly crucial to the analysis of CD in daily operations. The written materials in terms of document- and text analyses provide background information about each of the firms, including their industrial environment, economic figures, images, etc. Based on a content analysis of written material (Silverman, 2001) the analysis identifies themes seen as important to the investigation. This also includes how, by whom, and to whom material is presented, as well as what the data signal in terms of intent, emphasis, and action. In particular, written material was important to the presentation of the company backgrounds, in terms of analyzing investments in CD, and with regard to CD policies. Analysis of interview data pointed out the need for observations in real work practice. Observations were used to facilitate a deeper understanding of the work and concerns of the participants and their clients in order to better inform the researcher’s basis from which to make analyses, particularly of interview material. Contributions from observations are not especially highlighted in the presentation. Rather, they primarily serve as a backdrop to enhance the researcher’s understanding of the informants’ work.

In order to strengthen the credibility of the interview analysis, interviews are compared with observations and written materials. One kind of data is used to illuminate another. In this way, secondary data and observations are used to corroborate and augment findings from interviews - and vice versa. This is based on the premise that each approach reveals different aspects of empirical “reality” (Denzin, 1970; Patton, 1990). Combining multiple cases

and different empirical materials in a single study, thus, is seen to add rigor, breadth, and depth to the investigation. However, even if interpretations are consistent, there is no guarantee that the inferences are trustworthy, but the threat of invalidity is reduced (Patton, 1990). In line with the design of the study, the analyses of these data sources are further guided by Yin's (1994) recommendations for within-case and cross-case analysis.

#### **3.4.1. Within-case and cross-case analyses**

The research questions guide the within-case and cross-case analyses. The case-study method is first used as a guide to data analysis in a within firm setting. Thereafter, it is used to guide the cross-case comparisons. This allows the unique patterns of each case to emerge before comparing patterns across companies. The sequential within-case and cross-case analyses are guided by recommendations made by several authors (e.g. Mintzberg & McHugh, 1985; Burgelman & Sayles, 1986; Pettigrew, 1990), who argue that given the almost overwhelming volume of data in qualitative research, the sorting of the data is critical in order to deal with it in a meaningful way. A crucial point in both analyses is to look for similarities and differences (Yin, 1994).

The purpose of the within-case analysis is to facilitate a deep understanding of each case-firm in order to illustrate the unique characteristics of each company (Gersick, 1988). At first, the within-case analysis is relatively open and unstructured. The aim is to acquire a general grasp of what kind of processes and activities go on in the firm. What efforts are made/not made to enhance CD, what characterizes the people and the type of work being done in the firm, what characterizes the organizational work environment, and how do these aspects influence CD? Each transcript is read several times, trying to grasp the view of the individual informant. The interview data is analyzed for each single individual and compared between individuals - in iteration. Notes and marks are made in the text. Symbols indicate similarities and differences. And a color system relates various issues. The main focus is not on the particular statements in themselves, which is a common form of content analysis. Rather, the primary focus is on the particular statement in relation to the content of the surrounding statements and the transcript as a whole. Viewpoints are themed and grouped, looking for patterns of similarities and contrasts, as well as uniqueness, rarity, and disruption, as suggested by Patton (1990).

As the analysis proceeds, it reaches a more structured level. Concepts are developed and used to organize and group data representing similarities and differences. An example is 'Arenas for CD'. This concept is developed to identify possible situations, activities, or circumstances in which CD takes place. Thereafter, concepts which indicate more firmly certain patterns and

directions to pursue are developed. Examples are: learning in 'intra-firm relations', 'client relations', and 'network relations'. Learning in intra-firm and client relations show clear patterns in terms of recurrent elements and dimensions, whereas certain dimensions in network relations only occurred a few times in the data. Sub-themes are further related to the main themes. As tendencies grow clearer, it becomes easier to group illustrative quotes. However, the same quote can often be used to illustrate different aspects. This indicates that parts are often integrated in the totality through many relationships. In addition, the theoretical lens influences the data analysis in the way that different theoretical scopes allow for viewing the data in different ways, emphasizing different aspects as well as looking for other things than before. Similarly, data analysis influences literature readings as findings are compared to theory. Thus, a continuous iteration between theory and data took place.

Based on the analyses of interviews, written materials, and to some extent observations, patterns of how CD takes place in each of four PSFs, were identified. After the within-case analyses, comparisons were further made between the companies based on a cross-case analysis. The logic is very similar to that of the within-case analysis. In light of the research questions, the findings from the within-case analyses were analyzed across the four PSFs, addressing similarities and differences. This led to a sharpening of the findings, as patterns of similarities and differences grew stronger or became weakened. This way, the comparisons could consider the relative strength of the patterns identified. The cross-case analysis involves comparisons within and between the communication consulting and engineering design industries where this appears relevant.

In the process of the cross-case analyses, the relationship between CD process and generic strategy emerged as highly important. As shown earlier, other criteria for case selection than generic strategy formed the basis for selection at the outset of the study. Since the presentation of the empirical findings seeks to present both the process and its results, the generic strategy is addressed already at the beginning of the presentation of each case firm, in relation to value creation. Therefore, because it can look as if the relationship between CD process and generic strategy was known from the beginning, it is important to point out that this was a central finding that emerged very late during the process of analyzing the empirical data.

Since the aim of this chapter is to describe the research process in order to enable others to evaluate the quality of this study, further criteria for evaluating qualitative research are discussed below.

### 3.5. Research quality

Research refers to a reflective process to seek, explore, provide, manage, and communicate knowledge about socially and naturally constructed phenomena in order to adjust, refine, and develop insights (Patton, 1990). In this respect, choice of design, method, and analysis need to be evaluated according to appropriateness in terms of the research question and the overall aim of the study. Qualitative research, however, lacks a generally accepted convention for how to go about doing this (Patton, 1990; Yin, 1994). Therefore, this study strives to make accessible the grounds from which choices are made as well as the arguments for the actions undertaken. In comparison, quantitative research, which typically emphasizes causal determination, prediction, and generalization, follows more stringent methodological techniques and procedures (Patton, 1990). Methodologically, however, the overall aim for all types of research is to ensure research validity and reliability. Building on Gummesson (1991), with reference to Shipman (1982), a distinct feature of research is that the methods and procedures used are made public. This enables the consumers of the research to find answers to four key questions: 1. If the investigation had been carried out by someone other than the author, would the same results have been obtained? This concerns the issue of replication usually referred to as *reliability*. 2. Does the evidence really reflect the reality under examination? This concerns the *validity* of the study. 3. What relevance do the results have beyond the actual research? This concerns the degree to which the results can be *generalized*. 4. Is there sufficient detail in the way the evidence was produced for the credibility of the research to be assessed? If we follow the researcher's journey - from questions to methods of data gathering, analysis, and answers - is the research produced trustworthy? This concerns the *credibility* of the study. As with all methodologies, case-studies carry both strengths and weaknesses. In light of the criteria suggested by Gummesson (1991), the following section addresses how reliability, validity, generalizability, and credibility are treated and sought strengthened in this particular study.

*Reliability.* Traditionally, reliability means that another investigator conducting the same study all over again should arrive at the same results as the first investigator. However, the impact of the researcher is prominent in qualitative case-study research because "*the researcher is the instrument*" (Patton, 1990:14 emphasis in original). The researcher is actively involved in a process, where she interprets the reality in which she simultaneously participates, as well as becomes a product of (Patton, 1990). In order to enhance reliability, the researcher sought to be consciously aware of these issues. Further, since people and relations change, knowledge about human competence, organizations, and society is to be regarded as relative. In

addition, the interaction between researcher, informants, and data yield changes for all parties involved. This implies that the strength of the analysis depends heavily on the credibility, competence, and rigor of the researcher as *“changes resulting from fatigue, shifts in knowledge, and cooptation, as well as variations resulting from differences in training, skill, and experience among different “instruments”, easily occur”* (Guba & Lincoln, 1981:113, referred to in Patton, 1990:14). Therefore, it is unlikely that two independent researchers will arrive at *exactly* the same interpretations even if they had the same purpose, focused on the same issues, and used the same method. The point in this study, is to enhance reliability by laying the research open for potential scrutiny, replication, and “testability”, as suggested by Eisenhardt (1989). This is done through several efforts including: a clearly stated awareness of the research process, a detailed description and discussion of how the design, setting, data sources, and analysis are considered and conducted in this study, making the interview guide publicly available, avoiding asking leading questions in the interview situation, and by checking own impressions with both informants and other researchers in order to gradually express a greater degree of precision in terms of findings and contributions. In addition, the researcher always aspired to behave candid and honest throughout the entire research process.

At the same time as a deep involvement in the project is sought, a certain distance is also retained. In this respect, unfamiliarity with the research context can represent both a strength and a bias influencing the analysis. Alvesson (1999) compares the “burglar-researcher” (unfamiliar with research context) with the “run-away-researcher” (familiar with research context). The former tries to overcome access problems, whereas the latter *“struggles in order to create sufficient distance in order to get perspective on lived reality”* (Alvesson, 1999:9). One challenge for the insider relates to “culture blindness” which implies that people may become blind to what they experience everyday. Thus, everyday issues may remain unquestioned. Hammersley and Atkinson (1995) refer to Schutz (1964) when they argue that: *“... the stranger acquires a certain objectivity not normally available to culture members. The latter live inside the culture, and tend to see it as simply a reflection of ‘how the world is’. They are often not conscious of the fundamental presuppositions that shape their vision, many of which are distinctive to their culture”* (Hammersley & Atkinson, 1995:8-9). In this study, initial unfamiliarity with the informants as well as the research context is regarded as both an advantage and a weakness. The advantage of approaching the field as a “stranger” is to enter the field with curiosity and an open mind that does not take things for granted. Further, being in a position to ask new or other types of questions is also considered positive. In order to ease some of the disadvantages, the stranger’s perspective is

downplayed by further enhancing the understanding of the informants and their work context by also including some observations into the study.

*Validity* concerns the way the study is carried out so that it reflects the phenomena of interest (Gummesson, 1991). The investigator must specify the subject to be studied, and establish corresponding indicators of it (Yin, 1994). In order to increase validity in this study, the main concepts and dimensions used to sort data were initially derived from theory. Further, the research question guided the data collection, and the iteration between data collection, data analysis, research questions, and theoretical reviews made appropriate indicators of concepts gradually grow clearer. In addition, the relationship between the concepts studied and the empirical data seen as indications of the concept was enhanced by relying on multiple people and multiple sources of data (interviews, documents, and to some extent observations), and by including multiple companies. Also, informants commented on and refined their statements from interview transcripts as well as draft analyses. Initial interviews, as well as the pilot study, were conducted jointly by two researchers. Subsequent discussions between researchers are likely to enhance the validity of the interpretations. The period of data collection lasted, in total, for approximately 17 months. It is likely that a reasonable level of understanding was reached during this time.

*Generalizability* refers to the relevance the results have beyond the specific study (Gummesson, 1991). Compared to quantitative surveys based on statistical generalization, it is typically regarded as more difficult to generalize from qualitative case-studies based on theoretical representation because of the smaller “sample” (Andersen, 1997). However, qualitative studies may attain analytical generalization through e.g. the forming of concepts, in terms of generalizing particular results to some broader theory (Yin, 1994), and in terms of generalization from the user’s point of view (Stake, 1995). As a result, generalizability depends on the coherence of the research (Yin, 1994), as well as to what extent the particular reader finds the craftsmanship of the research and the credibility of the researcher reliable (Patton, 1990). Even though a comparative case-study of four firms increases the potential for providing more comprehensive insight into the complexity and variety of CD processes in PSFs than does a study of a single firm, this research does not aim at generalizing in a conventional statistical manner, that is, to a larger population. Rather, the study seeks to carefully describe considerations and proceedings in order to make the research accessible for others in order to permit comparisons with other settings and assess potential analytical transferability of the findings (Yin, 1994). By specifying the supporting evidence and making the arguments explicit, readers are enabled to judge the soundness of the claims made in this study with regard to extending existing theory.



*Credibility.* This study enhances credibility by providing thorough information about the firms and informants, and by striving to carefully discuss the methods and procedures undertaken, including the sequence of empirical investigation and presentation of findings. In addition, following Yin (1994), detailed within-case analyses are provided of each firm in order to emphasize individuality before making comparisons across the firms. Since the researcher's own interpretations are particularly prominent in qualitative research, the presentation of the empirical analysis is supported by extensive use of quotes from the field study, as suggested by Patton (1990). By presenting respondents in their own words and reporting data on which the analysis is based, readers are encouraged to make their own decisions regarding the credibility of the analysis and the answers to the research questions. Finally, thorough comparisons between empirical findings and theory are undertaken and illustrated in the study. From explicitly showing how the findings of this particular study relate to existing theory, the trustworthiness of the results produced is strengthened.

Qualitative research, thus, involves many considerations which imply a *balancing* of different elements in order to establish high quality. In this respect, McGrath (1982) puts it well when claiming that the research process should be viewed as a series of interlocking choices, not as a set of problems to be "solved", but rather as a set of dilemmas to be "*lived with*" (1982:69). Hence, in presenting the arguments underlying the methodological design and data analysis of this study, several of the many considerations to be *balanced* when working with qualitative research are pointed out.

Further, the quality criteria for research also relate to ethical aspects. Therefore, the ethical considerations of concern to this study are addressed below.

#### *Ethical considerations*

The National Committee for Research Ethics in the Social Sciences and the Humanities (NESH, 2001) has developed 46 guidelines for research ethics.<sup>34</sup> Related to methodological issues in this study, the following guidelines stand out as particularly important: (i) the obligation to obtain consent, (ii) the obligation to inform research subjects, (iii) the confidentiality requirements, (iv) the storage of information, and (v) the obligation to report research results back to subjects. These ethical considerations are discussed below.

*First*, this study presupposes active participation of informants. Hence, consent of participation was obtained from each participant at the outset of

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<sup>34</sup> NESH was appointed by the Ministry of Education, Research and Church Affairs, and has been active since 1990. For further information, see [www.etikkom.no](http://www.etikkom.no).

the research process. Informants were free at any time to discontinue their participation. None made use of this opportunity.

*Second*, the NESH guidelines state that “*Persons participating in research must be given all the information they need for a reasonable understanding of the research field, of the consequences of participating in the research project, and the objective of the research*” (NESH, 2001:10). In order to deal with this issue, each informant was given the same one-page summary, which consisted of a broad overview of the study, its overall aim, methodology, and approach. They were also informed about who financed the research. However, due to the exploratory nature of this study, it was important to avoid forcing predisposed ideas on the informants, which might reduce trustworthiness. Hence, a detailed presentation of the study was not given to informants prior to interviews or observations. Because, naturally, in an exploratory, sequential study, not all details of the research can be defined at the beginning of the data collection. In any event, the informants were provided with sufficient information about the study to direct their thoughts and attention to the topic. On all occasions, informants were informed about planned observations in advance. During regular interviews, the awareness of participating in research was clear. However, during informal conversations or observations, informants’ consciousness of being “researched” may be weaker. An advantage is that under such “natural” circumstances, people are more likely to “truly be themselves”. Further, when observing interactions between professionals and clients, the client was asked for approval by a professional several days in advance. Typically, clients were told that a doctoral student from BI was studying competence development in consultancies.

*Third*, in research, a dilemma often exists between the ethical demand for confidentiality and the basic principles of research, such as inter-subjectivity and the possibility of re-examining the results (Kvale, 1996). Each informant was ensured that information given during interviews would be treated confidentially and for the purpose of this particular research project. In order to keep this promise *and* to make the data accessible to other researchers for re-examination, the analysis is based on an extensive use of un-named quotes. The top managers in each firm decided whether the name of the PSF is to be made known or concealed. This resulted in a concealment of the names of the communication consulting firms and openness with regard to the names of the engineering firms.

*Fourth*, information which can identify individuals is not stored electronically, but manually under “lock and key”, as recommended by the NESH guidelines. After the dissertation is completed, the names of the informants occurring in interviews and observation notes will be stored

under reference numbers, and the list linking the names and the numbers will be kept separated from the rest of the written material.

*Finally*, ethical consideration regards the issue of exploitation. “*Sometimes it is claimed that research involves the exploitation of those studied: that the latter supply the information which is used by the researcher and get little or nothing in return*” (Hammersley & Atkinson, 1995:273). Informants shared both valuable information and (otherwise billable) time. What did they gain in return? It is difficult to compare what is given and what is received. However, people seemed to enjoy the interviews and the informal conversations, interpreted both from their efforts to thoroughly explain issues, as well as their sincere wish to portray their “story” in accurate terms. For example, informants reverted to statements made earlier in an interview in order to refine and explain more thoroughly the meaning of their statement without being asked to do so. Another example is the respondents who voluntarily returned transcripts with comments and specifications. However, it is acknowledged - and appreciated - that there may be conflicting views and contrasting interests between the researcher and the informants e.g. in terms of the framing and the results of the study. Hopefully, this research contributes to a better understanding of how CD processes take place in PSFs, which again can provide insights that both empower individuals’ competence and lead to improved competitive ability for the firm. Moreover, the NESH’s recommendation regarding the obligation to report research back to the subjects will be followed in terms of providing each firm with a copy of the dissertation.

### **3.6. Presenting the empirical material**

In presenting the empirical material, there are choices to be made regarding what empirical material to include and how to present it (Patton, 1990). In this study, the descriptions generated from interviews (and observations) consist of typed transcripts exceeding 800 pages. In addition, hundreds of pages of documents such as bulletins, annual reports, and printed web and intranet pages are part of the study. To make this material comprehensible, it is imperative to make a selection from the empirical material. In this respect, the reader has to rely on the selections made. In qualitative analysis, it is necessary to make judgments that provide clues about variations in the credibility of different findings (Patton, 1990). Hence, credibility is strengthened by selecting material and quotes illustrating “representative” views. This does not mean representability in a strict statistical sense. Rather, the relative strength of findings is indicated by using expressions such as e.g. “clear”, “strong”, “weak”, “all” (everybody), “majority”, “few”, and “none”.

In general, different approaches are used to present qualitative research. However, description and quotation are the essential ingredients (Patton, 1990). In this study, description is balanced by analysis, at the same time as the purpose of analysis is also to organize the description in a manageable way. In order to keep single informants confidential, quotes and descriptions are sorted under labels representing groups of informants such as ‘consultant’ and ‘designer’ in CREO, ‘manager’, ‘project leader’, and ‘project co-worker’ in TEKNA and ENGY, and ‘project leader’, ‘advisor’, and ‘client responsible’ in INFO. Informants with formal managerial responsibility are labeled ‘manager’. Since the names of two of the firms are disclosed whereas the other two are concealed, a similar style is chosen in terms of presenting all four firms under cover names.<sup>35</sup>

In inductive research, data description commonly precedes analysis. Another way, in line with a deductive approach, is to describe data within a theoretical framework. In this study, relying on both inductive and deductive approaches, a combination of descriptions, supported with quotes, and analysis is used as suggested by Golden-Biddle and Locke (1997). The research questions and particularly the VCPs of PSFs-framework, with a magnifying glass on ‘Learning 1’ and ‘Prioritizing CD’, combined with the two routes to accumulating invisible assets outlined by Itami (1987), are used to structure the presentation of the findings. In order to answer the overall research question, the presentation includes investigations of the CD policy, investments in CD on the one hand, and CD through daily operations on the other, as well as facilitators and constraints to CD, and types of competences being developed. However, before presenting the CD processes, the value creation logic of each firm is presented according to domain choice, service delivery, and resource base. This is done to classify the type of PSF, in order to sketch strategic frames for the analysis of the firm’s CD processes. Each case-firm is presented sequentially, following the order of the investigation, before being presented through cross-case comparisons.

### **3.7. Summary**

This chapter has described how the study is conducted. In accordance with the research question and existing literature on the topic, a qualitative, exploratory, and comparative case-study design was chosen based on an extended case-method. Four PSFs representing two different industries were

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<sup>35</sup> The names were constructed based on what seemed to suit each firm. For example, the firm TEKNA in this study must not be confused with the Association for The Norwegian Society of Chartered Technical and Scientific Professionals (Teknisk-naturvitenskapelig forening TEKNA).

selected based on “minimizing” and “maximizing” differences approaches. Data sources are mainly interviews, supported by written materials and to some extent observations. The informants represent variety in terms of tenure, experience, gender, and education. In addition, a key informant approach was used. The data is analyzed in iteration with theory, using within-case and cross-case analyses. The study is based on an exploratory approach, but also guided by a deductively applied framework. This allows for flexibility to incorporate emergent issues, while simultaneously being “on track” with regard to research focus. To enhance research quality and credibility, openness is pursued regarding the research process and ethical guidelines are followed. Findings are presented according to each case-firm and crosswise.

The next five chapters present the empirical findings. First, the findings from each case-firm are presented. Chapter 4 looks into CREO, chapter 5 deals with TEKNA, chapter 6 focuses on ENGY, whereas chapter 7 discusses INFO. The purpose is to provide within-case analyses of the firms in order to show the characteristics of each company. Thereafter, chapter 8 provides a comparative analysis across the companies.



## 4. CREO

This chapter presents the empirical findings of CREO. First, the firm's value creation logic and type of generic strategy are addressed. Second, the CD process is attended to in terms of (i) CD policy, (ii) investments in CD, (iii) CD through daily operations, (iv) CD facilitators and constraints, and (v) type of competence developed. Third, based on this material, a 'creativity dominant CD process' is suggested as the way in which competence is developed in CREO. Fourth, when further analyzing CD in CREO, there are good intentions and fine arrangements, however, the clients get first priority. Finally, the empirical findings of CREO are summarized.

### 4.1. Value creation

Building on the VCPs of PSFs-framework (Løwendahl, et al., 2001), particularly three components are crucial to value creation and the generic strategy (Løwendahl, 1992; 1997) of a PSF. These include the domain choice, the service delivery processes, and the resource base. Empirical material on these issues is based primarily on interviews with the CEO. In addition, publicity material such as the firm's web site and interviews with the partners are used as supplements.

#### *Domain choice*

CREO is a communications agency specializing in strategic internal communication and culture building. The firm constantly seeks to reinvent its services to maintain a strong position in an under-developed industry. According to the CEO, the market in which CREO operates is large, and the potential for growth quite considerable. The firm is not even able to cover the potential of its existing clients. This abundance of commissions indicates a very attractive client market. The CEO claims that no competitors offer the same combination of services. However, large advertising firms as well as other communication consulting agencies are trying to establish practices in this particular area, so far without the same success. For example: *"None of our competitors work in exactly the same business market as us. On the one hand, you have the traditional consulting companies that deliver reports. Some of them have tried to expand into our area, but we don't see them as real competitors yet. On the other hand, you have the creativity workshops. They work on the creative part, but are not rooted strategically, as we are. If you look at business advisors, they don't do the same things as us, nor do traditional communication companies or PR-firms. However, we have competitors on some parts of our work, for example within interactive*

*learning. But, we cannot place ourselves in the area of education, as little as we can place ourselves merely within management advice” (CEO).*

Hence, CREO’s domain choice, in particular as regards the types of services offered, seems to be relatively unique. Positioned between traditional consulting companies and firms that provide training which is not necessarily strategically anchored, CREO offers communication advisors who develop processes and tools that “*bridge strategy and action in order to create energy to change*” (CREO web site). Further, CREO enjoys the opportunity to be selective in terms of what assignments to take on. This selective emphasis finds its impression particularly in the introductory sales to clients. Says the CEO: “*It’s not interesting for me to work on projects which are merely replications of what we have done earlier. If I can’t put in elements of development in my sale towards clients, it’s not worth it*”. Hence, instead of simply aiming for the maximization of profits, CREO also has a conscious attitude as to what projects to take on in terms of opportunities for learning.

According to the CEO, CREO mainly serves private sector clients which are gained based on good reputation among former and existing clients as well as other networks. Its target market is deliberately limited to large companies with headquarters in Oslo. These are chosen because of their economic ability, as well as the opportunities for further assignments. Moreover, companies of a certain size often have high degrees of in-house resources, and when they decide to hire an external consultancy like CREO, it is primarily for larger operations or demanding tasks for which they do not have the appropriate expertise themselves. As a result, the projects are often large in terms of people and time involved, and allow for a substantial degree of innovation and creative development of solutions.

#### *Service delivery*

CREO’s communication consulting strategy is to integrate and clarify the relationships between internal and external communication. According to the CEO, CREO has, over the years, grown more and more specialized in the types of services offered. People in CREO work primarily for and with the top management in the client firm. Yet, the service delivery process involves close interaction with a number of client firm representatives, and typically concerns the intra-firm communication of new strategic initiatives to employees. For and with their clients, they seek to bridge visions, goals, and strategies with reputation and internal organization culture. In order to ensure the conversion from report to action, CREO develops “tools” that trigger action (CREO web site). Examples of tools vary from what is called the “value game”, a board game where values are transformed into practice, to the “culture camera” which identifies and visualizes organization cultures,



to strategic history narratives. At the same time as existing tools are utilized and further developed, “*we are continuously searching for what we believe is relevant competence to make new tools*”, says the CEO. In addition, the firm offers different management courses. One course is a “philosophical journey”, which travels from past, via present and into the future, aiming at providing new and alternative premises for decision making in organizations. Another course is based on art and brain research, and attempts, via practical exercises, to broaden managers’ understanding of their own communication skills. Overall, methods and tools are designed to create energy and provoke action, which means that words, ideas, and plans must have practical consequences. Client problems are dealt with in projects consisting of team-work with an average of two to three people per team. There are no regular teams. A project leader runs the project and is responsible for team composition, progress, client contact, delivery, and possible follow-up activities.

#### *Resource base*

In CREO, the resource base consists of experienced people who work as either consultant or designer. Each employee has an educational and practical background that is clearly distinguishable from that of the other colleagues. This includes e.g. a psychologist, an actress, a social worker, and an employee with a graduate degree in economics. Says one partner: “*It’s exactly because they have a special competence that we want them here. Of course, a certain level of competence is required, but that’s not interesting. The crucial point is their special competence - their diversity. That’s where we can contribute something unique to our clients. Clearly, an engineer, a theologian, and an actress provide a completely different and much more creative environment compared to three economists*”. The employees have an established reputation, and new hires need to bring with them a set of relationships to potential clients as well as external sources of competence and new ideas. The CEO explains that both consultants and designers are mainly recruited through networks. However, the designers are occasionally also recruited through traditional newspaper ads. The design work is primarily carried out by people with design backgrounds as opposed to the university educated consultants. The studio workers contribute e.g. visuals, sound, and illustrations to the scenarios, stories, and analyses developed by the consultants. In CREO, learning through team work is emphasized as crucial. In addition, efforts are undertaken to enhance employees’ collective competence with regard to the niche services they provide, including both processes and tools.

Based on the presentation of these three value creation components, a generic strategy for CREO is suggested.

### *Generic strategy in CREO*

It seems as if CREO has managed to create its own type of niche services in a market with few direct competitors. In this situation, CREO benefits from the opportunity to be highly selective when choosing types of projects and clients. People in CREO seek challenging projects for big companies which demand creativity and high service complexity. This way, they consciously try to avoid assignments which only involve “exploitation” of existing competence, as opposed to “exploration” (March, 1991) in terms of developing new, innovative approaches. This indicates that learning and innovation is given high priority in CREO. In order to be able to develop adequate services, CREO has deliberately chosen a resource base consisting of experienced people, each with a particular type of special competence. The underlying idea seems to be that interplay between diverse competences is likely to foster creative problem solving processes and tools. This emphasizes the importance of collaboration and team work to the development of CREO’s unique services. In addition, efforts are made to support and enhance the collective competence related to these services. Hence, it seems as if CREO relies on a mix of individually controlled and organizationally controlled competence resources. Overall, careful considerations seem to lay the basis for choosing the central value creation components (Løwendahl et al., 2001) of CREO - and the way they are combined.

CREO’s emphasis on challenging projects and service complexity, learning from exploration, expert competence, and creativity based on team work, are important priorities which characterize a creative problem solving based strategy (Løwendahl, 1997). As a result, of the three generic strategies proposed by Løwendahl (1997), CREO seems to resemble the type C) problem solving strategy in favor of the output based and client relation based strategies. Central elements of CREO’s generic strategy are summarized in table 10.

*Table 10. Generic strategy in CREO*

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<b>Creative problem solving based generic strategy</b>	
<b>Domain choice</b>	Offers internal strategic communication to large Norwegian companies. Deliberately seeks complex and challenging projects with a substantial potential for innovation and creative service delivery processes as this also provides opportunities for learning.
<b>Service delivery</b>	Mainly exploration and process based services for and with clients. Team based service delivery.
<b>Resource base</b>	Experienced people with established reputation and networks. High diversity in terms of employees' education and type of professional expertise. Team-based with a mix of organizationally and individually controlled competence resources.

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With the suggestion of CREO as a firm that seems to pursue a creative problem solving based generic strategy as a point of departure, the next section addresses the firm's competence development process.

## **4.2. Competence development**

First, CD in CREO is explored by looking at CD policy, i.e. approach to and orchestration of competence development. Data is primarily based on interviews with the CEO. Second, the question of how people in CREO develop competence is investigated according to investments in CD, followed by CD through daily operations. Data is primarily based on interviews with everyone in the firm. In addition, written materials (when existent) and observations are used as supplements. Fourth, CD facilitators and constraints are pointed out from a joint view on the two routes to CD. Fifth, the type of competence developed is addressed. Based on these investigations, the way competence is developed in CREO is suggested.

### **4.2.1. CD policy**

When talking to the CEO, continuous efforts are made to develop competence. Several of these run on a regular basis. This includes arrangements such as the Idea Board and the Breakfast Seminar. In addition, participation in internal and external courses is emphasized as important to CD. Through direct collaboration, the purpose of the Idea Board is to function as a creative source of inspiration to the people of CREO. The members of the Idea Board are all professional communicators with a particular expertise and approach to the problems CREO deals with. This

includes a photographer, a singer, a theatre manager, a philosopher, and an educator. These people are well known within the community of their particular profession, and some also in Norwegian society in general. Further, about five times a year, CREO offers what is called the 'breakfast seminar'. Invitations to these seminars are sent to people who are connected to the firm either as client, potential client, collaborator, or others that may have an interest in participating. The seminars highlight specific themes of interest to a general public within the environment in which CREO operates. Well-known people within different areas are invited as speakers. Themes have included topics such as: "Do you use your time effectively?" "What are your driving forces?" and "Leadership development which improves firm performance". CREO charges a small fee from each participant in the seminar.

However, written material of strategies, procedures, or policies for competence development is almost non-existent. One exception is a table prepared by the CEO, which states specific competence demands in the firm, as illustrated in table 11. Yet, there seems to be little top down pressure on CD in CREO. The CEO went so far as to say that: "... *unless people are personally driven by curiosity and interest, and try to develop their own knowledge, a small firm like ours cannot afford to hire them*". Typically, CD is employee initiated, not only in terms of what the person wants to develop, but also practically in terms of how. In return, the firm has a very open attitude regarding participation in both internal and external efforts to enhance CD. Everyone agrees that as long as their initiative is of relevance to the work at CREO, there are no "brakes" regarding financial support from the firm. Further, the CEO strongly emphasizes the contribution from interaction with demanding clients to CD: "*These are clients who put demands on themselves and on us. Clients who make sure we stay ahead with new thoughts and ideas*". Hence, effort is made, particularly by the CEO, to get assignments with good potential for CD. Due to the high emphasis on creativity and ideas in CREO, efforts are made to recruit and retain people with diverse competences, and to further develop relevant competence from diverse learning sources such as e.g. the Idea Board. Notwithstanding these efforts, everyone in CREO emphasized the team as the main arena for CD. In this respect, there is reason to believe that team composition plays a crucial role in terms of CD. However, there are no formal routines for team composition in the firm. The project leader composes the team, and the person who has sold the assignment to the client becomes the project leader. This can create a problem if the team is not well composed, because there are "*few opportunities for adjustments after the team is set*" (consultant).

Table 11. Competence demands in CREO

Competence demands	Strategic bridge builder	Powerful change agent	Inspiring diversity
<b>Special expertise within a particular area</b> <sup>36</sup>	<ul style="list-style-type: none"> <li>-Business understanding connected to the consequences for communication/organization development</li> <li>-Knowledge management/competence mapping</li> <li>-Communication strategy</li> </ul>	<ul style="list-style-type: none"> <li>-Web competence (use, structure, technical solutions, design)</li> <li>-Process understanding</li> <li>-Communication training/team building</li> <li>-Communicate a message (dramaturgy, visualization, design)</li> <li>-Initiate/integrate change proposals to tools and processes</li> <li>-Organization psychology</li> <li>-Product development/ conceptualization for CREO</li> </ul>	<ul style="list-style-type: none"> <li>-Different and complementary special expertise within a particular area</li> </ul>
<b>Basic competence</b>	<ul style="list-style-type: none"> <li>-Holistic understanding regarding our communication model (integrating internal and external communication)</li> <li>-Understanding the relationship between branding and culture building</li> <li>-Business understanding, knowledge about market development, understanding business potential, contributing to client development and growth</li> </ul>	<ul style="list-style-type: none"> <li>-Social competence (team work, relation building, sales)</li> <li>-Rethoric</li> <li>-Project management (ability to carry out projects)</li> <li>-Idea processes/creative processes</li> </ul>	<ul style="list-style-type: none"> <li>-General development in society, trends, and market development</li> </ul>

For general employees, CREO has no particular incentives systems beyond the regular salary. However, the firm has a partnership for which special incentives apply. The aim is to keep attractive people in the firm and motivate them to (i) work by the values of CREO, (ii) to realize the partnership agreement, and (iii) to contribute to a good financial state for CREO (written material on reward system in CREO, 1999). Reward is given as a monetary bonus for additional effort beyond employee agreements. The partnership invites new partners based on evaluations of previous work, including sharing of competence with colleagues.

<sup>36</sup> In Norwegian referred to as “spisskompetanse”.

Overall, this shows that managerial effort in terms of CD orchestration in CREO supports direct interaction between colleagues, and between employees and collaborators outside the firm. IT, i.e. Apple software, is only used as a working tool for the writing of documents etc., and is claimed to play no role in the development of competence. Rather, face-to-face interactions are entirely dominant. Hence, the CD policy in CREO is to develop competence through what Hansen et al. (1999) refer to as a “person-to-person approach”.

Based on such a CD policy, then, how do people in CREO actually develop competence? The responses to this question are first presented according to investments in CD, and thereafter in terms of CD through daily operations.

#### **4.2.2. Investments in CD**

People in CREO seem quite conscious about designing CD efforts. They frequently set aside a small number of hours for development purposes - hours which could otherwise be allocated to service delivery. During interviews, people mentioned the following arrangements as investments in CD: ‘The Idea Board’, ‘internal courses’, ‘external courses’, ‘Traffic’, and ‘training needs emerging in projects’. Each of these is addressed below.

##### *The Idea Board*

According to the CEO, people in CREO enjoy contact with a rich network of persons, and some of these meet in what they call the Idea Board. The Idea Board was established during the period when CREO was moving away from being an advertising agency and toward a communication consultancy. It has existed for many years, and whereas external members are invited and exchanged on a regular basis, the concept of using it for internal development purposes has stayed the same. The interaction with the people of the Idea Board takes place through face-to-face discussions, presentations, and problem solving in order to enhance service delivery to clients through new ideas and improved tools. In this respect, the Idea Board serves as a vehicle for the development of new ideas, as well as an arena where ideas are tested out and adjusted based on feedback. A consultant explains the usefulness of the Idea Board for CD purposes:

“Our vision is to make communication solutions that give energy to change. That’s pretty demanding. Therefore, we need collaborators with communication as part of themselves. We want to use them for our own development, as checkpoints towards our products and tools, as well as in client projects. It’s important that *we* get things from the Idea Board, but *they* must also experience interesting insights in return. It’s very demanding and inspiring to meet them. They’ve pulled us a couple of steps further. Things

they've said and done have lead us to create exactly this new tool. That contact, that diversity, is absolutely essential to my learning and to create the type of environment we have here. It's easy to stagnate in our own way of thinking if we don't get input from people with other types of competences. Diversity contributes to my competence development, as it makes me dare things I wouldn't otherwise try out" (consultant).

This quote points to the importance of external collaborators to the process of CD. Since the Idea Board consists of people with diverse backgrounds in terms of education and work experience, the quote also illustrates the centrality of heterogeneity in terms of external sources of competence to learn from. According to prior research, learning from people outside the firm has been demonstrated to be important to e.g. employee learning (Nordhaug, 1993) and innovation (Argote, 1999). Even though the purpose of the Idea Board is to contribute to CD for CREO employees, the Idea Board members must also get something back in order to maintain their motivation to uphold the relationship. Interesting and challenging problems serve as motivators for both parties. In several ways, the Idea Board seems to resemble what Wenger and Snyder (2000) describe as a community of practice. On the other hand, the Idea Board seems to have a rather formalized structure, and its existence is based on its ability to contribute to certain goals, particularly for CREO.

The aim of the Idea Board is to develop people's competence, to build and exchange knowledge. The members are carefully chosen and invited, and common interest, commitment, and identification with the group's expertise holds it together for as long as there is interest in doing so. The quote also shows that learning from interaction with the Idea Board builds greater confidence to embark on and explore new tasks and activities. Research on motivation clearly states that feedback is crucial to learning (e.g. Rand, 1991). Hence, this confidence seems to relate to the use of the Idea Board as a "checkpoint" on which to probe new ideas before presenting them to clients. On the other hand, the members of the Idea Board typically approach problems from an artistic approach. Therefore, they also need to be steered in order to keep focus on what is relevant to the business of CREO. Says the CEO: *"At the same time as they (people of the Idea Board) provide new angles to our problems, they sometimes forget the core of our business. We depend on selling and creating services which result in actual change for our clients"*. This indicates that in order to make the Idea Board work, the members cannot be too different from the professionals at CREO. According to Dougherty (1992), heterogeneous groups of members with different "thought worlds" can have difficulties working together. On the other hand, in a study of product development, Moorman and Miner (1997) found that heterogeneity of views enhanced new product creativity. In general, studies

finding a positive effect of heterogeneity examined tasks involving creativity and product innovation. The informants' experiences with the Idea Board support these results. Hence, the Idea Board seems to represent an important source of CD for people in CREO.

#### *Internal courses*

Another investment is 'internal courses' conducted to enhance competence among the professionals. Such internal courses emerge from project needs - both existing and anticipated - and from the initiatives of individuals. Since CREO consists of seniors with highly different experiences and educational backgrounds, there is a major emphasis on internal contributions to CD. For example, at the time of the study, one of the designers ran a course over a few evenings in figurative visualization, whereas a consultant was responsible for a course in communication. Another type of internal training is to invite external people as sources of inspiration. This happens frequently in CREO, and is encouraged by the manager: *"If you wish to arrange an evening gathering inviting e.g. a well-known psychiatrist, you are free to do so. Nothing prevents you from that. You get funding, the premises are at your disposal and refreshments are provided. By and large, you get what you ask for"* (CEO). However, the high time pressure in projects is claimed to have negative consequences for the time available to spend on internal development arrangements. According to the CEO, *"spending money is easier than spending time"*. In CREO, where about 75 % of the working hours per year should be billable, time is seen as a major constraint to such initiatives. For example: *"Sometimes we try to arrange in-house courses. I taught a course last fall. Now, I have to run it again because people were too occupied with projects, and as a result they dropped out. Besides, new people are recruited"* (consultant).

Hence, several informants refer to a kind of "double communication" in the firm. On the one hand, they want high degrees of action and learning, and are dependent on sharing and developing their competence. On the other hand, there are budgets and deadlines to be kept, which makes it difficult to prioritize CD. For example, from observations at a weekly meeting called 'Traffic', people clearly expressed that they wanted more internal courses. According to one of the consultants this was *"same procedure as last year"*, where three persons had volunteered to take responsibility for the internal development. These initiatives had worked fine for some time, but then started to slide because people prioritized client projects before internal courses. Internal courses, thus, are held irregularly, being both facilitated and constrained by the personal initiatives (or lack of initiatives) of the employees. It can be speculated whether the shortage of time is caused by short-term planning, or whether time is only an excuse for making fewer initiatives? The CEO reflects upon this issue: *"Is it because they have too*



*much work to do at the job, or is it because they have small kids? What stops what? How much time can you actually set aside, compared to what you want?”, she asks.*

There may be several reasons for the responses of high time pressure. Nevertheless, time is often regarded as a crucial asset in consultancies in general (Maister, 1993). In addition, since clients are often the ones defining the deadlines, and since the firm’s reputation depends on the satisfaction of clients (Løwendahl, 1997), client needs are at the forefront. Hence, the amount of assignments seems to determine the degree to which people find time to attend to CD efforts beyond client projects. High time pressure due to client requirements is claimed to constrain personal initiatives, which again vary. One designer says: *“It’s always clients, clients, clients. I wish we could spend more time on our own organization and competence development”*. Also another designer emphasized the need for a larger internal focus, where CD efforts were organized in a more systematized way, including more pre-planned and formalized competence development with budgets specifically allocated to particular themes. In this respect, re-introducing the “CREO school” which existed several years ago, was suggested. At that time, there were many new hires and the “school” served as an internal introductory program to the firm. Overall, several internal development arrangements exist in CREO. Yet, it seems as if a large part of them run on a more irregular basis than the informants claim to appreciate.

#### *External courses*

There is a certain budget set aside for external courses. However, none of the informants remembered the amount of money allocated to this purpose. The partners also put some of the firm’s profit into an “account” for personal competence development. According to one designer, there is very little unpurposeful CD in CREO compared to her previous work place, where courses were taken more or less uncritically: *“After three days away from work you’d learned something useless to the job anyway. Here, I need to argue for the relevance in advance – in order to get a “go” from the manager”*. When an employee has been to an external course, the person is expected to arrange an internal “course”, presenting what she has learned to the rest of the firm as competence sharing. On average, each employee participates in one or two courses each half-year. Another type of arrangement which closely resembles external courses, is the ‘breakfast seminar’. Regarding CD, none of the informants spontaneously mentioned the breakfast seminars as important. On the other hand, it is not unlikely that these arrangements, which are conducted in collaboration with external people, may contribute to learning for people at CREO as well as for other participants. However, the data indicates that the breakfast seminars do not represent a very important effort in terms of enhancing CD.

### *Traffic*

Once a week, everybody in CREO meet in what they call Traffic. Traffic used to be a meeting for scheduling next week's work. However, based on employee initiatives to also create a meeting place for sharing experiences among people in the firm, Traffic has for the last year been extended in time in order to serve as a setting for bringing up ideas and discussing past, current, and future projects. In this respect, traffic may contribute to CD: *"We spend more time on Traffic than necessary if we only were to plan next week. It's more fluid. We talk about the jobs, launch ideas, correct each other, and discuss the processes we are involved in. This is also part of our learning"* (consultant). However, only a couple of informants explicitly mentioned Traffic as a source of learning. In comparison, the Idea Board was frequently highlighted by all informants. This may indicate that Traffic does not fulfill its intention of also being an important arena for competence sharing. Or, can it be that Traffic is an informal arena for CD, but most people are not conscious about it?

### *Training needs emerging in projects*

CD investments are closely related to the tasks to be solved in assignments. Hence, sometimes the distinctions between efforts designed to improve the resource base and CD related to project work is not very clear, as in this example. *"It's up to each and every one of us to seek our own competence development, to develop the job and the work day - simply to push the job forward"*, says one consultant. Similarly, one of the designers works a lot on Mac. It is important for her to keep an eye on the development of new programs etc. Since there are few planned courses, instead, she enjoys the opportunity and flexibility to set aside time to learn new programs considered valuable to the project. Then, the time spent on learning the program is not billable time. However, as a consequence, it sets the service provider in a better position to deal with the client problem in a more efficient and competent way at a later stage. *"I also know that the client will ask about my competence within this area, so, I need to be prepared"*, she says. Thus, foresight and being proactive in seeking the relevant type of competence is particularly emphasized. This is also the case in an example of course training as part of the billable service delivery.<sup>37</sup> A consultant tells about a project in which the use of scenarios is central. Since it was the first time scenarios were used in such a way, the consultant had to spend time getting to know more about scenarios related to the particular setting. In addition to the reading of books and material on the internet, the informant participated in a one day work-shop on the subject. This illustrates that CD

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<sup>37</sup> It is important to note that this example does not refer to projects where the PSF can bill clients for irrelevant costs, simply because the clients have no way of distinguishing between value creation and other activities incorporated into the fee.

efforts necessary to deliver appropriate services can be directly tied to the billable time of projects on the one hand, or, characterized as non-billable hours on the other. In any event, competence is to a large extent developed based on an individual drive in order to provide proper services to clients. This reliance on employee initiatives also applies with regard to internal development arrangements and external courses.

*Further analysis*

According to the informants, CD through investments takes place through internal and external training activities. Building on Nordhaug (1993), *internal training* refers to educational activities that are planned and arranged predominantly by and for people employed in the firm, whereas *external training* activities are arranged and carried out by others. In CREO, internal courses and Traffic corresponds to the former. This shows that investments in training do not only include courses, but also more informal sharing of competence through regular meetings such as Traffic can be incorporated when training is broadly defined. External courses correspond to the latter type of training investment. However, the Idea Board does not seem to fit into either of Nordhaug's categories. The effort is arranged by and for people in the firm, but to a large extent carried out by others. The Idea Board, thus, can be seen to represent a combination between internal and external training as defined by Nordhaug (1993). However, since its activities are highly customized for the purpose of enhancing learning in CREO, and typically takes place in the firm, it is in this study regarded as internal training. Moreover, the Idea Board seems to resemble Wenger and Snyder's (2000) concept of a community of practice rather than a pure training activity in the terms of Nordhaug (1993). This notion is based on the way in which the Idea Board is organized, its purpose, and, particularly, the emphasis on a two way learning between its external members and the professionals of CREO.

Individual training needs in CREO, thus, emerge either directly from projects or from proactively seeking to continuously enhance future service delivery through the development of new ideas and tools. Most efforts seem to be directed to support the latter, which primarily takes place through internal development arrangements. According to Nordhaug (1993), small firms typically rely to a large extent on external training. Hence, the major emphasis on internal training in CREO may be quite unusual for such a small firm. Further, the generation of firm specific competences needs to be carried out in-house (Nordhaug, 1993). The statements demonstrate that the internal development arrangements are highly customized to support the services CREO offers. This suggests that competence developed through internal training is likely to embrace high degrees of firm specific competence. In addition, the close link demonstrated between investments

in training and the domain choice of the firm (Løwendahl et al., 2001) in terms of service delivery, implies that the training is highly relevant to the firm.

Diversity plays a crucial role to CD in CREO. According to Nordhaug (1993), firms with heterogeneously composed competence bases, are less dependent on contributions from external learning sources compared to more homogeneous competence bases. The emphasis on learning through internal development arrangements in CREO, thus, seems to rest on the wide diversity among the employees. However, due to the relatively small number of employees, the internal training efforts also rely on an extensive use of external collaborators. Overall, thus, the professionals in CREO develop competence through training investments that take place primarily among colleagues within the firm, but which also rely on a number of externally invited people.

In terms of investments, there is little degree of unpurposeful CD in CREO. Rather, efforts are undertaken for a particular purpose. The firm customizes its internal development, and the professionals develop competence through *a mix of internal and external training* where competence diversity is highlighted in both. The firm's policy is to ensure that the external courses people attend match the competence needed in assignments. Hence, there is a high degree of steering between investments in CD and the CD (required and anticipated) in service delivery. In addition, these investments, and particularly the internal ones, share a high emphasis on collectivity.

Next, CD in service delivery is addressed.

#### **4.2.3. CD through daily operations**

Daily operations refer to the client project work in CREO, and constitute the largest part of everyday activities. Service delivery for clients is conducted in teams with an average of two to three people per team. In assignments, 'learning by doing' stands out as principal for CD. In addition, 'competence diversity', and 'meeting the client face-to-face' are emphasized as positive to CD. On the other hand, 'high time pressure' is regarded as particularly negative to learning. In addition, 'team composition' influences the professionals' CD in daily operations. These issues are discussed below.

##### *Learning by doing*

All informants claim that learning by doing in project work represents by far the most important source of CD. In particular, the project team is seen as vital, as illustrated in the following quote: "*The project team is my arena for competence development. It's learning by doing. We spend little time on getting to know the projects or the fields other than through the jobs*"

(consultant). Further, informants often looked back in time in order to better describe their process as learning by doing. Says a newly hired consultant with many years of previous experience from organizational development: *“During the few months I have worked here, functionally, I have made a “seven mile step”, because I have been thrown into projects, not alone, but I’ve got a lot of responsibility. It’s learning by doing”*. In general, this is the way new employees learn the work in CREO. They are immediately brought into large projects where they are challenged and backed up by more experienced team colleagues. According to the CEO, *“there is no other way of doing it”*. Another illustration of learning by doing is made by an employee, at present, regarded as one of the most experienced consultants. She referred to a sales process with a client she was going to meet the next day, and stated: *“Some years ago, I would have clung on to someone more experienced - to get help. Now, I see that I can handle this myself, because I have been in such situations many times, and observed how others deal with sales”*.

These quotes indicate that learning by doing is closely connected to seeing how other colleagues handle work tasks and situations, at the same time as being challenged to perform in similar situations oneself. However, both repetition of the same processes, related to various types of problems and contexts, as well as exposures to work and working processes different from those of one’s previous experiences, seem to contribute to CD. The informants’ opinions further point to learning by doing as a process that develops over time, often over many years. However, it is also possible to point out learning over a short period of time, as in the first example with the newly hired. The learning curve may be steeper for a newly hired person who starts working in a company with its core business, not distant from, but to some extent different from the person’s earlier experience (Nordhaug, 1993). In addition, CREO has a set of routines and ways of doing work, as well as a certain culture, aspects which presumably are also part of the initial learning for new employees.

Further, large projects as opposed to small, are seen as most developing in terms of learning by doing. Says one consultant: *“Large projects open up for spending more time on each issue, and to test out our ideas in different ways”*. Also the designers see large projects as most important to CD. For example: *“I notice a huge difference if we have a large project. Then, there are intense discussions, and I get very, very involved because we are small and so many people have to give a hand. As a result, we are here on Saturday and Sunday, working like crazy to meet deadlines. That’s so good for the learning part. We share so much more, and the development happens more easily. I speak a lot with the CEO who tells me about the project and I*

*get a totally different understanding compared to just reading a sheet of paper” (designer).*

Hence, in CREO, learning by doing takes place in service delivery, and primarily together with colleagues. This is further supported by the fact that formal or specific master-apprentice relationships do not exist in the firm. Competence develops through informal relations, where experienced people become informal guides in terms of introducing new people to the firm’s philosophy and way of working through the projects. For example: *“I don’t think you can find a place that provides any theoretical education on what we do. The basic model has to be learned here. You cannot simply go out and buy such competence”* (consultant). This represents a strength in terms of the threat of replication by competitors (Barney, 1991). But it may also represent a constraint to the CD process in the firm, because it becomes quite time consuming and demanding for the experienced people who serve as informal guides to develop new hires into the level of competence required. In a setting where time is scarce, experts know they can work much faster and earn more for the firm by working on their own, than when bringing along “learners”. Still, they have to serve as coaches in order to invest in future competence for the firm. Therefore, says the CEO: *“... it’s no secret that I prefer to take someone knowledgeable with me, because it would make things easier for me. Instead, I have to bring someone who doesn’t know the job in order to guide that person through the project. I must carry the extra burden such efforts involve”*. Such informal guidance, thus, also depends on individuals’ willingness and ability (Nordhaug, 1993) to share their competence through spending time on the informal training of new colleagues, as they go on doing their work.

Since also people who have worked in the firm for many years, claim that learning by doing is crucial, this may relate to the types of assignments CREO is able to get. All informants mentioned the *“very exciting assignments”* they work on as crucial to their learning. These assignments seem to relate to the fortunate market position CREO has managed to establish. The firm can to a high extent work with the clients it chooses on projects which look like a good opportunity for CD. The high degrees of learning by doing as claimed by the informants, further relate to the complexity of the services provided. In CREO, the aim is not to deliver reports, but to generate action through a highly customized implementation at a detailed level in which words and concepts are given a specific meaning in a particular context. Further, the process work of CREO seems to involve high degrees of uncertainty and ambiguity, as illustrated in the following quote:

“After a while, when you have done it a few times, you get better equipped for handling the chaos periods. Before, it stressed me a lot, but now I trust the process we are going through. Even though the open phases are very chaotic because you get so much and varied signals and input, and it’s difficult to perceive what is coming out in the other end. There are many paths to choose among, and there’s no one clear solution. Now, I have learned to trust that, ok, this is only this step, next step we will tighten up, and we know how to do that. Earlier, I felt much more tired. I think it’s due to several things - understanding the communication processes, being familiar with the models, how to approach, and sorting out which ways to follow” (consultant).

In a similar vein, one of the designers indirectly sheds some light on the complexity of the work they do, and how the services have developed over time. She has been with the firm for seven years and says it takes many years just to understand the philosophy and the way of thinking in the firm, “*to really get it under your skin*”, as she puts it. This indicates that the processes underlying the services are not very easily developed, but require maturation and hands on experience. It can take several years to get a deep understanding of this process, even for senior professionals with extensive practical experience. The services have been shaped over a long period of time and are still up for continuous improvement and further development. On the other hand, it can be argued that the lengthy learning process is due to the fact that some of the employees do not have experience from business consulting. It is easy to imagine that this may increase the time needed to gain relevant competence, and at the same time enhance the degree of perceived learning. Yet, since these views are also advocated by informants with many years of experience in the firm, they can be seen as indications of high degrees of complexity in service delivery. As a result, the process approach to work and the firm’s type of complex services combined with consciousness towards development and project assignments, indicate a potential for high degrees of continuous learning by doing – also for senior professionals.

Another element which stands out as important to CD, is the clear emphasis on competence diversity among employees.

#### *Competence diversity*

At CREO, it is explicitly expressed that each professional is to represent a special competence different from that of the others. This diversity in educational background and experience is also emphasized by all informants as contributing to CD. Learning based on diversity is closely related to the firm’s strategic choice regarding recruitment and compliance with the types of services they deliver. This diversity has particular impact in project work, and relates to the diverse pool of people to learn from. The following example illustrates how competence is enhanced through diversity. One

person from theatre acting and another with a masters in business are described by a fellow colleague:

-Informant: “Together, X and Y are dynamite. X with her business understanding and consulting approach combined with Y’s pedagogical savvy is priceless for the firm. Y has added so much to our projects. Before, we didn’t have a person who could contribute with exercises in communication at that level. Now, communication training has become a very important part of the total package we offer to clients. This, again, spurs new developments, such that we continuously stretch ourselves compared to what I first thought was possible” (consultant).

This is further explained by Y:

“When I work together with X, we have fundamentally different universes of experience, and when those meet, our work turns into something none of us initially could imagine. Then, shallow knowledge is of little use. You have to know something extremely well in order to be able to use it differently from what it was originally meant for” (consultant).

Hence, diversity among senior peers may spark new developments as well as add and alter services offered to clients. However, it is also a challenge to bridge these highly different perspectives, because in a short-term perspective it takes time and effort to adjust to such highly divergent ways of thinking (Argote, 1999). This is particularly challenging in situations with high time pressure. Then, it may be easier to work with somebody with a more similar background. The important issue in terms of developing competence from diversity, thus, is not the diversity in itself. It is the capacity to utilize the potential creative aspect connected to variety in terms of creating effective arenas for collaboration and interplay. In addition, support from a receptive culture continuously searching for opportunities to exploit is important (March, 1991). This also involves risk taking in terms of choosing untraditional employment, despite possible scepticism from people asking questions such as: “*How can we benefit from hiring an actress in a business consulting firm?*” In this respect, it is not the actress herself that is interesting, but rather her capacity as an educator and messenger of communication advice to clients. An element important in the transformation and sharing of competence from diversity seems to be expertise and experience within the given field: “*When I teach rhetoric, I do that from 25 years of work within the art of persuasion. Clearly, that’s something totally different from people teaching presentation technique*” (consultant). In this respect, learning from each other is facilitated by deep knowledge of a particular issue gained from lengthy experience. This way, professionals can internalize and refine their competence through past and present experiences (Dewey, 1916; Kolb, 1984). The above interpretations point in the direction



that deep competence combined with diverse experiences are likely to enable professionals of CREO to see practical connections, and fruitfully utilize them.

Further, based on their diversity, informants find confidence to move in new directions, because ideas and suggestions are scrutinized by people with different opinions coming from a variety of perspectives. In particular, the CEO is mentioned as a role model with major courage to dare doing things differently or to do different things than other players in the market. At the same time, there is ambivalence to the courage expressed: *“It also feels threatening, because there’s always something new to relate to. You don’t know in advance whether you’re able to fix it”* (consultant). However, this uncertainty seems to represent a strong driving force, as a lot of the learning by doing highlighted may lie exactly in this dynamics of operating in a context where demands are high, the process ambiguous, and the end result not possible to test out in advance. On the other hand, this courage is to some extent suppressed by the very critical manner in which new ideas are received and responded to by colleagues. The critique has to do with the quality control being practiced in the firm, as people *“quickly react upon things experienced as not good enough or incorrect - according to their view”* (consultant). Further, *“this rigorous correction makes me feel constrained with regard to what I think I can do, as well as what I think I’m allowed to do”*, says another consultant. Hence, this attitude is experienced as negative to learning and development, as it to some extent ties up creativity. A substantial part of the service delivery process relies exactly on creative elements such as inspiration, energy, and novelty. However, the harsh correction also leads to something positive, because when *“we go for an idea, you can be pretty sure it’s a fairly good one”*, says one consultant. The informants further say they need to change this control culture into a more open one. In CREO, thus, useful learning based on creative initiatives also seems suppressed by an environment or a culture which is highly concerned about keeping a certain quality (control).

So far, the importance of learning from colleagues has been pointed out. However, the investigation also shows that competence development is not restricted to learning between colleagues. The clients are also seen as a major source contributing to CD. In particular, meeting the client face-to-face is highlighted.

#### *Meeting the client face-to-face*

All informants emphasized direct contact with the client as important to CD. The project leaders are the ones working closest with the clients. The designers, as well as consultants with less frequent project leader responsibility, meet clients on a much more irregular basis. A designer

explains the importance of participating in client meetings, because it provides a more precise and holistic understanding of the problem and how to go about solving it: *“I’m a seeing is believing type of person. Tell me and I don’t understand, but show me and I get it. If I’m in a meeting listening to the client’s own words, that produces a totally different understanding than hearing one of the consultants telling the story afterwards”*. Further, it can be even more useful to meet the client together with colleagues. Says one consultant: *“What is really useful is to attend client meetings together with my colleagues, because such situations always add extra pressure. You have to give more than if you just sit in internal meetings”*. CREO has a policy of always being at least two in client meetings, and each person is supposed to fill a certain role in terms of making a particular contribution. Meeting the client together with colleagues allows for a more immediate visualization of how different types of competences may combine to make a more complete picture: *“Because then you realize how the competence of each individual contributes to a whole to a totally different degree than if we first sit together, and then somebody goes out and presents the results. In my opinion that’s wrong”*, says one designer when referring to a client meeting together with three other colleagues.

These opinions seem to illustrate at least two conditions. Primary interaction with clients may contribute to CD on its own premises, in terms of direct learning from the client. Second, attending client meetings together with colleagues can also enhance learning about how the competences of colleagues link together and fit into the broader perspective. Further, whereas the service delivery process is supposed to end up with concrete tools and suggestions, the degree of problem specification at the beginning of the assignment varies. Often, the client problem is not defined very clearly. This aspect may add to the benefit of seeing and speaking with clients, because then both consultants and designers need to get signals and impulses beyond the particular problem in order to be able to develop services that fit the client organization. Such open-ended requests, as opposed to clearly defined solutions, are seen as more demanding. For example:

*“The clients don’t come to us with clearly defined problems. A good example is a program we developed for promising employees in a major firm. The client simply asked us to do the following: As these talents go through the modules, we want you to take them on an exciting journey that can help them develop good work places of the future. With the exception of this short briefing, we were given no other guidelines. When people come to us with tasks this vague, it puts major demands on us, and the potential for development is quite enormous. The talents learned how to integrate scenarios in their planning, and those who presented the results to the top management became heroes in their organization. The scenario for future*

work places has been reworked into a speech that the HR director gives. All of this is the result of a short briefing asking us to develop an inspiring journey. I learned how to use scenarios in practice. It was personal competence development for me too” (CEO).

This illustrates that the degree of client problem specification can influence competence developed from exploration. Clients with under-specified problems are preferred because CD is enhanced in these types of projects. The informants claim that the degree of problem specification is closely connected to the relationship the firm has with the given client. This indicates that strong client relationships increase the potential and opportunities for gaining the preferred open-ended assignments. Another aspect highlighted by a couple of the consultants is the strong influence of the client’s level of competence on their CD. What really differentiates clients is the level of competence in the client organization. It can be difficult to predict this level in advance, as it is often expected to find that firms of a certain size holds a certain level of competence. Says one consultant: *“Clearly, it’s ten times more exciting and valuable in terms of learning to work with highly competent clients who constantly challenge you professionally, versus the ones we have to push and lift”*. This implies that not only is meeting the client important, the client’s competence is also of importance, as learning opportunities seem to increase with competent compared to less competent clients. Hence, crucial in order to learn in client relations is being able to actually meet the client face-to-face. Second, it is beneficial to meet the client together with colleagues. Third, it seems positive for CD to work with competent clients with open-ended requirements.

However, the degree of direct client contact varies among people in CREO. The project leaders (the most experienced consultants) see clients most frequently. The extent to which other team members meet the client depends on whether the client is willing to pay for an extended team. Says one designer: *“I think we should carry more of the cost ourselves. We can even benefit from that, because when I see how my piece of work fits into the rest of the project, I can customize the job much faster and be more precise”*. Hence, the cost frames in a project are claimed to determine the opportunities for meeting clients face-to-face. Tight budgets may potentially constrain CD as they allow for less direct client collaboration by regular team members. Yet, most negative to CD seems to be the high time pressure resulting from tight project deadlines.

#### *High time pressure*

All informants claim that the high time pressure has negative consequences for CD. The trend of high speed in society in general puts increasing

pressure on reducing the time between order and delivery. For example: *“Time is the constraining factor. Jobs we could spend a year on previously, are now supposed to be ready in three months. That’s today’s reality. The clients don’t have time to wait”* (consultant). Typically, the high time pressure relates to client demands, as the client sets the deadline for the project. In addition, both designers and consultants claim that the high capacity of the CEO drives up the pace. Says one consultant: *“When she runs twice as fast as the rest of us, it becomes difficult. As a result, she makes things her way in order to maintain the quality, whereas I run behind - out of breath and exhausted”*. This marks the whole organization, and reduces the time for reflection and good collaboration. Instead, hasty messages are given with limited time for thorough explanation and discussion. Most informants see this as a problem. According to Schön (1983), reflection in action and reflection over action are crucial elements of knowledge creation. On the other hand, Argote (1999) argues that time pressure has a positive effect on performance because it sharpens and puts pressure on the brain capacity. Thus, based on literature, high time pressure can derive both positive and negative implications. At CREO, the consequences of lack of time are particularly prominent in situations where some have worked on similar problems previously and gained a lot of experience, but where high work pressure constrains them from passing on important learning to colleagues such as e.g. good advice about how to proceed. Over time, further negative consequences may follow. For example, a couple of people have decided to exit the company - after colleagues have invested a lot of time and effort into bringing them up to the level required in order to do a good job. *“I think we burned them out. They gave whatever they had, and ended up tired and done with this firm”*, says one consultant. As an answer to this problem, better delegation of work tasks was suggested by the informants. Whereas some (mainly the consultants) were too busy, others (mainly the designers) experienced more slack. This seems also to relate to team composition, as discussed below.

#### *Team composition*

As shown, teamwork contributes to CD. However, the degree to which an individual gets relevant opportunities for learning depends on the type of assignments the firm currently has, the individual’s personal drive, and the types of projects the person works on. In terms of the latter, the project leader composes the team she is responsible for.<sup>38</sup> In other words, the

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<sup>38</sup> The project leader runs the project and is responsible for client contact, team composition, delivery, progress, and possible follow-up activities. The consultants have traditionally been project leaders. However, lately, the designers are given increased autonomy over the type of work they do.

consultants can select individuals they prefer to work with: “*By being able to pick team members, I can choose to work with people who challenge me and who I can learn from, people who develop my competence*” (consultant). Hence, people with project leader responsibility may influence both self-development as well as the development of others by choosing who gets to work with whom on project assignments. This is beneficial to the project leader, but may constrain the CD of others.

Few guidelines for team staffing, thus, may lead to extensive use of some individuals whereas others to a less degree become involved, as in this example: “*Whereas some of the consultants drown in work, I want more of it. I’m under-utilized capacity, and I feel now that my competence starts to “drip” from me*”, says one designer. This indicates that CD in CREO may be constrained for some employees due to fewer practice opportunities relative to others. This illustrates that not only the type of practice opportunities, but also the degree of them are important. According to Nordhaug (1993), lack of practice opportunities to apply competences may lead to negative learning, i.e. loss of competence. In particular, there is a difference between the consultants and the designers in terms of opportunities for CD. According to one of the consultants, CD is clearly higher for the consultants than the designers, and particularly for the consultants working closest to the top managers in the client firm, and, then, “*to a less degree the further you move beyond*”. The CEO explains that these differences can to some degree be ascribed to the different type of work these two groups do. Nevertheless, it illustrates that whereas some get very exciting commissions and are quickly lifted up, it may take longer time for others to reach the required level of competence. According to the CEO, this is problematic, but on the other hand, everybody do not need to be equally competent because they perform tasks which require different types of competences as well as degree of complexity.

#### *Further analysis*

The claim of high degrees of learning by doing through daily operations seems to relate to at least three different aspects: the opportunity to choose among assignments, the type of services offered, and the diverse competences among employees. These aspects are a result of strategic choices made with regard to the positioning of the firm and what people to attract and retain. Hence, there seems to be a fruitful relationship between choice of projects and learning through service delivery. The foundation for the processes CREO offers to clients lays with the firm’s employees who are the carriers of the firm’s competence. Here, the wide diversity in terms of people’s competences is crucial. There appears to be a good match between the complex and creative process-based services on the one hand, and the type of senior people recruited. For example, the work consists of a

combination of communication, interpersonal processes, and business understanding. The competence base includes e.g. an educator, a social worker, and a person with a MSc in business administration. In this respect, it is the interplay between these actors and the way in which the different competences are utilized, which contribute to the particular tools and processes CREO sells. Further, a mutual interplay exists in CREO, as recruitment of people with new types of competences is utilized to further develop and extend existing services. In this respect, the project team represents the most important arena for competence sharing in the firm. As a result, CREO is able to develop competence through service delivery to clients. This implies that the main CD process is less costly compared to direct investments in CD (Maister, 1993; Nordhaug, 1993).

The importance of meeting the client face-to-face implies that not only does type of assignment influence CD, the actual collaboration with the client is also crucial. CREO prefers open-ended assignments. Such projects are primarily gained from clients with whom they have established a relationship of trust. This implies that the long-term clients are important to strategic development. CREO has a large pool of recurrent clients. This indicates that CREO has a client base which represents a positive potential in terms of gaining projects with open-ended requirements. This also indicates that the networks CREO has developed represent important sources contributing not only to project assignments, but also to assignments which involve high degrees of CD. In addition, new clients are also gained through networks. Therefore, breakfast seminars may be good investments, even if effects on CD are minor.

Based on these findings, it seems as if people in CREO develop competence together with colleagues, together with clients, and together with people external to the firm such as e.g. members of the Idea Board. This shows that *collective* processes stand out as the primary way by far in which professionals in CREO develop competence through daily operations. Hence, learning individually has little place compared to learning collectively, particularly in the project team. According to Løwendahl (1997), high reliance on team based organizing is central to a creative problem solving based generic strategy. The emphasis on team based collectivity to CD, thus, seems to be in line with CREO's generic strategy on this point.

Based on the above analyses of investments in CD on the one hand, and CD through daily operations on the other, the following section brings the two routes together through a focus on aspects identified to facilitate or constrain CD in CREO.

#### **4.2.5. CD facilitators and constraints**

All employees, be it designers and consultants, agree that learning by doing based on team work of actual service delivery is most important to CD compared to investments in CD. Hence, the most important CD facilitator in CREO is learning by doing in project work. Secondly, collaboration with colleagues representing diverse competence and experience is highlighted. Further, the professionals do not only learn from colleagues; meeting the clients face-to-face also facilitates CD. The high degrees of learning by doing further seem to relate to the process approach and the complex niche services CREO offers. In addition, the firm deliberately utilizes a good market position to pursue large companies and create assignments assumed to represent both profit and opportunities for CD. In addition, competent clients and assignments with open ended requirements facilitate CD.

In CREO, CD is primarily regarded an individual responsibility based on personal initiatives for both individual updates as well as collective efforts. Personal initiatives are made towards different settings including personal on the job updates, internal development arrangements, and external course participation. Management supports the realization of such initiatives. Nevertheless, CREO also provides several organizational efforts to improve the resource base such as Traffic and the Breakfast seminars. These efforts, however, seem to be of less importance compared to the internal development arrangements. The reliance on internal forces seems motivated by the broad heterogeneity in people's backgrounds combined with their seniority. This implies that there is a large potential for varied learning among the employees based on their highly different experiences. On the other hand, since CREO is a small firm, there is also a need for bringing in perspectives from people outside the firm, e.g external courses. Particularly, the interaction between external people of the Idea Board and the CREO employees facilitate CD. As a small firm, CREO appears to run a lot of support development activities beyond the assignments. Still, employees ask for more formalized and planned CD.

The most powerful constraint to CD is claimed to be high time pressure in projects. This is due to client demands and top down expectations of high work pace and high work quality. As a result, time pressure and heavy workload constrain opportunities to reflect upon work processes and share competence developed in single projects throughout the firm. Consequently, by prioritizing client assignments, the time to pursue efforts to develop competence beyond projects, is seen as too limited. Further, tough critique of ideas is emphasized as a constraint to CD, as it leads to a work culture ambivalent with regard to courage on the one hand and reluctance to launch new ideas on the other. In addition, little systematic team staffing and unevenly distributed work-load are also considered negative to CD. In other

words, the empirical material shows that CD is facilitated through learning by doing in project work, whereas at the same time constrained by the lack of time in projects. CD is facilitated through learning from diversity, but at the same time constrained by the tough critique from colleagues. As a result, it seems as if collaboration with external people such as clients and networks facilitates CD, whereas the largest constraint to CD seems to come from within the firm in terms of high work pressure and tough critique. Table 12 summarizes the CD facilitators and constraints highlighted in CREO.

*Table 12. Facilitators and constraints to CD in CREO*

	<b>Investments</b>	<b>Daily operations</b>
<b>CD facilitators</b>	<ul style="list-style-type: none"> <li>-Internal development arrangements</li> <li>-The Idea Board</li> <li>-External courses</li> <li>-Personal CD initiatives</li> <li>-No brakes regarding financial support from the firm</li> </ul>	<ul style="list-style-type: none"> <li>-Learning by doing</li> <li>-Team collaboration</li> <li>-Competence diversity</li> <li>-Meeting the client face-to-face</li> <li>-Meeting the client together with colleagues</li> <li>-Competent clients</li> <li>-Open-ended client requirements</li> <li>-Good market position</li> <li>-Exciting assignments</li> <li>-Complex services and process approach</li> </ul>
<b>CD constraints</b>	<ul style="list-style-type: none"> <li>-High time pressure</li> <li>-To the degree that Traffic does not function as intended, this can be seen as a constraint to CD</li> <li>-Personal CD initiatives vary</li> </ul>	<ul style="list-style-type: none"> <li>-High time pressure and high client priority reduce time for competence sharing</li> <li>-Tough critique</li> <li>-Control culture</li> <li>-Costs prevent team members from frequent client contact</li> <li>-Few guidelines for team composition</li> <li>-Designers experience fewer opportunities for CD compared to consultants</li> </ul>

Building on the empirical material discussed so far, it is relevant to ask what kind of competence is developed through the processes emphasized to facilitate CD. A further elaboration of what is learnt follows in the next section.

#### **4.2.4. Type of competence developed**

As discussed earlier, people in CREO seem to develop firm specific competence (Nordhaug, 1993). But, what kind of competence is that? In



order to understand the firm specific competence of CREO, one needs to understand the way they work. All tools, models, and methods CREO uses are developed and enhanced within the firm. Typically, the projects go through many of the same steps. This is due to the method which underlies the thinking and acting in CREO.

According to the CEO, the projects consist of different phases. Typically, there are phases of research, gap analysis, strategic issues, communication, and concretizing. During these phases, a lot of material is gathered and analyzed, and important issues are sorted out for further processing. There are many considerations, discussions, and choices to make in order to determine how to proceed and what to proceed with. For example, where are the gaps, are the results trustworthy, what are the consequences, what is the meaning of the concepts used, how specific are they in terms of practical relevance and possibilities for successful communication, what is the relationship between reputation, values, and visions, how can goals and strategies be clarified and prioritizations made between competing issues? Based on these processes, the necessary tools are customized and developed, and client representatives are trained in how to use the tools. *“Relevant training is a condition for real change of intended direction”*, says one consultant. Based on the way assignments are carried forward and the processes during which services are developed and customized, competence related to the particular project method is important. Hence, what can be termed ‘project competence’ seems to be a vital part of the firm specific competence in CREO. In this respect, learning how to deal with the process based approach is crucial, as illustrated by several of the above quotes. Hence, what can be termed ‘process competence’ is a central competence developed through project work in CREO. These competences seem to relate closely to the particular competence demands of CREO.

In these processes, weight is put on creativity and diversity as facilitators for the creation of ideas. Nordhaug (1993) questions to what extent creativity can be learned or developed. If the ability to be creative is looked upon as an aptitude, this implies that the firm will have to search for persons who already have this talent. However, in CREO, creativity seems to be regarded as a special ability necessary to perform work-related tasks. The view in CREO is that creativity can be fostered and nurtured through an encouraging firm environment and a mix of very diverse employees, supported by networks of highly creative people. Hence, creativity is seen as a skill which can be developed as well as an aptitude. Thus, competence related to creativity, or what can be termed ‘creativity competence’, also relates to the process competence in CREO. In addition, knowledge of communication, strategy, organizational culture and business mechanisms, pedagogy and

individual behaviour, seem to represent important aspects which are intertwined during the different project phases.

Further, the firm specific competence is closely connected to each client's needs and the particular client organization. The customization part of each project is derived from the special challenges of each client. It is in terms of these challenges that the creation of ideas is prominent. In order to develop processes that help the clients realize their goals in terms of reputation through clear and meaningful communication of the company's visions and strategies, knowledge of the client firm is essential. According to the informants, CREO has many clients they have worked with for many years. This way, "*we have learned to know the company well and established good relations with key client individuals*", says one consultant. Also, the importance of meeting the client face-to-face illustrates competence gained from client meetings. Thus, what can be called 'client competence', i.e. competence about the client, is developed based on the close involvement of clients in the service delivery processes.

In light of competence ownership and control (Løwendahl, 1997), the high degree of team based learning combined with single individuals' special competence, indicate that the competences developed in CREO are both individually and organizationally controlled. However, due to the use of diversity as a source to spark new developments, the emphasis on investments in collective competence, and the importance of understanding the "basic model" through learning by doing under informal guidance by experienced people who have been in the firm for many years, the organizationally controlled competence seems to stand out. This notion is further strengthened as diversity in combination with organizationally controlled methods and models seem to enable the professionals to work together for a higher joint value than what could have been created by summing the individual competences. Further, based on the many years it takes to really understand the process based services and way of working in CREO, as well as the substantial effort required by the experienced professionals to guide and advise newly hired people through learning by doing in real work practice, it is likely that these elements also enforce newcomers' commitment to the "way of doing things" in CREO. In addition, due to the complexity of the process work and the particular combination of people, the collective competence created is likely to primarily represent value when utilized in relation to CREO, as these processes and practices seem difficult to copy. Therefore, the competences developed in CREO are both individually and collectively controlled, however, with a predominant emphasis on the latter.

As a result, people in CREO seem to develop ‘firm specific competence’, which particularly relates to ‘creativity competence’, ‘project competence’, and ‘process competence’. In addition, ‘client competence’ is important. Finally, the competence developed is primarily organizationally controlled, but also to some degree individually controlled.

Next, based on the analyses thus far, a ‘creativity dominant CD process’ is suggested as the way in which CD takes place in CREO.

### **4.3. A creativity dominant CD process**

It is argued that CD in CREO takes place primarily through collective processes of team-based learning by doing in project work. In CREO, there is a high focus on creativity and exploration in favor of exploitation (March, 1991). Learning from challenging assignments is combined with training based on collaboration and inspiration from external networks. The learning processes are highly firm specific and primarily take place internally in the firm. CD through client interaction plays a crucial role in the CD process. Hence, the creativity and process based approach seems to dominate over the client and solution based approaches (Løwendahl, 1997). As a result, it is suggested that CD in CREO takes place through what can be termed ‘a creativity dominant CD process’. This approach seems to be well in line with CREO’s generic strategy, given the focus on innovative and highly customized services to large client companies offered by experienced people. The ‘creativity dominant CD process’ in CREO is summarized in table 13.

Table 13. CD process in CREO

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<b>Creativity dominant CD process</b>	
<b>CD policy</b>	Person-to-person approach. Top down pressure on CD is quite low. A clear reliance on individual initiatives.
<b>Investments in CD</b>	High emphasis on developing and maintaining good relationships with external networks for CD purposes, e.g. the Idea Board. Primarily internal training with a high degree of externally invited people. High emphasis on competence diversity also with regard to external people. No reliance on IT.
<b>CD in daily operations</b>	Primarily collective through learning by doing in (i) team work together with colleagues with highly diverse competences, and (ii) through interaction with competent clients, based on exciting assignments which demand high degrees of exploration and creativity.
<b>Type of competence</b>	'Firm specific competence' of 'creativity competence', and of methods and tools which particularly relate to 'project competence' and 'process competence'. 'Client competence' is also central. Competences are organizationally and individually controlled, however, with a primary emphasis on the former

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Given the classification of CREO as a creative problem solving based firm pursuing a creativity dominant CD process, there is reason to expect high emphasis on CD in order to enable the delivery of highly customized services to clients. There are indeed attempts to value CD highly in CREO. However, in daily work of high time pressure, clients tend to come first. This creates a dilemma for the workers of CREO, as further analyzed below.

#### **4.4. Good intentions and fine arrangements, but clients first**

In light of its quite small size, CREO puts aside, orchestrates, and uses relatively substantial resources on CD. In particular, people in CREO are good at developing internal, firm specific competence, which is also in line with the firm's strategic position. In this respect, the Idea Board seems to be well functioning. Beyond serving as a CD facilitator for employees, it looks as if the Idea Board also can be seen as a kind of "namedropping", useful for marketing purposes. Mainly, well-known, quite famous, people (e.g. artists, photographers, philosophers, etc.) are invited to join the Idea Board. They get paid to participate. There is little doubt that the Idea Board is a source of inspiration for CREO employees, and that it has contributed to the development of creative solutions – not least where these have first been tested out on a rather critical panel of creative people. This gives assurance, courage, and support for people to stretch themselves a bit further in the next

round of projects. Hence, the Idea Board seems to serve at least two important purposes, to contribute to CD for CREO professionals and to contribute to a positive profile for the firm by showing that people in CREO are capable of attracting and working closely with recognized academics and artists.

Even though CREO uses a lot of resources on CD, and even though management and employees are very aware of the importance of developing their competence, yet, when time is too limited to do both CD and client projects, the latter gets first priority. This may not be very surprising, given the business model of the firm, as well as its relatively small size. After all, CREO is dependent on invoicing in order for the business to go around, as all other firms. On the other hand, one can argue that degree of invoicing is a matter of making priorities and dispositions as well as to take out less of the profit for salaries etc. However, salaries in CREO are not high compared to other comparable companies. The partners direct money back into a competence budget for future use on individual competence development. And much of the profit is channeled back into the firm as a “buffer” in order to reduce vulnerability related to market fluctuations and the like. This way, the purpose is not to be forced to take on projects they think are wrong for them.

Anyhow, despite good intentions and fine arrangements for CD, when time pressure is high, a dilemma appears between what to prioritize – clients or CD. The data shows that informal learning by doing in the everyday activities of project work facilitates CD. On the other hand, high time pressure due to high client priority constrains CD. As a consequence of high priorities of client work (in order to be profitable), CD in daily operations is seen as ad hoc and leads to a wish for a stronger emphasis on such development. People are supposed to, and do develop competence through project work. Yet, some ask for more planned CD beyond the projects through more formalized training. On the other hand, since people are primarily spending their time prioritizing clients, there is little room for CD beyond client assignments. In such a context of high time pressure, high client focus, and insufficient emphasis on the informal CD, people find themselves squeezed on time between serving the clients *and* keeping up in terms of developing competence in relevant areas of work. As a result, CD can be portrayed as a conflict between (i) billable hours in project work on the one hand, and (ii) non-billable training and development through support activities on the other. This relationship of tension can be described as ‘the billable hours versus formalized training dilemma’.<sup>39</sup> In such a setting, the

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<sup>39</sup> The word ‘dilemma’ is used here as an illustration of what may seem as a contradiction. A distinction is made between a dilemma and a problem. Problems

professionals are caught up by a “tyranny of billable hours” (Løwendahl, 1997) in practical work, as more systematized CD will also take time and effort away from the billable hours reflected in the income of the firm. Together, this also seems to illustrate a conflict between short-term and long-term concerns.

This analysis shows that there are indeed good intentions and good arrangements for CD in CREO. But, in between, CD activities get crowded out - because when squeezed between prioritizing internal CD or client projects, the projects win. After all, income based on pleased clients is crucial to keep the business going in the first place. However, prioritizing CD can be crucial to stay competitive in the long run. A challenge, thus, seems to be to balance the dilemma of needs for a sound income with needs for CD.

#### **4.5. Summary**

This chapter has presented and analyzed the findings of CREO. It is suggested that CREO pursues a ‘creative problem solving based generic strategy’ in general and a ‘creativity dominant CD process’ in particular. The CD process of CREO is characterized by a strong focus on creativity and process development, competence diversity, learning collectively, internal training, and firm specific competence. Although CD is emphasized in the firm, as shown through a strong focus on such processes as well as the relatively many (and otherwise billable hours) spent to enhance competence, people also struggle to balance the dilemma between prioritizing CD *and* at the same time keeping client project deadlines.

Next, attention is focused on TEKNA.

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have solutions, whereas “*dilemmas are conflict-filled situations that require choices because competing, highly prized values cannot be fully satisfied*” (Cuban, 1992:6). Dilemmas then, “*end up with good-enough compromises, not neat solutions*” (Cuban, 1992:7). Hence, for dilemmas, there are few precise answers, and any dilemma holds both advantages and disadvantages. This resembles how the informants portray CD as a dilemma: Project work is too time consuming to allow as much time as people would want to spend on training as a supplement to learning in projects.

## 5. TEKNA

This chapter presents the empirical findings of TEKNA. First, the company's value creation components and type of generic strategy are addressed. Second, the CD process is attended to in terms of (i) CD policy, (ii) investments in CD, (iii) CD through daily operations, (iv) CD facilitators and constraints, and (v) type of competence developed. Third, based on this material, a 'functional expert dominant CD process' is suggested as the way in which competence is developed in TEKNA. Fourth, further analysis shows that what is being said is not necessarily what is being done in terms of CD. Finally, the empirical findings of TEKNA are summarized.

### 5.1. Value creation

According to the VCPs of PSFs-framework (Løwendahl, et al., 2001), choices regarding domain, service delivery, and resource base are important to determine a PSF's value creation logic, and, thereby its generic strategy. Empirical material on these issues is based primarily on written material and interviews with managers.

#### *Domain choice*

TEKNA is a consulting engineering company which carries out multi-disciplinary technical economic and social consulting services (TEKNA web site). In marketing material, TEKNA is presented as a firm where its particular advantage is the large number of senior advisors who are among the best in the country in terms of expertise within their respective engineering areas (TEKNA web site). Based on expertise and quality, TEKNA offers services within a number of different market areas, covering all phases of a project cycle, from the earliest pre-investment studies and feasibility phases, through project implementation, to the actual operations and maintenance phases, including institutional development and strengthening of the client's organization. The firm competes for small and large projects, both as a big multi-disciplinary firm, as well as division and section wise in terms of specific functional assignments. TEKNA operates in an industry where most projects are awarded after bidding processes and tough negotiations. Tender competition is often based on (the lowest) price. Thus, opportunities to choose among projects and turn down less interesting assignments are few. To the contrary, TEKNA sometimes takes on smaller and less profitable projects as potential investments in order to get access to interesting work in future assignments.

Preferred projects involve functional challenges, large multi-disciplinary teams, and a substantial amount of time for exploration and development. However, many projects are small and often depend more on “exploitation” of existing techniques and established project management routines. The firm handles around 3000 projects per year. Assignments range from less than 5000 NOK to several million, and from one day to many years. Clients come from both public and private sectors. Typically, TEKNA is involved in large, high prestige, public projects for which there is a very limited number of similar constructions, and which require advanced technical expertise. In addition, particular demands, e.g. in terms of innovative environmental requirements such as energy-saving or recycling, often contribute to the uniqueness of a construction. Further, TEKNA’s R&D activities have over many years received support from the Norwegian Research Council. In collaboration with external partners, such as the technical university in Trondheim, TEKNA uses research based solutions to e.g. enhance safety in tunnels or to create new methods for designing bridges with underlying curved constructions.

#### *Service delivery*

Service delivery spans from the preparation of master plans to the execution of detailed tasks. The aim is to improve the clients’ business and safeguard their investments. For example, within energy, TEKNA offers development, implementations, operation, and rehabilitation of energy production facilities such as hydropower plants, dams, transmission systems, and gas power plants. In this respect, special competence relates to underground facilities, commercialization of power utilities, and mixed power systems. Within transportation, the planning of roads, bridges, tunnels, harbours, airports, and railways is central. The construction of commercial buildings includes development planning, construction technique, soil mechanics, electrical engineering, water and drainage pipelines, as well as operations and maintenance. Whereas for environment and water, emphasis is on water supply systems and development, wastewater management, and pollution control. These few examples illustrate the wide variety of the services TEKNA offers, as well as the particular competence needed to carry out the assignments. Projects are run by a project leader with project co-workers selected for each assignment. In addition, a project responsible has the overall responsibility for the project. This person is usually the section manager, or the division manager if it is a very large project involving several sections in a division. Project teams consist of people within one functional field as well as from several divisions and sections. All managers, except the top management team, also work in project assignments. The core business of TEKNA, planning and carrying out projects, is to be done within the relevant requirements of ISO 9001. This quality system is based on a main process for each project: Proposal and contract, start up, execution, and



close out. However, as clients vary with regard to needs, localization, organization, culture, and routines, services require both standardization and creativity in order to meet individual client needs (TEKNA web site).

#### *Resource base*

As illustrated, the professionals in TEKNA cover a rich multitude of engineering disciplines, some of which evolve more rapidly than others. They operate within ten different divisions, each with their own management, deliverables, and organizational roles. Several sub-sections are connected to each division. The divisions represent different professional areas. TEKNA has a mixed competence base of both juniors and seniors. The firm hires juniors straight out of technical university and seniors with substantial experience. The large majority of employees are trained at NTNU (the technical university) in Trondheim. Many seniors have either been with the firm for many years or have come into the firm through mergers and acquisitions. Seniors represent at least two different kinds of competences, one predominantly generalist, but with some specialization in certain areas, the other predominantly specialist, but with general competence in several broad areas. The firm tries to develop both types, but with an emphasis on the generalist approach.<sup>40</sup> In addition, competence in project management is of importance for project leaders. Junior employees generally start out working within the field of their university specialization. Because TEKNA seeks to reduce the average age of its employees, which is quite high, most new hires are young graduates or people with a couple of years of previous work experience within engineering. The firm has a policy on recruiting only the best university graduates “... because such candidates show strong analytical skills and are able to learn fast” (division manager). Therefore, TEKNA keeps a close relationship with the technical university for recruiting purposes. Many of the professionals hired maintain close connections to their alma mater, as well as their classmates. At the time of the interviews, TEKNA developed databases for the sharing of competence among employees.

Based on these three components for value creation, a generic strategy for TEKNA is suggested.

#### *Generic strategy in TEKNA*

Compared to Løwendahl's (1997) three generic strategies, TEKNA primarily seems to resemble elements of the output based and problem solving based generic strategies. In favour of the former strategy, a large engineering company like TEKNA naturally has many projects which follow a standardization or procedure type of logic (Maister, 1993). Further, the firm

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<sup>40</sup> The generalist-specialist distinction refers to functional competence.

also seems to have a strategic focus on target market in combination with projects or problems. On the other hand, TEKNA's emphasis on expertise and assignments of innovation and high service complexity points in the direction of a problem solving strategy. In addition, the firm seems to enjoy a long standing reputation in the market based on good client relationships. This indicates that elements of a client relations based strategy are also prominent in TEKNA. However, the firm's recruitment of civil engineers<sup>41</sup> with top academic results, its R&D activities, and the close collaboration with the technical university, primarily support a problem solving type of generic strategy. In addition, TEKNA is employee owned, and uses peers and experts at universities as important reference groups in technical developments. According to Løwendahl (1997), firms representing a problem solving strategy are often characterized by internal ownership and reliance on academe/peers as their primary reference group. Further, the emphasis on technical advanced expertise within quite restricted areas of engineering, suggests a high degree of individually controlled resources. On the other hand, the generalist approach calls for more collective ownership. The ISO 9001 system and the databases illustrate that TEKNA also relies on organizationally controlled resources. Such a mix of both individually and organizationally controlled competences further supports a problem solving based approach (Løwendahl, 1997). Based on these elements, it is suggested that TEKNA predominantly resembles a creative problem solving based generic type of strategy, as summarized in table 14.

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<sup>41</sup> The distinction between 'civil engineer' and 'engineer' in this study needs further clarification. 'Engineer' refers to a graduate with three years of education (in Norwegian: ingeniør), whereas the term 'civil engineer' (in Norwegian: sivilingeniør) refers to people with a MSc degree, now standardized to a five-year program (formerly 4.5 years). Hence, the term 'civil engineer' in this study does not correspond to the common usage of civil engineer in English, which relates to a particular type of building/construction engineer - in Norwegian "byggingeniør".

Table 14. Generic strategy in TEKNA

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<b>Creative problem solving based generic strategy</b>	
<b>Domain choice</b>	Offers technical-economic consulting to public and private sector clients in Norway and internationally. Seeks challenging, "one of a kind" assignments with a substantial potential for innovation and functional learning.
<b>Service delivery</b>	Both exploration and exploitation based services. <sup>42</sup> R&D activities are used to develop innovative services.
<b>Resource base</b>	Experienced professionals and newly educated graduates with top academic results. Mainly civil engineers representing various engineering disciplines. Both individually and organizationally controlled competence resources.

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With the suggestion of TEKNA as a company representing a creative problem solving based generic strategy as a point of departure, the next section addresses the firm's CD processes.

## 5.2. Competence development

First, CD in TEKNA is explored by looking at CD policy, i.e. what is done from the firm's side in terms of approaching and orchestrating CD. Data is primarily based on written company material as well as interviews with managers. Second, the question of how people in TEKNA develop competence is investigated according to investments in CD, followed by CD through daily operations. Data is primarily based on interviews with managers as well as regular employees representing different sections and divisions in the firm. Fourth, CD facilitators and constraints are pointed out from a joint view on the two routes to CD. Fifth, the type of competence developed is addressed. Based on these investigations, the way competence develops in TEKNA is suggested.

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<sup>42</sup> It is important to note that the extent to which exploitation and reuse strategies are utilized is seen relative to the PSFs studied, not to the entire population of business firms. Compared to a traditional manufacturing firm or a standardized service firm like McDonald's, TEKNA would be classified as relying relatively little on exploitation.

### 5.2.1. CD policy

In written materials such as annual reports and policy documents, intranet postings and e-mails to all employees, the top managers in TEKNA emphasize competence development as crucial. The firm's Competence Policy document pins down the following internal and external competence efforts through which CD is stated to take place.

Internal competence efforts:

1. Learning through demanding project tasks. Sharing of knowledge, collaboration with colleagues, participation in multi-disciplinary projects, sharing of experiences - where employees are "intensely" engaged through the project period, and in this way stimulated for functional update. It is emphasized that employees succeed in creative use of their functional knowledge and flair for business.
2. Knowledge sharing. Organize for the use of available competence/sharing of experience in the organization. This includes carrying out assignments in line with routines and methods which enable employees to deliver quality services.
3. Jobrotation. Participation in various multi-disciplinary projects, participation in different project types etc. Employees shall through intern mobility within own division and the firm as a whole expand their experiences and thereby strengthen their competence.
4. Competence goals and career plans in the largest assignments. In large assignments, competence goals will be set up during the project period. If possible, the assignments should be planned for the development of "junior personell" into functional expert and/or manager.
5. Competence development for international assignments. The company will provide several younger employees with the training necessary to work on projects abroad.
6. Functional seminars. In order to develop and share competence between multi-disciplinary assignments, there will be current updates on functional seminars conducted by each division. Employees from other divisions are encouraged to participate.
7. Management training programs. The company provides training in terms of management positions and project management.
8. Recruitment of new, qualified employees in line with established routines.
9. R&D. We will seek to develop future-oriented expert knowledge by bringing in cutting edge technology, adapting to new market challenges, and collaborating with clients, research institutions, and universities. Goal: Provide particular competitive advantages.
10. Courses. Training efforts, seminars, and courses internally and externally. The company encourages its employees to take on the "teacher role" in various settings.

External competence efforts:

11. External courses. The firm will support external course participation as part of employees' competence development plans.
12. Alliances. Establish and develop alliances/collaboration with other firms/people.
13. Within particular functional areas, the firm will stimulate and support further education and Ph.D. studies (Competence Policy, 1999).

In addition, the Competence Policy document states that the firm expects *initiatives* from single employees directed towards personal learning – within the best interest of the firm, as well as motivation to improve an employee's own projects, section, and division. It is further expected that individuals take *responsibility* for their own performance, attitudes, and behavior. This includes contribution to economic results and reputation in single assignments as well as to the firm as a whole.

Points one through four primarily concern CD in daily operations, whereas the rest primarily concern investments in CD. Overall, however, these activities lack systematization and coordination. Therefore, at the time of the study, TEKNA was trying to establish plans for systematic career development. Here, the appraisal dialogues are central. According to the Competence Policy document, one objective is to conduct annual appraisal dialogues with all employees, during which individual competence plans are to be developed. The individual employee and his/her leader are both responsible for implementing the CD efforts being concluded on. At the recently developed competence portal on the intranet, one of the top managers declares:

“We are now doing a major lift in order to systematize our competence development. This includes the establishment of an educational package which consists of several modules, where a main module - The TEKNA School - will make up 10 credits in the official university system. In addition, plans include mandatory courses for all employees, as well as running courses and seminars especially designed for TEKNA. All employees are to establish a competence plan anchored in the needs of the company and of the single individual. Based on the needs emerging from the competence plans, the firm will arrange collective competence activities” (manager, top management group).

Further, TEKNA was also in the process of developing databases for storing and retrieving information about previous projects and procedures. Documents such as the firm's Competence Policy, the Personnel Handbook, and a Competence Catalogue showing the competence of each employee, are to be electronically available through the firm's intranet. However, despite

these efforts, the basic principle in TEKNA is that professionals are supposed to learn through project work. For example, after the information about the educational modules cited above, the following reminder is printed in large letters: “BUT REMEMBER, THE MOST IMPORTANT LEARNING ARENA IN TEKNA IS OUR PROJECTS. TO DEVELOP THROUGH DIFFERENT ROLES/POSITIONS IN THE PROJECTS IS THE PRIMARY ARENA FOR COMPETENCE DEVELOPMENT” (intranet portal).

The reason behind this increased emphasis on competence development is to prepare for future competition. A previous statement from the CEO provides an example: “*We believe that TEKNA has a structure which makes us well suited to effectively solve small and large projects, nationally as well as internationally. Rather than competition for assignments, competition in the near future will consist of attracting and keeping competent employees*” (Annual Report, 1997). Hence, recruitment becomes central. This is further emphasized in an e-mail sent from one top manager to all employees, which elaborates a minute from a top management meeting in 1999. Here, the managers worry that in the future, it will be a lack of the type of skilled labor TEKNA needs. The concern is based on the low birth rate around the years of 1980, which suggests a noticeable decrease in the number of university graduates around year 2005. On this basis, the content of the e-mail states that: “*The competition for the best employees is likely to get tougher. TEKNA needs to prepare for such a scenario. As a result, among several efforts, competence development of single employees will be central. The future employee is likely to expect that the firm has a policy and a system for competence development through tasks etc. We are now trying to organize this work. In addition, we need to develop tighter connections with the technical university*” (manager, top management group).

With such focus on competence development, what are then central areas of competence at TEKNA? According to the Competence Policy document, TEKNA’s business activity and competitive power depend on deep as well as broad competence in the following areas:

- Management competence directed towards personnell management, marketing, project management, corporate governance, functional development, and an understanding of the totality.
- High technical/economic competence of the core areas of the different business units.
- Competent use of IT-tools integrated in the assignments.
- Understanding of culture and communities domestically and abroad.
- Ability to communicate. Social intelligence (Competence Policy, 1999).

Further, competence development can pave the way for different career paths and roles. According to the Competence Policy document, these include:

- Functional expert
- Business oriented project leader
- Project co-worker with general competence
- Manager (section, division, top management group)

However, project leader and/or functional expert represent the primary career paths at TEKNA (Competence Policy, 1999).

According to the 1999 Annual Report, TEKNA spent 15 mill. NOK on competence development during the year. These costs included various training efforts (9 mill.) and R&D (6 mill.), which represented around 2,5 % of that year's turnover.

Given these statements and actions undertaken by the management in order to orchestrate CD, there is a strong emphasis on knowledge sharing in projects as the most important arena for learning. More specifically, this refers to knowledge sharing among people in the projects as they carry out assignments. IT is not mentioned as an important part of knowledge sharing in projects. Rather, IT, such as databases and the intranet portal, seems to be used as support activities for the main CD approach. In addition, the firm relies on collective activities such as internal and external courses. Further, it is seen as important to CD to nurture and keep good relationships with university experts within the functional engineering disciplines regarded central to TEKNA. This appears to relate to the firm's high emphasis on the development of functional expertise, which is an important career path. As a result, in the terms of Hansen et al. (1999), it seems as if TEKNA primarily orchestrates a *person-to-person approach* to the development of competence. However, with the use of IT as an intended supplement which is still in an early phase of development. In comparison, the other approach referred to by Hansen et al. (1999), the *people-to-documents approach*, seems to be of relatively little importance to the learning process in TEKNA.

Building on this material of CD policy, it is relevant to find out how competence is actually developed – according to both managers and employees. Hence, the next section focuses on professionals' CD in terms of investments.

### **5.2.2. Investments in CD**

While there seems to be a strong focus on CD investments from the top management side, the informants regarded such efforts as at an early phase

of development. The responses from the informants centered around these issues: 'IT', 'internal forums and external courses', 'training programs for international assignments', and 'individual initiatives'.

### *IT*

Whereas the top managers express high expectations connected to the IT-platform the firm is about to develop, another manager was more sceptical towards IT as a tool for enhancing CD. He compares competence with an iceberg, and says: "*The "stuff" on the surface is easy to formalize through computer systems. But beneath, there are a large number of interactions, which are impossible to formalize. And, it is here most of the competence sharing happens. I sometimes wonder ... wouldn't we be better off with more coffee makers, rather than more computer software?*" He continues by explaining how these diffuse processes contribute to CD simply through the fact that people speak together: "*Maybe the "crazy" stories about mistakes, rather than the procedures listed in handbooks, are easier to remember and learn from. They are as important as the formal systems, and much more complex than a file structure. I'm afraid fancy IT tools only "release" us from another bad conscience*" (division manager). According to this informant, experiences in TEKNA are primarily shared in the corridors, when colleagues meet and talk about their projects. For example when a consultant drops by the neighbor's office to get help with a problem, and they discuss how the colleague handled a similar job previously.

This view points to the importance of informal CD, processes which are fluid, fluffy, and not so easy to formalize – or even take notice of. In contrast to the top management's emphasis on IT, this informant questions whether it may be more beneficial in terms of CD to orchestrate for more informal meeting places compared to heavy investments in expensive databases and technology. Since only one of the informants was very specific on this subject, the weight of this view as well as potential prevalence among other colleagues cannot be ascertained based on this empirical material. However, the response points to the existence of critical objections towards company actions. In addition, the objection is raised by a division manager who has been with TEKNA for many years, and who claims to know the firm well. Hence, the disagreement regarding the benefit of the major investments in IT on learning and CD between one division manager and the top managers is, at least, noted. In comparison, all informants emphasized internal forums and external courses as important to CD.

### *Internal forums and external courses*

With its many employees, TEKNA has a lot of experience in-house which it tries to utilize in what informants refer to as 'forums'. Says one functional expert: "*What we often do in order to enhance our competence, is that we*



*teach courses for others within our areas of functional expertise, in-house*". Most divisions and sections have a functional forum where they meet and discuss issues connected to the programs and the projects they work on. It is claimed that these efforts are valuable to learning. One example is 'technical lunch' once a week. Another is the 'CAD forum'. However, *"the CAD forum used to have regular evening meetings once a month, but this has not been prioritized lately because of high time pressure"*, says one project co-worker. Too little time is pointed out as negative to CD initiatives. The CAD forum was started by a professional with extensive CAD experience. Evening meetings like the CAD forum are open for people interested in the topic, and based on volunteer participation. Hence, the degree to which such efforts contribute to CD, depends to a large extent on individual initiatives and involvement. This is further underlined by the following quote from one of the section managers: *"As long as people show interest in engineering and things we can conduct business on, they can more or less choose direction themselves"*. It is a personal responsibility to show interest in maintaining competence in the chosen areas, be it in terms of courses or spending time getting familiarized with a given subject. *"Nobody runs after people and makes sure everybody gets the courses they should"*, says another section manager.

However, opinions seem to differ between project co-workers and managers with regard to actual opportunities to get acceptance for initiatives, particularly with regard to participating in external courses. For example, when asked about willingness to invest in courses, a younger co-worker is highly sceptical. *"What would it take for you to be allowed to go to an external course, then?" "Oh, then, I would have to beg very hard. In fact, I have tried, but so far without any luck"*, he replied, indicating that such permission is extremely difficult to get. However, his manager is of a different opinion, as in this quote:

*"Of course we allow people to attend the courses they want. Such requests don't come up very often, maybe once every year-and-a-half, so it's no big problem. The challenge is to find time. In our division we have quite a big budget allocated to courses and competence development, but as a matter of fact, we find it difficult to spend all the money"* (division manager).

Another co-worker within a small functional field of few experts says: *"We don't easily get out on external courses, but we are more than welcome to go as speakers. I'm often invited as a lecturer at seminars, and, then, I also pick up on issues raised by others"*. TEKNA strongly encourages its employees to give speeches both for competitors and employers externally. Yet, it seems as if the high reliance on in-house resources leads to restrictions with regard to participation in external courses, at least seen from the project co-

workers' point of view. Several of them see the restrictions on external course participation as negative to CD. On the other hand, each of the informants easily recalled several external courses they had been to. Nevertheless, in addition to the in-house resources, particularly co-workers would like more input from external sources because they say they also learn a lot from people outside their own firm. According to one of them, the reason why TEKNA relies so much on internal resources is not only because the firm is big and has a lot of expertise, but also because there is "*a prevailing attitude among many seniors that TEKNA is the best*". The firm is by many seen as the leading engineering design firm in Norway and has received a lot of "bragging" over many years. The informant continues:

"I think some have fallen asleep at this level, and think that we are still the authority in the market. Since we are so good, why should we look to others? They need to wake up and realize that there are many very capable actors out there. Many of the old people here represent such a philosophy, because they have been doing this for so many years and have a special expertise which is highly acknowledged by clients. Then, they think for themselves that they know everything. But that isn't true for the whole firm" (project co-worker).

Another aspect with regard to future competence relates to the distinction between juniors and seniors in the firm. The data indicates that some of the seniors have "fallen asleep" with regard to the efforts needed in order to develop the competence necessary for future competition. In this respect, developing junior competence is crucial in a long-term perspective. This indicates that TEKNA has a challenge with regard to maintaining and further developing competence for future competition throughout the whole firm. This is particularly crucial as the company's current income is largely based on the expertise and networks of seniors who are close to retirement. This quote also indicates that there seems to be a culture in the firm, which is not particularly receptive in terms of getting impulses and learning from people outside TEKNA. Further, at the same time as people express a need for more external courses there is probably a risk of under reporting CD investments. This seems to be the case because many training and CD initiatives are small, and rarely show up as specified items on budgets. Some of the informants expressed difficulties in spontaneously remembering CD activities they had participated in. For example, a functional expert suddenly remembered that when he said there were few investments in training and course work, as opposed to "on-the-job learning" during projects, he had forgotten that he had been given a budget and a number of hours to train his colleagues in a particular simulation technique. This effort was approved by the division manager and implemented. A few months later, the employee was immersed in other activities, and the fact that this was an investment in CD was, at first, forgotten. This illustrates the danger of overlooking the

past, as talking about CD may favor recent activity (Cohen & Levinthal, 1990).

An example of a major internal CD effort conducted lately is training for international assignments.

#### *Training program for international assignments*

From a previous merger, TEKNA has an international division. However, there seems to be quite clear boundaries between the international and the national operations and between the people in the two. One of the younger consultants says that in the beginning, he did not dare to ask “*those international guys for help*”, as he had too much respect for them. However, many of the younger employees strongly want to work internationally. But since the client typically determines the requirements and often demands professionals with 15 years of experience, preferably from international projects, it is very difficult to get involved in the first place. Therefore, TEKNA started a program for younger people to be trained for international projects. Two of the informants had participated in this course. The informants were positive to the courses and evaluated them to provide useful learning.

After the training, they were supposed to get the opportunity to work abroad for a trial period. However, this was not implemented as planned. Only a couple of the about dozen participants got to work abroad. Says one participant: “*Several of us tried to find out what was going on. They (the managers) said we would be notified, but nothing happened*”. The informant further complained about “*empty phrases*” in the firm, and that “*good intentions often stumble into problems during the execution part*”. To the contrary, another colleague in the same program was equally clear in his statement: “*Those who complain about lack of personal development typically haven't done anything themselves to get what they want. I nag a lot, and now I think I will get it my way. We joke that it is to get rid of me, to ship me abroad in order to stop the nagging*”. This illustrates that there are various opinions regarding the result of this particular training program. It also indicates that efforts designed to improve CD, may be difficult to fully implement. The reason given for not providing the promised international project experience was that it became too costly. Yet, it seems as if personal drive may have an impact on the direction and outcome of CD efforts. The importance of individual initiatives is further addressed below.

#### *Individual initiatives*

When it comes to personal development initiatives, it seems as if project leaders/functional experts engage themselves to larger extents than younger project co-workers in learning activities outside the firm. Several experts are

engaged in teaching at universities and research institutions. Says one who has been external examiner and lecturer at NTNU since 1982: “*I do this because it gives me a good time, and because I feel I master the subject, and, of course, to learn by keeping contact with the functional field*” (functional expert). Such activities are also important to the branding of the firm towards the functional society as well as in recruitment purposes. Over time, several informants have built and created contacts through personal initiatives. Such activities are likely to enhance the potential for CD, as the individuals involved are exposed to a variety of people with different experiences. Co-workers, on the other hand, refer to initiatives they make in project work, as well as the importance of keeping close ties to their classmates. This is particularly important for those working in small fields of engineering which can be very transparent because there are few graduates each year. Then, it is as usual to call people in competitor companies for help with technical problems, as it is to contact in-house colleagues. Whereas personal initiatives seem important to learning, the data also shows that initiatives to efforts enhancing competence beyond project work vary. For example:

“I don’t do anything particular to keep myself updated. It’s more that if I’m in a project and meet a problem, it’s expected that I’m able to dig up the knowledge related to that problem. But people differ. Some take the initiative to read a lot of periodicals and stuff. Others don’t, and I do the latter to a too large extent (smiles). I don’t have time. I feel so snowed under with project work. Then, I have to do it at home, and that’s difficult” (project co-worker).

Hence, personal initiatives made by functional experts in particular, are often directed towards external settings and networks, whereas project co-workers’ initiatives primarily relate to on-the-job updates. Little time due to project work is by many seen as negative to such initiatives. Finally, in a large firm with emphasis on personal efforts to CD and learning through project work, a strong wish for more formalized CD is also pointed out. Several of the informants, particularly young co-workers, say they would prefer more formal and planned competence development, both to maintain functional competence and enhance learning in project management.

#### *Further analysis*

Professionals in TEKNA claim to develop competence through external courses and internal forums. In terms of Nordhaug’s (1993) classification of internal and external training, functional forums such as technical lunch and the CAD forum correspond to internal training, whereas external courses correspond to external training. The training program for international assignments is primarily conducted as a highly customized in-house arrangement, but also, to some extent, in collaboration with external people. The last part of the program, real international experience, was to be

conducted in projects abroad. In addition, investments in CD include external activities carried out by internal people of TEKNA. This illustrates that not all the investments in TEKNA fit entirely into the two classifications made by Nordhaug (1993).

Various opinions exist about investments in CD, particularly regarding access to external course participation. Whereas co-workers experience access to external courses as very restricted, their managers assert the opposite. This seems to be due to somewhat conflicting policies in TEKNA. The Competence Policy document states that there is supposed to be an open attitude towards external courses. In contrast, external courses are regarded expensive not only in terms of travel and participation costs, but primarily because absence from work means “losing” otherwise billable hours (Maister, 1993). However, the most important reason may relate to the extensive expertise internal to the firm, combined with a prevailing attitude that TEKNA represents the top experts itself. In this respect, Nordhaug (1993) claims that it is economically more rational for a large company to rely more on internal training compared to external training. On the other hand, TEKNA seems to conduct few systematized activities, and there is no “training department” in the firm. According to Nordhaug (1993), firms with internal training departments are assumed to have a higher ratio of internal to external training. A wish for more formalized and systematized CD activities was expressed. Yet, some functional experts/project leaders make individual initiatives outside the firm to a large extent. Such initiatives are made to promote functional CD, and are often based on long-term relationships with technical university scientists and communities. In contrast, co-worker informants seem to be less involved in external CD activities, and make few initiatives beyond on-the-job updates. However, the data also indicated that there may be a risk of under-reporting CD efforts. According to Patton (1980), this latter issue may stem from the informants’ consciousness about the issue under investigation, as well as their ability to remember such activities during the interview.

The emphasis on building an IT platform in TEKNA is anchored strategically based on the large size of the firm. The aim is to increase competence sharing with regard to a systematization of the support of CD throughout the firm. This seems as a positive effort because formalization of routines are often required in large firms in order to increase and sustain the firm’s efficiency and effectiveness over time (Starbuck, 1992). TEKNA relies to a high degree on in-house resources for CD purposes. This approach is likely to represent a more cost effective way compared to buying e.g. courses in the market (Nordhaug, 1993). In addition, the internal forums are customized to the needs and procedures of TEKNA. On the other hand, the high degree of restrictions on external courses may grow in negative impact

over time. Particularly younger informants advocated that impulses from sources external to the firm are important. This is particularly the case for “small” engineering disciplines, of which TEKNA has several. Another reason is that TEKNA seems characterized by a culture in which some of the seniors have a very good image of what the firm is capable of. However, to sustain this market position becomes a challenge, particularly because the average age of the employees is quite high. This means that the younger people have not reached the same level of expertise, at the same time as there seems to be a generation change coming up in the firm. This implies that keeping an observant eye on external actors, in terms of CD and regarding competitors, seems to be important for future strategic positioning.

The functional aspect of technical engineering appears most central to the training activities of TEKNA. In the terms of Nordhaug (1993), functional skills in engineering seem to resemble technical trade competence, i.e. task specific, industry specific, and firm non-specific competence. This means that such competence is transferable across firms. On the other hand, the high emphasis on internal training in TEKNA, as well as the niche services blend more firm-specificity into the technical trade competence.

Overall, thus, the professionals in TEKNA develop competence through *both internal and external training*, however, with an emphasis on internal training. Yet, all informants claim that the most important CD takes place in daily operations, as addressed below.

### **5.2.3. CD through daily operations**

In TEKNA, all informants claim project assignments to be the most essential for competence development. In project work, ‘learning by doing in different project roles’, ‘learning by doing in different project phases’, and ‘learning by doing in different project sizes’ stand out as important. In addition, ‘public and private sector clients’ and ‘project staffing’ influence CD.

#### *Learning by doing in different project roles*

Even though TEKNA has developed written materials and handbooks for how to approach technical challenges, all informants state that the most effective way of developing competence is through learning by doing in projects. The projects involve people who do different activities in order to deliver a client service. Informants claim that they develop competence based on different roles such as project leader and project co-worker. The kind of competence developed varies according to the type of role performed. Many of the most experienced employees, be it with and without formal managerial responsibility, work as project leaders. Yet, they can perform different roles in several ongoing projects: Says one of them: *“I can be project leader in one project, and co-worker and assistant in another. I*

*primarily develop competence through working as project leader*” (section manager). However, the extent to which a person has different roles varies, often depending on functional field and experience. Experts within particular niche areas, typically work on several parallel projects compared to more generalist employees. Crucial to the CD of experienced people is interaction and discussion with peers, as well as being gradually exposed to more demanding tasks. The latter is similar to less experienced workers, only at more demanding levels. The project leaders tie their learning by doing to learning in relations with various actors in a project, as they have more contact with clients and others involved in the project like architects and entrepreneurs. They also emphasize project management as an important part of their CD. In particular, working as project leader of large assignments is claimed positive to CD.

In contrast, less experienced people typically serve as project co-workers. This type of role implies that they do not have extensive contact with clients, or formal economic or functional responsibility. The co-workers are involved in the “production work”. This refers to the execution and making of the actual delivery to clients, such as calculations and planning necessary to construct or maintain e.g. buildings or roads. Most co-workers work with computer drawings. Important to their learning is to familiarize with the technical tools and programs. Hence, their learning by doing seems to some extent to take place individually. Whereas for the more experienced, a larger part of their learning by doing relates to collaboration with peers. The young co-workers spend most of their time making drawings and calculations on the computer. According to several of them, many of the elderly seniors do not know how to use the new software programs, because in the “old days” they drew by hand on drawing tables. *“Everything we do is based on IT. It can be fifteen to twenty minutes per day that I don’t work on the computer”*, says one co-worker. However, they also learn from discussions with more experienced colleagues. For example:

“I gain competence when I’m actively involved in projects. Then, I get confronted with new issues. As soon as I’m uncertain about anything, I start talking to colleagues. I just go to the older experienced people in the corridor who deal with similar issues, and ask them to look at my proposition. Try to make informal contact. Pay attention, listen to how they express their reasoning in order to solve a problem. I learn a lot in these situations because it gives another angle on the problem, and I start to think differently. It’s “inhaling” competence out there without it being specifically transferred” (project co-worker).

As a result, learning by doing from working alone on the computer as well as in direct interaction with more experienced colleagues are important to the

CD of young co-workers. In comparison, peer discussions promote CD for the more experienced project leaders and functional experts.

In addition, different project phases influence CD.

*Learning by doing in different project phases*

TEKNA offers expertise in all project phases, including feasibility studies, engineering, preparation of bid documents, and bid evaluation, project management, and construction supervision. Hence, projects run through different sequences or phases. The phases people are involved in during project work influence CD in different ways. Project leaders gain the overall view of the projects, whereas co-workers work on specific parts of the assignment. The person in charge of a project follow the project from the pre-phases through the execution and production phases, and to the closure, including potential follow up after project completion. This way, they gain competence connected to the totality of a project, and how different elements of a project fit together. Co-workers handle specific areas of the project and develop competence in particular, restricted parts of it. Co-workers are typically mid- or late phase entrants. They enter the project after the frames have been set and production is about to start, or has already begun. They work not only in certain project phases, but also in phases usually involving more routine than creativity, in order to gain competence in basic “production”. For example: *“In the beginning, juniors are not given the most creative tasks. But for them, these tasks may be very creative, since they are among their first assignments. They learn from working on projects that have come so far that the construction is about to begin, or the building is already under construction”* (section manager).

All informants claim that conducting activities in a variety of phases of project work enhances CD. Gaining competence on how projects are built up, the content of different sequences, as well as how different parts relate and are supposed to fit together in the totality, are crucial in this respect. Both project leaders and co-workers emphasize involvement in the whole project cycle as an important aspect of CD. For example: *“It’s important that particularly the younger and “green” people get to participate in the whole process. It’s less fulfilling to only come in towards the end and do a boring job. Then, you don’t get an understanding of the project, and you don’t do a good job either. We learn more from being engaged all the way”* (project co-worker).

Further, the impact on CD from project phases and project roles is also influenced by the size of the project.



*Learning by doing in different project sizes*

According to the informants, the size of the project impacts CD. They distinguish between learning from small and large projects. *“Clearly, I learn more from large projects. Because such projects contain so much within each functional field that we get a volume within each area that needs attention, and this brings about a lot of competence”*, says one project leader. Large projects are further seen as more developing because they usually involve more people, resources, and longer periods of client interaction than smaller projects, which again increase opportunities for interacting with a variety of people with different backgrounds. In addition, large projects also have more slack in the budgets. Compared to small projects, large projects involve more time on each project phase, which increases familiarity with different parts of the project. In addition, large projects seem to contain more written, “codified” material, which makes it easier to share competence among members of the team. For these reasons, young co-workers primarily get experience from large projects. For example:

“Newly hired civil engineers straight out of university are used in large projects where several people are involved. They make production and construction drawings where ten people, or even more, draw on the same project. Then, they are forced to interact and collaborate with others because they work on a piece verging on to someone else’s. That generates a lot of learning. Under supervision of experienced colleagues, they can develop into knowledgeable craftsmen in engineering by getting practice in seeing how a building functions” (section manager).

Whereas all interviewees mentioned activities in large sized projects as important for CD, a couple of co-workers also emphasized small projects in which they are given responsibility as project leaders. In particular, it seems as if practice opportunities in small projects represent important learning for people with a few years of experience. This is because they gain increased responsibility for a variety of tasks, as the division of labor between project leader and project co-worker is not as distinct as in large projects. Says one informant with two years of experience in TEKNA:

“The advantage of small projects is that I get a better grasp of the totality. I get more responsibility than in larger projects and I get to take care of the budget, archives, faxes, and ingoing and outgoing correspondence. That’s also an important part of the project, keeping track of these things, because I return to look at what has been said and written. In small projects, I get to do all the calculations and drawings myself. I learn a lot from that. What I do now is repetition from previous, small projects. That’s very useful, because I can attend to and think more thoroughly through every stage - consider and

evaluate - things I didn't have time for earlier. Nevertheless, all along, new issues also occur" (project co-worker).

Thus, in general, it seems as if the potential for exploring and thereby learning is claimed to be greater in large projects than in small. On the other hand, small projects promote responsibility and opportunities particularly for less experienced workers to repeat, reflect, and further develop competence.

However, some of the young co-workers complained that they were sometimes given little responsibility in projects. Says one of them: *"Many of the older project leaders have the attitude that they control and decide. There are differences between project leaders and civil engineers on the one hand, and engineers and those who draw and do the work on the other"*. Hence, it sometimes takes too long time before co-workers experience that they "proceed" and get more challenging tasks. This is seen as negative to their CD. The degree to which they experience progress, typically depends on the senior in charge of the project. It varies how good the seniors are to deeply involve junior employees and to delegate responsibility representing challenges for less experienced workers. This indicates that according to the juniors, their competence is not sufficiently utilized. On the other hand, the seniors claim that they try to evaluate individuals in order to adjust the tasks to their step in the development process. These responses may relate to a situation in which the juniors have an image of their competence and capacity which is not shared by the seniors. This may signal that the juniors are more ambitious and have more confidence on their own part than there is reason for. Or, it may suggest that the seniors' judgments and mental maps of the juniors' competences are not in accordance with the "terrain". In any event, there seems to be a tension between seniors and juniors with regard to the utilization of juniors' competence in TEKNA.

Large projects typically consist of multiple engineering disciplines. As a multi-engineering company, TEKNA represents competence within a broad area of functional fields, and project leaders claim that being in charge of multi-disciplinary projects enhance their CD. One of them explains: *"Our strongest part is that we have a lot of competence in-house, because we cover a wide variety of functional areas. In the projects, this contributes to a comprehensive competence through collaboration between people working here"*. However, the degree to which people work across engineering disciplines vary. Particularly the co-workers work within their own functional field. Assignments demanding multi-disciplinary engineering services are primarily the large ones, whereas the majority of the TEKNA projects are small. Further, according to one manager, the divisions are almost run as separate companies "side by side". There is little coordination across the divisions, and the top managers are trying to improve these

processes in order to build a common strategy which better utilizes the potential of each division in a broader firm perspective. According to several informants, there is a major potential for improving interaction and collaboration between the engineering disciplines. Hence, it seems as if the potential for learning from colleagues across different engineering disciplines is under-utilized.

Learning from clients was emphasized as important to CD in CREO. Thus, this statement was further investigated in TEKNA.

#### *Public and private sector clients*

All the informants in TEKNA also say they learn from clients. However, the engineers made clear distinctions between public sector and private sector clients with regard to impact on CD. They claim that the potential for CD is higher when working with public sector clients. Public clients are viewed as functionally more competent than clients from the private sector because they often share the same engineering background. Private sector clients are often unfamiliar with engineering work: *“As soon as we turn to the public sector, we meet people who know at least as much as we do. That’s challenging and creates a totally different way of working. In addition to frequent phone contact, we end up going to several more meetings. Private clients accept much more that we are right”* (project leader). Working with public sector clients involves higher degrees of functional discussions and more precise requirements from the client. Public sector clients are also more critical towards e.g. what material to choose and how to do the work. On the other hand, interaction with clients with non-engineering backgrounds can provide professionals with a new perspective on their own work. One informant refers to a traffic planning meeting with the regional public road authorities. In this particular meeting, user group representatives were also involved in the project. Communicating with these new client groups presents other challenges than the traditional ones. For example:

“That client meeting involved much sharing of competence because I was confronted with questions nobody had ever asked me before. I’m used to discuss with other engineers, and all of a sudden I had to answer questions from people who knew nothing about my field of expertise. That way, I had to go into myself and reflect upon what I really wrote in my reports, if it was as incomprehensible as it seemed to them. I almost went through a “revival” process. We will get more of this because we cannot simply sit by ourselves anymore and write solely for engineers” (project co-worker).

This illustrates how people from different sectors inform each other by asking unexpected questions and by making new demands, which can result in consultants rethinking which terms they use and how they present advice

to clients. Interacting with a variety of clients, thus, may open up for reflection, both in action and in retrospect (Schön, 1983). Hence, interaction with different types of clients seems to support learning. However, the degree to which co-workers get to meet with clients differs, depending on budgets and the project leader. According to one division manager/project leader, the projects within his functional field are so small it is difficult to include younger co-workers in client meetings just for the sake of “training”: *“This is something we struggle with in my division, because it takes time to train people, and because we are too squeezed on price in the projects. We are simply too driven by short-term profitability demands”*. However, a section manager/project leader says that bringing co-workers to meet clients and to see the construction sites is one of his priorities: *“First, this is only an investment, a cost. But, because they (the young co-workers) learn more from direct collaboration with clients and seeing the construction site in real life, I hope it pays off in the long run”*. This is further seen as important because *“... these days, we do not visit the construction sites as often as we did say ten years ago. Today, more is done in-house on the computer. This makes it problematic for beginners to really understand the dependencies in a project. Therefore, it’s even more important for them to go out there and see for themselves how things connect”* (section manager).

According to the co-workers, the project leaders differ regarding the extent to which they involve people on the team. Some are better than others at including others by e.g. letting them meet the client. However, the co-workers are also to some extent able to influence their own CD, as illustrated in the following conversation:

- Informant: “While some are very good at bringing younger people to meetings and such, others are not. You learn who does and who doesn’t. Then, you have the possibility to prioritize who you want to work with”.
- Interviewer: “How do you do that?”
- Informant: “By saying I have time or not (smiles). In cases where I don’t have time I still say ‘yes’ if I like working with that particular person” (project co-worker).

Further, the staffing of projects impacts CD in service delivery.

#### *Project staffing*

Projects are organized by the section and division managers. A project leader is appointed by the manager, and this person further composes the team members according to the type of task to be solved. *“Our projects are staffed primarily based on availability and the competence needed - here and now”*, says one manager. This indicates that projects are not staffed with a view to CD. Teams are composed based on meeting the demands of the

particular project at hand. Such team staffing depends on good knowledge of the employees, and execution of the project depends to a large extent on the project leader. In this respect, one co-worker demands a more thorough evaluation of the project leaders. *“There are examples of poor project management by project leaders. What happens is that the co-workers “save” the project. The result presented to the client is fine, but the frustration on the team is high. They (the managers) must dare to release people from their project leader responsibility when they repeatedly do a bad job”*, he says. This opinion is supported by similar responses related to other areas, in which informants claim that the firm is *“too gentle to follow up on unpleasant issues”*, as one project co-worker puts it. The project staffing of TEKNA does not seem to be particularly supportive in terms of developing future competence. Rather, the projects are staffed with regard to the current need for available project workers. The data shows that competence develops through various practice opportunities. Hence, this indicates the importance of actually being involved in these activities, which again requires conscious attention as to what practice is needed and how to mobilize people into these tasks.

As a result, in a firm with few systematized procedures for team staffing with regard to CD, and where the project leader composes the team, it easily becomes ad hoc what projects and types of problems people get involved with. This is particularly negative for the young co-workers, who to a less degree than project leaders have possibilities to influence team composition and practice opportunities for CD.

#### *Further analysis*

All informants in TEKNA say they develop competence from learning by doing in projects. However, they learn from different roles. Co-workers primarily learn from working on project parts, whereas project leaders gain competence connected to the totality of projects. In particular, being project leader of large, multi-disciplinary engineering projects enhance CD. For less experienced people, being responsible for small projects is important to their CD. The learning is claimed to be higher from interaction with public sector clients with engineering competence, than from private sector clients without engineering experience. This illustrates that people in TEKNA seem to learn from individual experiences (e.g. Dewey, 1916; Kolb, 1984), as well as through social interactions (e.g. Lave & Wenger, 1991). Co-workers primarily develop competence from (i) learning collectively together with more experienced project colleagues, from (ii) learning individually by working on the computer with CAD, and (iii) as project leaders of small projects. In comparison, project leaders typically develop competence from learning collectively with (i) peers from the same or from other engineering disciplines, (ii) competent clients, and (iii) external network experts.

In light of the high emphasis on learning by doing, the types of projects TEKNA gets heavily influence CD. Large projects are typically gained based on tender competition. Thus, opportunities to choose among different projects with regard to CD are limited. Still, learning by doing through client projects represents the most important source of CD. In this respect, project size influences CD. Seniors claim that their most valuable competence comes from large multi-disciplinary projects, whereas juniors also learn from small projects. However, since most projects in TEKNA are small, this implies that in terms of CD, large projects can strategically be very important. Further, the types of clients TEKNA has are important to the CD process, as clients represent an important source of learning. TEKNA has a mix of private and public sector clients. However, collaboration with public sector clients seems particularly positive for CD relative to private sector clients. This means that gaining and maintaining public sector clients are strategically important in terms of CD.

From the above analyzes of investments in CD and CD through daily operations, the next section brings the two routes together by highlighting the aspects identified to facilitate or constrain CD in TEKNA.

#### **5.2.4. CD facilitators and constraints**

In TEKNA, all informants, be they project leaders, co-workers, and managers, claim that project work represents the most important source of CD compared to investments designed to improve learning. The most important facilitator, thus, is learning by doing in project assignments. Beyond this finding, in general, there are differences in responses between junior co-workers on the one hand and project leaders (often with managerial responsibility) on the other. Juniors primarily develop competence as co-workers. They enter projects in the mid- or late phases, and learn from particular parts of large projects, as well as from increased responsibility of small projects. More experienced people primarily learn from being project leaders of large, multi-disciplinary engineering projects, where they gain competence connected to the totality of the project. This shows that project role, phase, and size influence CD differently with regard to juniors versus seniors. For juniors, technology-based work facilitates CD. However, interaction with seniors is also very important. For seniors, interaction with peers and clients facilitates CD. In particular, collaboration with public sector clients with knowledge of engineering promotes learning. To the contrary, projects are staffed by project leaders based on ad hoc requirements and the competence needed to deliver the service. Hence, there is little attention paid to staffing with a view to future CD. Since large multi-disciplinary projects are seen to facilitate CD, the shortage of such assignments can be viewed as a constraint. In addition, there seems to be a

large potential for improved sharing of competence across different engineering fields. Further, project work which provides an overall understanding of the project cycle supports CD. Hence, working only on particular parts of projects seems to constrain overall learning of the project totality. In this respect, junior co-workers see too little responsibility in projects as a constraint to their CD.

In terms of investments, internal forums are claimed to facilitate learning. Due to the many employees who together represent extensive competence in all engineering disciplines that TEKNA offers, the firm relies to a large extent on in-house expertise in its internal training. Yet, the potential for learning between colleagues representing various areas of engineering seems under-utilized. Internal training activities have a tendency to be given low priority due to high time pressure in order to meet project deadlines. This represents a major constraint to CD. Further, external courses also promote learning. However, while managers see participation in external courses as open to those interested, juniors experience restrictions on access to such courses to constrain their CD. To the contrary, lecturing and giving speeches at external settings are encouraged. TEKNA's reliance on individual efforts to initiate CD leads to a wish for more formalized and systematized learning investments. At the same time, there seems to be a risk of under-reporting CD efforts. Another constraint is CD investments which are not fully realized because they fail during implementation. One example is the training program for international assignments. To the degree that electronic databases and investments in IT support CD is too early to determine at this point, because this work is still in its infancy. However, the investments in databases seem positive, as TEKNA is a large firm and large firms need routines and coordination in order to operate effectively (e.g. Starbuck, 1992). The challenge is to make the IT platform work, so that it actually becomes the helpful tool for CD as the top managers assume it to be. The CD facilitators and constraints emphasized in TEKNA are summarized in table 15.

Table 15. Facilitators and constraints to CD in TEKNA

	Investments	Daily operations
<b>CD facilitators</b>	<ul style="list-style-type: none"> <li>-Internal forums</li> <li>-External courses</li> <li>-Individual initiatives:</li> <li>Experts/project leaders: external settings beyond projects</li> <li>Co-workers: on-the-job updates</li> <li>-IT platform for the support of systematic career development?</li> </ul>	<ul style="list-style-type: none"> <li>-Learning by doing in different project roles, phases, and sizes:</li> <li>Project leader: view of the totality, large, multi-engineering projects.</li> <li>Co-worker: mid/late-phase entrant, large and small projects</li> <li>-Co-workers learn individually related to the computer and from seniors and clients</li> <li>-Experts/project leaders learn from peers and from public sector clients with engineering background</li> </ul>
<b>CD constraints</b>	<ul style="list-style-type: none"> <li>-IT does not facilitate informal CD processes</li> <li>-Little time available to spend on forums and courses</li> <li>-Co-workers experience very restricted access to external courses</li> <li>-Little use of external learning sources</li> <li>-CD investments that are not properly followed through during implementation</li> </ul>	<ul style="list-style-type: none"> <li>-Ad hoc project staffing and practice opportunities</li> <li>-Project work which does not provide an overall view/understanding of the project cycle</li> <li>-Shortage of large multi-engineering projects</li> <li>-Learning across multi-engineering fields seems under-utilized</li> <li>-Junior co-workers experience too little responsibility in projects</li> </ul>

The next section elaborates on the kind of competence which is developed through the investments and daily operations identified as important to CD in TEKNA.

### 5.2.5. Type of competence developed

Based on the above material, what kind of competence is developed through the learning processes highlighted in TEKNA? As mentioned earlier, people in TEKNA seems to develop technical trade competence (Nordhaug, 1993). Typically, in TEKNA, this relates to what can be termed functional competence within engineering. Such competence stands out as principal. For example: *“We are trained within functional engineering from NTH.”*<sup>43</sup> *The technical-functional subjects are the core of our products, and*

<sup>43</sup> NTH, now NTNU, The Norwegian University of Science and Technology (Norges teknisk-naturvitenskapelige universitet).



*competence within these areas is a necessary condition. At what level depends on what kind of job within a project you do*” (section manager). The functional subjects vary and consist of e.g. construction technique of office buildings, construction technique of industrial buildings, civil work engineering, mechanical engineering, municipal engineering etc. Further, each technical functional subject represents its own requirements, which can be general and specific. One example from a specific area of electrical engineering is illustrative. *“These days, I’m occupied with trams. Trams travel on direct current, whereas regular power depends on alternating power. Many specific and unusual challenges follow from this requirement, for example how to deal with power supply”* (project co-worker). This competence is not only specific in terms of functional electrical engineering, it also becomes very specific because trams only operate in two cities in Norway. Many of the projects from other disciplines in TEKNA resemble this example. They have in common that they require very specific competence on a restricted area which can be outside the “mainstream” requirements of engineering design. This suggests that the direct reuse of competence becomes restricted in terms of applications to other areas. However, also more recurrent projects often require sophisticated expertise. The challenge becomes to adjust technical competence to the various requirements in a project. Says one manager:

“To you, one building may look just like another when you see them pop up here and there. But, every building is a prototype. Each has its own particular requirements in terms of external frames – physically and by law, i.e. what is allowed to do on the lot, the height and breadth of the building, how many floors, how close to e.g. rivers and surrounding constructions. In addition, the buildings are often owned by people who want to make money on them, for example through rent income. Return on investment, that’s what it is all about. Together, these demands put pressure on the conditions of each of our projects. Consequently, the projects become very different because every building is in its own way unique” (section manager).

This quote also indicates that the customization of each assignment is quite high. Therefore, the informants were asked about the degree of routine services as opposed to innovative services in order to probe further into the type of services TEKNA offers and the competence developed from them. For example: *“My work consists of little routine. I think that is an answer you will get to a very high degree if you ask everybody who participate in projects. You can get elements of routine maybe from younger people who work in the production line, in what we call the detail phase, where there are a lot of drawings to be made, or if you ask a CAD operator who only draws. Among civil engineers who have worked here for some years, and who have outside contact, I’m sure they will not emphasize routine”* (section manager). Compared to the other informants, only one claimed that his work

consisted mostly of routine activities. The response came from a highly experienced manager, and the reason given is that the various engineering disciplines vary with degree of innovation. *“In my field, there is a lot of old technology. Then, it’s easy to hide behind the idea that competence development is not very important because there is nothing new to learn anyway. The IT world is like a spin dryer compared to us”*, he says. On the other hand, everything which is produced of technical material is developed electronically on the computer, and according to most informants, keeping up with the latest updates on software programs is important. Hence, competence in the use of CAD and other relevant programs as tools for technical calculations is closely connected to functional competence: *“Our functional competence is the basis for what we do on the computer. If the data fed into the machine is incorrect, the result will also be wrong”* (project co-worker). So far, these responses suggest that it is the use and development of functional competence on various assignments which drive the learning process. Since assignments differ according to specific requirements, functional learning is enhanced. Beyond functional competence as the primary condition, the importance of building relations particularly in terms of appropriate communication both in collaboration with colleagues as well as with clients is highly stressed by most engineers. For example:

“I talk a lot about the importance of succeeding in communicating with others. We will reveal ourselves early if we don’t deliver quality in the product. To be a skilled engineer within one’s particular profession is important. But since there are many highly skilled people, it’s tempting to take functional competence as given. In fact it is a requisite. Beyond that, it is to find good solutions pretty quickly in collaboration with other actors in the project. To see others’ needs, and to function outside of the house, to appear in such a way that the clients like having met us, and feel good about seeing us again. That’s crucial for us in order to survive” (section manager).

This illustrates that competence related to interpersonal relationships (Løwendahl & Nordhaug, 1994) or what can be termed ‘relational competence’ is important. This is further illustrated by another informant, as he learns to relate to and interact with various actors in a project: *“In my work day, I find myself between two worlds, the world of the architect and the world of the contractor. Those two often think in highly different ways. I learn to adjust to both, and to understand their ways of thinking when I meet them. I see what is important for each of them. Likewise, they have to listen to what I see as important. It’s an interplay. If you only work in-house, you get very isolated. You become blinded by your own work and less capable of seeing what other people’s worlds look like”* (project co-worker). This quote also illustrates the importance of understanding the client problem. In

addition, relational competence also seems closely connected to marketing - so that “clients feel good about seeing them again”.

Further, what can be termed ‘project competence’ is also essential. Project competence involves understanding how a project functions. This is essential because the entire business is built up on and around projects: “*Project work is the foundation for the whole income and existence of this firm*” (section manager). In general, a project is perceived as “... *a time-limited task with a goal, involving several activities, functional fields, and joint collaboration between several actors in order to realize that goal*” (section manager). In projects, the type of competence developed differs between project co-workers and project leaders. Project understanding is gained and maintained in actual project work, through different roles, working on different types of projects, and in different project phases. Project roles typically include project responsible, project leader, and project co-worker. Type of project is determined by the client problem and consists of small and large projects which involves different project phases (e.g. beginning, mid, end, i.e. parts of a project, and the whole project), and may involve interaction with different groups such as colleagues, clients, users, network, etc. Individuals may perform different roles, being involved in different types of projects as well as in different phases of projects in ongoing and parallel projects. As discussed previously, it seems as if co-workers learn while working on parts of the projects, whereas the project leader learns from an overall view of the project.

In addition, the project management is important for the project leader. In this respect, planning and keeping budget limits were highlighted. Particularly in large projects, coordination is important due to the many people involved, and because such projects typically run for long periods of time, thereby making the coordination of functional fields and the keeping of financial budgets accordingly essential. Coordination and planning are also extremely important due to the many dependencies in a project, as exemplified by a project leader: “*For a large construction project to be ready on time, the test and trial phase must finish the year before. In order to prepare for the installations, the people working with the soil need to finish two years before, and so on. Because there are many phases and people involved, I must rely on my experience when I plan, so that each of them reach their milestones. Otherwise, a negative domino effect will detain remaining work – and costs will increase*” (section manager).

The previous analyses also emphasized the importance of learning from talking to each other. For young co-workers, knowing which project leaders to work with in terms of opportunities for involvement and learning was mentioned. Team staffing also requires managers and project leaders to

know their colleagues in order to put together a good team. Since TEKNA is a large organization, this material indicates that competence about own organization can benefit CD. Hence, what can be termed 'organization competence' seems important.

As a result, people in TEKNA seem to develop 'technical trade competence', which particularly relates to 'functional competence'. The use and application of functional competence on technically sophisticated challenges with unique requirements drive the major learning process. This means that a lot of competence becomes specific to the people involved in the particular project. Hence, what can be termed 'person specific competence' is suggested developed. Consequently, the firm becomes dependent on particular individual experts. Such dependence is reduced through the sharing of competence with other colleagues. However, the analyses also show that at least across disciplines, there is little degree of competence sharing beyond actual projects. This indicates that the technical trade competence developed in TEKNA may not be easily portable across firms because it seems specific according to task, the way competence develops – and together with whom. Thus, the particular relations and interactions between peer experts and research institutions may make technically sophisticated developments difficult to copy.

Hence, in terms of 'functional competence', a combination of 'technical trade competence' and 'person specific competence' seems to be developed. In addition, 'relational competence', 'project competence', and 'organization competence' are emphasized as important types of competences in TEKNA.

With regard to competence ownership and control (Løwendahl, 1997), there seems to be many experts in TEKNA. However, these experts work within different niche engineering areas which often consist of few individuals in each. This indicates that the functional competence in TEKNA is to a large degree individually controlled. This is also supported by the extensive amount of time that is spent individually while working on the computer. On the other hand, organizationally controlled competence also exists. Such competence primarily relates to the IT platform in terms of systems and databases for competence sharing. In addition, routines regarding the ISO 9001 requirements, along with procedures for the development of handbooks for large projects and the writing of tender proposals, are also included. However, with the IT platform being at an initial development stage, it is too early to evaluate the degree to which this investment contributes to competence sharing. Hence, in light of its large size, TEKNA seems to rely on surprisingly few organizationally controlled competences. Rather, emphasis seems to adhere to individually controlled competence.

From the above analyzes, a ‘functional expert dominant CD process’ is suggested as the way in which competence development takes place in TEKNA.

### **5.3. A functional expert dominant CD process**

The above analyzes suggest that CD in TEKNA primarily takes place in technically demanding projects through learning by doing based on individual experiences and social interactions. In addition, there is high emphasis on internal training activities and person-to-person interaction in favour of a people-to-documents alternative (Hansen et al., 1999). These findings further strengthen the previous suggestion that, at TEKNA, a creative problem solving based approach dominates the output and client relation based approaches (Løwendahl, 1997). To such a problem solving pattern, the development of functional competence stands out in TEKNA. Hence, it is suggested that CD in TEKNA can be described as a ‘functional expert dominant CD process’, as summarized in table 16. Compared to the firm’s generic strategy, the CD process seems to be in agreement with the former. In particular, this is illustrated through TEKNA’s prevalent emphasis on customized services and expert economics, as opposed to reuse economics (Hansen et al., 1999), combined with a strong focus on functional CD. In addition, both individually and collectively controlled competences are developed.

Table 16. CD process in TEKNA

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<b>Functional expert dominant CD process</b>	
<b>CD policy</b>	Person-to-person approach. Databases are currently of little importance, but efforts are made to systematize CD. Clear policy and reliance on individual CD initiatives.
<b>Investments in CD</b>	High focus and reliance on internal training. Restrictions on external courses. Speeches and lecturing by TEKNA professionals at external settings are encouraged. Emphasis on developing and maintaining good relationships with external networks for CD purposes, e.g. the technical university.
<b>CD in daily operations</b>	Learning individually and collectively in technically demanding projects of various roles, phases, and sizes. Co-workers primarily learn (i) individually while using IT, (ii) together with more experienced colleagues, and (iii) as project leaders of small projects. Project leaders primarily learn together with: (i) peer colleagues, (ii) competent clients, and (iii) networks.
<b>Type of competence</b>	'Functional competence' of 'technical trade competence' and 'person specific competence'. 'Relational competence', 'project competence', and 'organization competence' are also central. Competences are both individually and organizationally controlled, yet, with an emphasis on advanced individual expertise.

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Notwithstanding the finding that TEKNA pursues a functional expert dominant CD process, there also appears to be a huge inconsistency between managerial claims and what is actually going on in terms of CD. Thus, based on the picture drawn of CD in TEKNA from the previous analyses, a further and somewhat more sceptical probing into the issue addressed as “what is being said is not necessarily what is being done” follows in the next section.

#### **5.4. What is being said is not necessarily what is being done**

Written materials clearly document that the TEKNA managers strongly emphasize the importance of CD. The firm's CD Policy, intranet postings, and other statements describe how competence goals are to be realized. On the other hand, the findings show that in practice, these goals seem a bit far from the reality. This is particularly the opinion of the junior employees. They experience access to learning arenas as often difficult to obtain. The examples are many, including access to international projects, access to clients, access to interesting projects, and access to work with seniors that are willing to train them and share their expertise with them. Sometimes, seniors even act as gatekeepers who prevent juniors from likely arenas of learning. There may be many reasons for why such situations occur. In

particular, the high degree of autonomy available to senior professionals in TEKNA seems influential. As previously mentioned, the seniors are in a much better position to decide, exert influence, and use their seniority, client relationships, and power as they prefer and to their own benefit, than juniors. Further, the project leaders (typically part time managers and other seniors) determine who gets to work on which types of projects, and together with whom – be they clients or colleagues. This can spur conflicts of interest. The data (from juniors) indicates that many seniors very much prefer to work undisturbed on their own and with problems of personal interest to them, i.e. without being encumbered with the “duty” of training newcomers. Thus, the TEKNA project leaders work in an environment where they are free to run their projects and client relations very independently, without particular interference from managers or co-workers. Such high individual autonomy is typical for the C type of firms, where senior professionals are quite independent and do not easily accept managerial governance (Løwendahl, 1997). In TEKNA, high individual autonomy related to what work tasks to take on and the actual carrying out of project work dominate, whereas the training of junior colleagues is not practiced very seriously by the seniors. In fact, in practice, relatively little interest seems to be devoted to CD concerns in TEKNA.

On the other hand, a lot of learning came about from working on client projects. The problem is that quite often it is determined by chance which projects a person (particularly the co-workers) gets to work on. Hence, what is learned and together with whom is also very much determined by chance and ad hoc. For example, the finding that the most important arena for CD is learning through client projects makes project staffing important. However, projects are staffed according to people availability and not with regard to CD. This also adds to the argument that CD is not treated very seriously, neither in terms of orchestration, nor systematic support or continuous observation. Rather, competence efforts are left to each single individual to initiate and take care of. As a result, individual initiatives vary and in competition with client projects, competence efforts are not prioritized. Some seniors, however, take good care of their own CD through engagements and collaboration e.g. with the NTNU. A closer look at these efforts, however, reveals that these interests may also be due to branding/recruitment and profits as much as to CD in itself.

Why, then, is so little effort put into CD? Another main reason seems to be the focus on billable hours. This may be natural because the engineering consulting industry is characterized by tough competition, small margins, and bids where the lowest price often wins the projects. In this respect, time which can be billed to clients results in more money to the owners. Since TEKNA is internally owned by a group of partners, increased profit will

again benefit these partners. This may be a strong driver for a high focus on short term billable hours in favour of long term CD investments, where the return on investment is less predictable and cannot be immediately realized. More money spent on CD efforts means correspondingly less profits in the hands of the partners. For example, resources spent on functional CD in terms of internal seminars and external course participation are not directly billable and will not contribute to increased profit – at least not in the short run. This indicates that in competition with short term income generation, long term CD loses.

A third aspect which may explain the low priority of CD, is the notion that by being “the authority in the industry”, TEKNA professionals “think they are much better than competitors”. Hence, the need for learning (from others) is perceived to be little. On the other hand, to lecture at external conferences is highly encouraged. This seems to support a notion of self-complacent. This view of themselves as (the most) competent people within their industry, can also be discussed in terms of identity, i.e. how people see themselves and the firm, as well as how they want to be seen by others, i.e. the image created. According to Alvesson (2004:70), “*in knowledge-intensive contexts, in particular in service work, managers and workers must devote attention, energy, and skills to dealing with how to present their knowledge, work, and organization and produce positive expectations and assessments of themselves and their work results*”. This means that by being good at rhetoric and “wrapping things up” so that the firm and its workers look impressive and knowledgeable, a message can be sent to clients and competitors, as well as current and future employees, that this particular firm stands for competence that is continuously renewed and updated - and even that the firm is at the forefront of doing so. Moreover, attention falls less on the content of the services offered, which can be very positive if the firm does not offer highly knowledgeable services in the first place. If dependency on and the importance of focusing solely on the services in themselves is reduced, this again may make it even more problematic (for clients as well as researchers) to find out what is for real and what is not, i.e. to distinguish image from substance and rhetoric from real service delivery competence. In the case of TEKNA, however, there can be no doubt that the professionals produce and utilize substantial competence in their projects. Their work has resulted in standing landmarks across Norway, as well as offshore, and internationally, e.g. in terms of bridges, buildings, roads, railways, tunnels, power plants, and pipelines, many of which are considered to be among the most prestigious projects an engineering design firm can get. Nonetheless, the data indicates that whereas interest in CD is clearly expressed on paper, it is not equally noticeable when it comes to what actually goes on in terms of CD in this firm.



Based on this analysis, it can be concluded that CD with an emphasis on functional competence is not practiced very systematically in TEKNA. Yes, learning by doing in projects is an important source for CD. But, the individual autonomy on senior professionals to work quite independently of newcomers, a focus on short term income, and a generally weak interest in CD, pull to the opposite direction. The firm has developed and still enjoys, it seems, a good reputation in the market due to its solid engineering expertise and from being a reliable partner that delivers quality services. The question is whether the firm is resting too much on its laurels, a condition which over time can turn out very unfortunate vis-a-vis competitors.

### **5.5. Summary**

This chapter has presented and analyzed the findings of TEKNA. It is argued that TEKNA pursues a ‘creative problem solving based generic strategy’ in general and a ‘functional expert dominant CD process’ in particular. The CD process of TEKNA is characterized by heavy emphasis on functional engineering competence, high client customization, expertise, learning individually and collectively, and internal training. In addition, a distinction is made between the learning of project leaders on the one hand and less experienced project co-workers on the other. Given this strategic position, when probing further into the CD actually taking place at TEKNA, it is, however, concluded that the development of competence in general, as well as functional competence in particular, is not treated in a very systematic manner when it comes to actual practice. At least, the clear emphasis on the importance of competence development expressed in company documents is not correspondingly reflected in how CD actually takes place.

The following chapter addresses the findings of ENGY.



## 6. ENGY

This chapter presents the empirical findings of ENGY. First, value creation and type of generic strategy are addressed. Second, competence development is attended to in terms of (i) CD policy, (ii) investments in CD, (iii) CD through daily operations, (iv) CD facilitators and constraints, and (v) type of competence developed. Third, based on this material, a ‘multi-disciplinary and efficiency dominant CD process’ is suggested as the way in which competence is developed in ENGY. Fourth, further analysis questions whether organizational investments facilitate knowledge management (KM) for efficiency rather than CD. Finally, the empirical findings of ENGY are summarized.

### 6.1. Value creation

Based on the VCPs of PSFs-framework (Løwendahl, et al., 2001), characteristics of domain choice, service delivery, and resource base are important to investigate in order to identify value creation and generic strategy in ENGY. Empirical material on these issues is based primarily on written company documents and interviews with managers.

#### *Domain choice*

ENGY’s business concept is to be the leading consulting engineering company in the Nordic region, with a high client value in the construction, industrial, and real estate market. Within these areas, the firm covers all phases of the building process - from concept and analysis, planning, design and project management to operation and maintenance (ENGY web site). The firm targets small and large projects, both in terms of multi-disciplinary areas, as well as division and section wise in terms of single functional assignments. Clients are both public and private, but some divisions mainly serve clients operating in the public sector. According to the managers, the firm pays particular attention to the building of networks in order to get assignments before tenders are invited. Hence, ENGY has developed a section called “Project Development”,<sup>44</sup> which deals with initial project developments. The Project Development section has a particular responsibility to serve as a kind of “sensor” out in the market, in order to catch new trends and discover future client needs. Says one division manager: “We try to gain projects and sell the firm based on competence and multi-disciplinarity. In addition, we try to be one of a few who bid. When the municipality calls for tenders, and, clearly, if they get offers from six

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<sup>44</sup> In Norwegian ‘ProsjektUtvikling’ (PU).

*firms, price often determines who gets the assignment*". Preferred projects are those where ENGY becomes involved at an early stage, when the client's freedom of choice is greatest, and, which require a total commitment covering all technical disciplines. Based on strong local presence in cities throughout the country, the client should be able to turn to the nearest office for access to the company's full service offering (Annual Report, 1999). This way, ENGY seeks to combine competence from different areas in order to offer clients appropriate technical solutions in each individual assignment. In addition, efficiency in the service delivery process and on time delivery are important. Through unitary, efficient, and well co-ordinated work methods, the aim is to deliver a total "package" of services which are cost efficient compared to what the clients can buy separately or conduct by themselves (ENGY Business Plan 2000-2004).

#### *Service delivery*

The ENGY services are based on three client values, on which the firm seeks to excel competitors. The values are: (i) high quality and novelty, (ii) efficient project implementation and completion, and (iii) best total cost (ENGY Business Plan 2000-2004). The first value refers to the need to coordinate expectations and demands, so that the results meet the clients' expectations. Novelty means to provide new competence, perspectives, or technical solutions to the client. The second value refers to uniform routines, which make time- and resource management more efficient, thereby freeing time to focus on creativity in the actual assignment. The third value, best total cost, is not equivalent with lowest price. In order to develop well functioning solutions, the scope of the project needs to be clarified before project start up - based on experience and the continuous improvement of competence and support systems. Best total cost may also include relieving the client organization. Further, ENGY emphasizes the importance of keeping the client's needs in focus, thus, building value together with the client. Close collaboration with clients during service delivery increases familiarity with client problems, which again improves the ability to meet individual client needs. Feedback from clients is also important. Hence, completed assignments are evaluated by clients in order to constantly improve service delivery quality, cost, and efficiency (ENGY in Norway, publicity material). Major investments are undertaken to further develop common working methods in order to enable efficient client services.

In service delivery, employees from various technical disciplines, regions, and countries collaborate by utilizing the joint methods, processes, and work tools of the so-called ENGY-system. For example, when a firm is bought up, there are clear procedures for how to facilitate efficient integration of the new firm. The acquired company gets the same administrative and functional systems as the larger corporation, but keeps its name for a while. However,

with the addition of the ENGY name first. For example: ENGY Tech, ENGY Electrical etc. According to a top manager, this is done to maintain the new firm's established client loyalty, whereas at the same time building the ENGY reputation through services for new client groups. In this respect, the ENGY IT system is important in order to develop and sustain such collective procedures on how to deliver services. Yet, IT is primarily used as support for the professionals to enhance efficiency during service delivery implementation, rather than as "products" to be sold in the actual delivery. Each project is run by a project leader, who is also responsible for team composition. Project teams consist of co-workers representing one or a diversity of functional fields. Depending on the size of the project, the section or division manager has the overall responsibility for the project. All managers, except the top management team, work part time in project assignments.

#### *Resource base*

ENGY employees consist of newly educated people as well as experienced seniors from both private and public sectors. Both engineers and civil engineers work in the firm. However, at the Oslo and Trondheim offices, the majority of employees are trained at NTNU. Smaller local offices, like the Tønsberg office, often prefer engineers before civil engineers. According to one office manager, the explanation relates to less competition for jobs compared to larger cities like Oslo and Trondheim. Further, there is an interest in hiring people from the area, as these have relations to the community, and are thereby also easier to retain. In addition, at smaller offices, the salaries are claimed to be of larger relative importance, and 'engineers' usually demand lower salary than 'civil engineers' with the same experience. In addition, 'engineers' are often regarded as more practically oriented than 'civil engineers', and thereby quicker in reaching a certain practical work level. Overall, at ENGY, personality and the likelihood that the candidate will fit in with potential colleagues are emphasized above good grades. Moreover, ENGY offers an introductory program for new hires. The aim is to "... *equip new colleagues with an understanding of our common organizational culture and competences*", as expressed by one top manager. In addition, systematic efforts are made in terms of coordinating and systematizing competence, within as well as across, engineering disciplines and office units.

From the presentation of these main value creation components, a generic strategy for ENGY is suggested.

#### *Generic strategy in ENGY*

It seems as if ENGY resembles elements from each of the three strategic modes set forth by Løwendahl (1992; 1997). The firm emphasizes

competence and novelty as well as good client relations, and efficiency. However, because ENGY has a core portfolio of services, methods, and solutions, which are supported by a uniform system for routines and procedures of which IT plays an important part, it is argued that the output based approach seems to outweigh the two others. This view also finds support in the presentation of the company background in chapter 3, where a strong corporate culture of collectivity was emphasized as important in ENGY. The external ownership further supports an output based strategy (Løwendahl, 1997). Also, ENGY seems to be able to sell assignments based on multi-disciplinarity and company reputation. This implies that clients accept contracts that do not name the professionals who are going to be involved in the project. According to Løwendahl (1997), this can be taken as a clear indication of a successful development of collective routines and company reputation – elements which are crucial to an output based firm. In addition, the focus on standardization related to procedures of service delivery, combined with recruitment of competent people and graduates, yet, not the very best in terms of academic education and grades, seem to match an output based strategy better than an expert based problem solving strategy, or a client relation based strategy resting on personal relationships with clients. Further, based on the high emphasis on organizational culture, databases for competence sharing, and routines and procedures related to methods and projects, it seems as if the competences in ENGY are primarily organizationally controlled. In general, these ENGY characteristics which are argued to relate to an output based strategy seem to be well in line with the firm's efficiency focus. This also suggests that the type of services ENGY offers seem chiefly to relate to what March (1991) labels exploitation rather than exploration. Central elements of ENGY's generic strategy are summarized in table 17.

Table 17. Generic strategy in ENG Y

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<b>Output based generic strategy</b>	
<b>Domain choice</b>	Offers engineering consulting services in Norway and the Nordic region based on quality, efficiency, and best total cost. Seeks multi-disciplinary projects and tries to get assignments before tenders are invited.
<b>Service delivery</b>	Both exploitation and exploration based services for and with clients, however, with an emphasis on exploitation. <sup>45</sup> Heavy weight on IT to support standardization and similar service delivery procedures based on collectivity and organizational competences.
<b>Resource base</b>	A mix of experienced professionals and newly educated people, both civil engineers and engineers. Competences are primarily organizationally controlled.

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From the starting point of seeing ENG Y as a company representing an output based generic strategy, the following section elaborates on competence development in the firm.

## 6.2. Competence development

First, CD in ENG Y is explored by looking at the firm's CD policy, i.e. what is done from the firm's side in terms of approach to and orchestration of competence development. Data is based on written company material and interviews with managers. Second, the question of how people in ENG Y develop competence is investigated according to investments in CD, followed by CD through daily operations. Data is primarily based on interviews with managers as well as regular employees representing different sections and divisions in the firm. Fourth, CD facilitators and constraints are pointed out from a joint view on the two routes to CD. Fifth, the type of competence developed is addressed. Based on these investigations, the way in which competence is developed in ENG Y is suggested.

### 6.2.1. CD policy

In written materials, such as annual reports and policy documents, "*human capital*" is emphasized as "*the key to success*", and competence

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<sup>45</sup> It is important to note that the extent to which exploitation and reuse strategies are utilized is seen relative to the PSFs studied, not to the entire population of business firms. Compared to a traditional manufacturing firm or a standardized service firm like McDonald's, ENG Y would be classified as relying relatively little on exploitation.

development is given high priority. For example: *“The firm’s human capital is made up of the aggregate knowledge and experience possessed by the employees. In a service company like ENGY, the employees are a basis and a key factor for the company’s competitive strength. By actively pursuing competence development, competitiveness is enhanced and profitability increased”* (Annual Report, 1999).

As stated above, three core values drive the ENGY business and its services. Together with the ENGY Business Plan, the ENGY-system is central in order to fulfill these values in all assignments. Hence, competence development is included in, and represents, an important part of the ENGY-system. According to the top managers, the ENGY-system is the *“common working method which best enables the firm to deliver the three client values”*. The system is a basis for work and development, and an umbrella term for the tools used by the consultants in their day-to-day job, including the technical CAD systems. The system focuses on practicable and efficient work methods and incorporates knowledge recycling, quality systems reporting, management and information systems, as well as decision-making and work routines (ENGY IT-platform, publicity material). Says one top manager: *“The content of the assignments vary, but the system is a guarantee that we carry out the projects in a consistent way”*. Through collective routines supported by the ENGY-system, the aim is to reduce time spent on administration. The system helps each worker to enhance efficiency, and thereby *“provide space for more creativity in the actual assignments”* (top manager). In addition, extensive use of what is referred to as *“control by the person next door”* is practiced. This means that the (end) services are to be quality checked and approved by a colleague in order to secure that the delivery meets the standards required. Together with a common IT platform, the idea is that homogeneous routines will simplify the daily work at each office and facilitate collaboration between offices (ENGY IT-platform, publicity material). Hence, the IT platform, which is also a part of the ENGY-system, needs further elaboration.

The reason for the increased emphasis on IT is to better coordinate efforts and activities within each country as well as throughout the Nordic region. So far, people have worked on a variety of systems at different offices depending on the systems they used before being merged into ENGY. Consequently, *“... it is easier to collaborate within the same office than between different offices. In particular, it’s difficult to efficiently utilize competence and experience across the countries. Therefore, we need IT systems which add value to ourselves and to our clients”* (top manager). Important parts of the IT platform are a common intranet and new systems for project management. The aim of the latter is to increase efficiency in terms of planning time and the use of people in projects. It also eases



collaboration between offices and enables opportunities to make use of people with different competence. In addition, the system makes it easier to formulate bids and fetch out budgets and analyses. This way, billable hours and results become more visible and available, which again provides a better basis for the planning of future assignments. Further, the aim of the IT platform is to help find colleague specialists within ENGY when needed, and to get to know relevant reference projects. In addition, new information about projects and people can be fed into the system and saved. Says one top manager: *“Through the implementation of more efficient IT solutions, we are able to take advantage of our size and competence in a better way, which again increases ENGY’s competitive ability”*. With this emphasis on IT, ENGY has set as its goal to be the best on IT among the technical engineering companies in the Nordic region (ENGY Business Plan 2000-2004).

Further, recruitment, training, education, and career paths are also included in the ENGY-system. In order to attract good workers, the following elements are pointed out:

- Provide opportunities to work on varied and demanding jobs
- Offer a professional network in our own and other company units through assignment cooperation and meetings for professional workers
- Good technical aids
- Practicable procedures and systems
- Good social milieu, for both employees and their families
- Work systems designed to prevent over-usage of overtime work
- Competitive salaries and allowances (ENGY in Norway, publicity material)

In addition, special events such as presentations for engineering students and participation in university and college job fairs aim at awakening interest among young future engineers. Moreover, competence development is stated to take place in projects through collaboration, attractive career opportunities, education, and through recruitment of younger people. However, the basic premise is that CD should take place through opportunities to work in stimulating and challenging projects (ENGY in Norway, publicity material). The firm also offers various employee and management training programs. In addition, participation in research and development projects attracts competence and leads to innovation and product development within the company. Also, active utilization of the ENGY Group’s internal job market creates a potential to retain and develop competent personnel (ENGY in Norway, publicity material).

Opportunities for development and responsibility include two primary career opportunities: one as consultant in terms of becoming a specialist, and

another as manager. At ENGY, management is about “... *creating a stimulating milieu where people can learn from each other, together with the client, and transfer this knowledge to others in future projects*” (ENGY in Norway, publicity material). In this respect, one goal is to be better at learning from each other. In addition, working together with common methods is emphasized: “*Without common methods it becomes more difficult to collaborate, and without collaboration we cannot develop our competence*”, says one top manager. Further, the single individual has a personal responsibility to contribute to the realization of the firm’s vision. “*Both individually and together, we must develop our competence in order to become the number one company to deliver the client values we have chosen to compete on*” (ENGY Business Plan 2000-2004). Moreover, due to clients’ increased demand for functional multi-disciplinary services offered by the same firm, competence on the multi-disciplinary complexity in projects is emphasized as important in ENGY.

The above statements illustrate that the CD policy in ENGY emphasizes that competence development is to take place through direct collaboration between colleagues, and with clients, in stimulating and challenging projects. In this respect, learning from each other stands out as vital. To support this learning through collaboration approach, ENGY accentuates the importance of unitary work methods and procedures. To aid such common routines and ways of working, IT plays a crucial role. The IT system also serves as a source of learning. From easy access to information about people and previous projects, the idea is to enhance a person’s competence base from which decisions are made on how to do current and future work. The aim is to conduct all assignments in accordance with the three core values for service delivery. Such use of databases resembles what Hansen et al. (1999) term the people-to-documents approach. Yet, the principal approach to CD in ENGY is through face-to-face collaboration in client assignments. As a result, in the terms of Hansen et al. (1999), ENGY primarily relies on a *person-to-person approach* to the development of competence, however, with heavy support from IT systems and databases.

With this material on CD policy serving as a back drop for further understanding competence development in ENGY, the next section moves deeper into how CD actually takes place with regard to investments in such processes.

### **6.2.2. Investments in CD**

Continuous competence development is a major concern at ENGY. In several written materials, it is stated that CD should take place through opportunities to work in stimulating and challenging projects, in which employees are given opportunities for development and responsibility

(Annual Report, 1999; ENGY in Norway<sup>46</sup>). Thus, there is a strong emphasis on learning in projects, as underlined by one of the top managers: *“If it isn’t useful for the projects, then it’s nothing we want”*. Several efforts are designed to enhance competence, and thereby improve the service delivery to clients. According to the interviewees, these efforts include ‘coordination across office units’, ‘the ENGY-system’, and ‘internal and external courses’. At the same time, ‘a personal responsibility for CD’ is emphasized.

#### *Coordination across office units*

ENGY is made up of a number of regions with several local offices. The firm does not operate with the traditional structure of a head office and branch offices (ENGY web site). Each individual unit controls its own operations and development, and is designed to cover the need of the local market. Yet, there is close collaboration between different geographical locations domestically. In terms of CD, ENGY has organized a pool of consultants called ‘functional coordinators’. This means that every engineering discipline at each office unit has pointed out one person to represent and take special care of their functional area. The functional coordinators within each discipline meet regularly once a month, and their task is primarily to *“pay attention to new developments in the given field of engineering, distribute information to colleagues, and organize arenas for competence sharing”* (functional coordinator). Once every year, people from different units who work within the same engineering discipline meet to discuss and exchange experiences. The purpose of this establishment is to contribute to functional competence development across units. In addition, says another consultant: *“These gatherings are not only important to our learning, they also facilitate close relations among people at different locations. This again, makes it easier to call each other if we need assistance in projects”*. In addition, meeting places are organized where people from different engineering disciplines participate. The aim is to improve collaboration across multiple disciplines.

According to the manager informants, there are also several meetings within and between different levels, units, and sections in the organization, as well as across the countries constituting the Nordic enterprise, that both directly and indirectly concern CD. For example, the top management group in Oslo meets with peers in local Norwegian units and in Sweden and Finland. These meetings are primarily of a coordinating nature in terms of attempts to systematize and standardize CD efforts to each unit. In this respect, the ENGY-system is important.

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<sup>46</sup> Booklet distributed by the ENGY Group.

### *The ENGY-system*

At the time of the interviews, ENGY invested heavily in the development of common working methods in order to enable efficiency and high quality services to clients. The goal of the ENGY-system is to develop structured and common working procedures in order to increase the efficiency of each worker. By continuously improving the working methods, the idea is that the collaboration internally and across offices will improve, whereas the risk of making errors is reduced. Related to CD, the system is also a platform for individual development, as it links the performance reviews with the annual training and development plans of employees. However, according to one of the informants with managerial responsibility, the firm needs to improve its follow up routines of each employee's actual development: *"It's good to have the technological equipment, but we must not forget that plans need to be followed up by people. The point is that people actually accomplish their plans – independently of whether this is noted electronically or on a sheet of paper"*.

In addition, an internally developed database program called ENGY-base is used as a project tool. All tenders, project information, clients, and contacts, etc. are registered in this database. The database is also of help in steering the assignments. *"We use it to estimate our time"*, says one project leader. From this information, so-called CTRs (Cost, Time, Resources) are made. In addition to a database for storing and retrieving information about projects, efforts are made to co-ordinate this with competence sharing based on experiences with the particular project. Positive and negative experiences are to be registered, so that colleagues can search for relevant information about how previous projects were handled. Says another project leader: *"Good solutions need to be shared so that others don't have to "invent the wheel" once again. But equally important, less fortunate outcomes must also be shared in order to prevent others from making the same mistake"*. After project completion, and, as part of the assignment, the project leader must fill in a small summary of the experiences related to important characteristics of the project. However, the development of a system for sharing such experiences is still at an initial stage. The aim is to make it a source of competence sharing, which should be easy to access for all employees through well-structured searching criteria.

The ENGY-system further includes a quality module, as the firm operates within the ISO 9001 requirements. The content of the assignments vary, but the system is to ensure that assignments are conducted in a uniform way throughout all offices. A quality council, 'K3', governs and coordinates the

quality work within the firm.<sup>47</sup> Each of the seven units of ENGY Norway has its own quality leader, and these constitute the K3 council. The head of K3 further coordinates with the other Nordic offices in order to maintain consistency also across countries.

Other investments in CD are internal seminars and external courses.

*Internal seminars and external courses*

Since ENGY is a large company representing many engineering disciplines, the firm often relies on internal expertise and internal courses. In addition, such arrangements are less costly compared to external courses. According to the informants, both internal and external courses contribute to their CD. ENGY offers an introductory program to newly hired employees. A two-day course is run by the top management in order to introduce new hires to ENGY's strategy and vision, the overall IT systems and ways of working in the firm, as well as to the quality system. According to the informants, this program is a positive way of introducing and including new people into the company. Further, people in ENGY have some internal seminars going on at a regular basis within each functional field. Often, seminars take place in evenings after regular office hours. According to one consultant, this is seen as negative, because *“competence development gets characterized as some kind of “missionary work”, whereas it should be a natural part of the job”*. This means that people have to “sacrifice” some spare time in order to gain necessary competence for the firm. *“When you already work a lot of overtime, you're not inspired to devote more time and not even get paid for it. As a result, you don't ask for more courses either, because later you have to catch up with the time “lost”*”, says the informant. Participation in such internal events is on the one hand voluntary. However, on the other, employees are expected to participate. The meetings are generally initiated by an experienced senior,<sup>48</sup> and the purpose is to share functional competence.

At the time of the study, at least two major internal courses were running. One course, directed towards sales, business economics, and project management, was primarily intended to include all employees with project leader responsibility. Another course, a leadership development program, comprised about 30 current and future leaders. The aim of both programs

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<sup>47</sup> “K3” stands for quality (kvalitet), cost control (kostnadsstyring), and competitive power (konkurranskraft).

<sup>48</sup> In terms of fees, a distinction is made between people with five years of experience and people with more than eight years of experience. In addition, there is a distinction between engineers and civil engineers. However, people with more than five years of experience in the firm is typically regarded as “seniors”.

was also to visualize the opportunities for personal growth throughout the organization. In addition, a course on marketing and customer service was recently conducted. The aim of this course is to learn how to approach and treat clients depending on whether the client represents a one-time builder or a professional recurrent builder. Regarding external courses, all informants referred to courses they had participated in during the last years. On average, people seem to participate in external courses about 3-6 days a year, which is consistent with the firm's policy on external course participation. However, one informant says that he has been to many external courses during the last two years, and that these courses primarily regard functional engineering and computer software programs. For example: *"I have participated in a lot of courses this spring, particularly within IT. I have never got a 'no' when registering for these courses. In addition, we have invited external lecturers on particular functional areas which require special competence"*. In contrast, a colleague in another division says that there are few courses, both related to IT and the functional part of the job. These differences in opinions may relate to the general development which characterizes each functional field. In addition, initiatives to course participation are primarily the responsibility of each employee, as discussed below.

#### *A personal responsibility for individual CD*

At ENGY, each employee has a personal responsibility for his or her competence development (Annual Report, 1999). This means that it is very much up to each individual to actively seek relevant and necessary learning. *"We simply have no interest in "herding" people. In a way, you become your own "lucky star"*", says one top manager. The manager uses the image of a buffet. *"You can walk over to the buffet, but you have to pick and eat the items yourself. Nobody does the job for you"*. However, initiatives to enhance CD vary among employees, and some claim to do less than expected. According to one manager, a challenge is to motivate people to take courses within areas where they need competence development: *"Trouble is that people will rather take a special course within a field they already master, because that suits their interest best. As manager, it's my job to strengthen our weaker sides in order to broaden our working areas and be able to take on various jobs when they occur"*. In contrast, a few people appear to do far more than normally demanded. One example is a senior who develops work-related competence in the spare time. His work is also his hobby, as he enjoys seeking out solutions by "playing" with computer programs: *"I spend much time at home, using CD-ROM with sound and visuals. I have learned a lot from that. If you want to keep up with the rapid developments, you have to use leisure time as well"*, he says. Again, it is indicated that the pace of development within industries as well as between particular fields of engineering differ. This is due to the type of technology, material, tools, etc. needed in a given field. According to this project leader,

some functional fields are characterized by a more aggressive pace in terms of both major improvements and minor upgrades:

“I joke with the construction and building guys, saying that they built the walls of Jericho with the same materials as they use today. There has hardly been any development (laughs). In electrical engineering, on the other hand, it’s tremendous development, particularly within IT but also within audio and image design, which we use in auditoriums and teaching equipment. Therefore, we need to keep up in order for our clients to get a building which is modern - also after the building is actually finished” (project leader).

This indicates that there may be a higher degree of “wear and tear” on functional competence in fields characterized by lower degrees of development compared to areas representing more rapid changes. Hence, the latter demands a higher extent of competence updates. Further, some seniors seem to be heavily involved in activities enhancing CD beyond regular assignments through e.g. teaching at technical universities. It seems as if experienced people, to a much larger extent than less experienced, involve themselves in CD efforts beyond the firm. In this respect, being affiliated with different types of networks is a very important part of particularly some managers’ work. Several of them mentioned that their percentage of project work is reduced in order to allow more time for networking activities. Networks provide opportunities to gather information about possible future assignments. Thus, in order to supply the rest of the firm with projects, networking becomes important to get challenging assignments with opportunities for CD. It seems as if the emphasis on networks is even more important in the local offices of Trondheim and Tønsberg, compared to the Oslo office. Says one manager:

“I don’t learn much in projects anymore, because I’m less involved in them. As division manager, my aim is to have 50 % billable hours. I spend a lot of my time getting projects. An important part of this is building networks, so that we get jobs directly. That’s most beneficial. I’m chairman of the local RIF department, and a board member of a municipal technical functional association. This is to establish contacts and networks, particularly in the latter, because most of the work that we do is for the municipalities. Then, I get to know what goes on and what their future plans are. It’s important to know when they decide to build a new plant, so that we can be prepared and position ourselves in order to get the assignment” (division manager).

Hence, networking appears as a central activity for work generation in the first place, which again heavily influences CD, both directly and indirectly, depending on the assignments obtained. Further, the data also shows that network relations are highly personal and tied to individuals. Certain managers seem to enjoy information-rich positions in a network, and are,

thus, of crucial importance to the firm, as these people have developed strong relations to contacts in a variety of settings. Overall, the influence of individually driven initiatives in the development of competence is illustrated both directly in terms of personal updates, as well as more indirectly in terms of managers' networking activities.

#### *Further analysis*

The informants in ENGY say that they develop competence through internal seminars and external courses. The internal seminars, such as the introductory program and the functional evening seminars, correspond to Nordhaug's (1993) classification of internal training, whereas the external courses correspond to what he terms external training. The leadership development program, the project management courses, and the introductory course are conducted as customized in-house arrangements. However, whereas there is a clear emphasis on CD from the top management side, some informants are discontent with the actual priority given to such efforts. In particular, this concerns the conducting of courses after regular office hours. From a cost perspective, however, this seems efficient because the evening courses do not take place at the expense of the billable hours to clients (Maister, 1993). In ENGY, the split between internal and external training activities seems to vary from individual to individual. Typically, each worker participates in at least two external courses each year. These courses largely aim at functional competence development. The internal courses also concern functional development, but to a larger degree they put issues such as project management and the learning of unitary routines and procedures on the agenda. This suggests that the functional CD in ENGY primarily relate to what Nordhaug (1993) terms technical trade competence, whereas coordination and project management in terms of cost, time, and resource management are of a more firm specific nature. In this respect, Nordhaug (1993) claims that it is economically more rational for a large company to rely more on internal training compared to external training. However, this must also be viewed in light of the type of services the firm offers.

Building on Løwendahl (1997), PSFs which sell output based solutions seem less dependent on developing firm specific functional expertise than those selling highly innovative and expert based services. Rather, for a firm relying on an output based generic strategy such as ENGY, common routines and coordination of activities seem more important. In this respect, several specific internal arrangements are organized. In addition, particularly assigned people serve as functional coordinators of engineering disciplines within and across offices, and the task of the K3 council is to ensure that the services fulfill required quality standards. This makes the internal arrangements and the ENGY-system customized to the coordination needs



and procedures of ENGY. Hence, the internal training efforts in ENGY, conducted in order to enhance unitary procedures and efficiency, seem well in line with the firm's choice of overall strategy.

Parallel to the company initiated CD efforts, each employee has a personal responsibility to learn and stay updated. The consultants have a personal responsibility for being able to deliver services to the standards required. However, particularly less experienced individuals typically seem to make few initiatives to enhance their competence beyond the projects. In contrast, a few very experienced project leaders claim to spend a lot of time on work related competence development also in their spare time. In ENGY, the managers have a particular responsibility towards networking for the sake of gaining projects with opportunities for CD. According to Maister (1993) and Løwendahl (1997), establishing good relations through networks with existing and potential clients are critical in order for a PSF to survive. However, a manager's strong personal relationships with clients can also represent a threat if he wants to exit the company, because such relations increase dependence on the single individual involved.

The CD policy is highly focused on internal development, and emphasizes the importance of the interplay between people and IT systems in competence sharing. A lot of investments are undertaken to enhance coordination and efficiency across offices and functional disciplines, such as e.g. the ENGY-system and the ENGY-base. However, the informants' actual experiences with the IT investments do not yet seem to fully achieve what the policy prepares for. On the other hand, the implementation of the ENGY-system is still in a relatively early phase. Thus, its concrete impact on CD is difficult to ascertain at this point in time. The choice to heavily invest in IT seems to be anchored strategically based on strategy and the large size of the firm. The aim is to increase efficiency with regard to systematization and easily accessible databases to support CD throughout the firm. According to Starbuck (1992), formalization and systematization of routines are required in large firms in order to increase and sustain the firm's efficiency and effectiveness as it grows. Hence, such investments seem beneficial viewed in light of ENGY's generic strategy as well as in terms of the large and rapidly growing company size.

Overall, the professionals in ENGY develop competence based on *both internal and external training*. The internal training primarily concerns CD in terms of project management, learning unitary procedures and common ways of working, as well as functional disciplines, whereas the external training primarily concerns functional CD.

Next, CD through daily operations is addressed.

### 6.2.3. CD through daily operations

Notwithstanding the efforts made to improve the resource base in support activities, as well as the high emphasis on technological equipment and databases, all ENGY interviewees claimed that the most significant impact on CD came from learning in actual project work. In service delivery, the following stand out as influential to CD: ‘learning by doing in different project roles and phases’, ‘small and large projects’, ‘multi- and uni-disciplinary projects’, ‘public and private sector clients’ and ‘resource utilization based on economic concerns’. Each of these issues is elaborated on below.

#### *Learning by doing in different project roles and phases*

The high emphasis on learning by doing as most important to CD stems from the view that each project has its unique requirements and challenges to be solved. In this respect, the importance of continuous communication between different actors in order to make the construction work in the end is highlighted. For example: *“I think the learning process can be illustrated through situations where you get stuck with a problem. To solve the problem, you must get assistance from other colleagues with more experience in that particular area. That’s a common way of learning here”* (division manager). Further, projects are carried out by people in different roles such as project leader and project co-worker. Newly educated employees serve as co-workers, while experienced people work both as project leaders and co-workers. However, one manager says that in order to challenge young employees, he has sometimes used recently educated people as project leaders of very small assignments, for which he has kept the overall responsibility. People with a few years of experience in the firm claim to learn most from working together with experienced senior colleagues. However, these seniors can also be external collaborators. In some cases, ENGY has established connections to some very experienced people who are hired on an hourly basis. One of the younger informants tells about a retired senior who is still fully occupied with work. This “resource person” has been vice president of a competitor firm, and division manager before that. *“I have gained a lot from his very comprehensive experience. In fact, I think it’s from him I have learned most since I started working in this firm”*, he says. The collaboration between the informant and the senior is explained as follows: *“There is no one-way path in any direction, but a dialogue on how to solve the problem”*. Depending on the time available, the work process includes the making of a proposition which the senior reviews and comments upon, or, if the issue is very complicated, it requires face-to-face discussion of the problem, and how to approach it.

At ENGY, more experienced people also learn by doing in project work. Says one interviewee with managerial responsibility: *“Because of my expertise within this specific area, my help is often asked for in a number of projects where I just go in, assist, and then leave. Whereas in other projects, I’m involved from start to finish. Clearly, I learn most from the latter”*. The seniors further claim to learn the most from being project leader, as well as through collaboration with other peers. The managers try to provide people with challenging tasks. In this respect, one project leader says that *“... sometimes I’m terrified about what they think I know. On the other hand, I also learn a lot from this responsibility”*. Further, most informants discern between routine and more innovative tasks. Innovative tasks are associated with the pre-phases of projects. These phases stand out as important, because they often involve high degrees of innovation. This is where the frames are set and critical decisions made. Seniors say that they learn a lot from being involved in the innovative pre-phases of project work, for example: *“Degree of creativity or routine depends on which phases of project work we are talking about. The pre-phases when we make the concepts and develop things involve the most creativity, while later phases consist of more production in order to draw and make things ready”*. Another senior compares the innovative work in the pre-phases of project work to routine activities:

*“When we make climate constructions, we use energy lights. These have to be ordered and counted throughout the whole building. That’s routine work. Terribly boring. CAD makes it easier, but still we have to count each time a pipe goes through a wall, and an equivalent amount of holes must be ordered. On the other hand, the most innovative work is system solutions, meaning what overall system to choose. Taking part in shaping a building, coming in early and determining where it should be situated, are part of this innovative process. Seeing the totality of systems and making everything co-function is important to my learning”* (project leader).

In contrast, juniors typically work in the later phases and on parts of the project. However, understanding the totality of the project is also emphasized as important to their learning. Says one project leader: *“The project may stop, and when it starts up again, it might not involve the same person. As a result, the learner does not get the total picture, or the right order of the project phases”*. Therefore, it seems important to follow projects from start to finish, and in the way they should, in order to achieve competence related to the totality of the project, as well as its constituent parts. Further, project phases are closely related to the size of the project, as discussed below.

### *Small and large projects*

According to the informants, projects consist of parts, and every project involves all of these parts. However, small projects move very quickly through each phase. As a result, opportunities to dig very deeply into the problems of small projects are restricted. In contrast, large projects which run for a long time, provide opportunities to get embedded in the problem at a different level. Says one senior consultant: “*Large projects involve opportunities both in terms of resources and time to be innovative, to search for optimal solutions and become absorbed in the problem. Small projects, of course, also get attention, but not in the sense that you have time to develop and learn much*”. The reason given is that limited time and budgets force small projects to follow a routine course of work. The informant further emphasizes that routine must not be seen as negative: “*It means that you have to do all the different activities involved in a project because they are required*”, he says.

This illustrates that project size, in terms of large and small projects, seems to influence learning. Here, the project budget plays an important role, as it sets the frames for how much time can be spent on probing problems and solutions. Given generous budgets, however, a small high-budget project may also involve great development. But such projects are rare, particularly within the engineering business. Exceptions are clients who “*simply want the best in terms of advanced sophisticated requirements and have the resources and the financing for creating such an environment*”, says one senior. In such projects, learning is promoted by few restrictions on time spent on the problem in terms of finding alternatives and choosing from a broad set of possibilities, as this gives opportunities for exploration and reflection. In comparison, informants also emphasized that small, low-budget projects have a positive impact on CD, because such projects put high demands on creativity to solve a problem – given limited resources, combined with high time pressure. Further, small and large projects closely relate to the competence required on the assignment, as well as the combination of different engineering disciplines, as addressed in the next section.

### *Multi- and uni-disciplinary projects*

Informants of ENGY distinguish between CD in multi-disciplinary projects (projects requiring different engineering specialties), and uni-disciplinary projects (projects within one field of engineering). In general, the main task is to construct a building and make it function. Then, competence on how different fields depend on each other and how to work together is important. Such competence is developed and maintained in multi-disciplinary teams consisting of professionals from a variety of functional fields. For example, in electrical engineering, there is extensive collaboration with construction

and WWE,<sup>49</sup> in particular. The electrical engineers attach electrically all equipment WWE delivers. A critical part of this work is to make sure there is enough space for the different parts: *“We want a main switchboard room where we have a large distribution. We want shafts so that we are able to get harnesses and fuses up in each floor”*, says one project leader. Hence, in order to avoid conflicts, close collaboration among all the functional fields involved is needed. In addition, there is interaction between the consultants and the architect. *“If the architect only wants 30 cm above the ceiling, but we need 50 cm, we have to make this clear. The architect may reply that there isn’t room for what we asked. Then, we must balance the requirements on both sides. There’s a lot of back and forth to make it a functional building in the end”* (project leader).

Hence, in multi-disciplinary projects it is important not only to solve one’s own problems, but also to see and understand the problems and challenges of other disciplines. In other words, understanding the dependencies between engineering disciplines and how they co-function becomes essential. Another project leader explains: *“If you can’t involve, commit, and identify yourself with challenges related to the other functional fields, you will not be able to create good solutions either. It’s a challenge, but good solutions depend on us working together and being aware of each other’s problems”*. For example, the construction division must adjust so that both electro and WWE get to hide their installations behind the ceiling, even though this complicates the construction of the building, as the construction people often want more piles and baulks in favor of large spans in order to keep the building steady. Says one project leader: *“I have worked in hospital projects, which have relatively complicated WWE and electro installations. Due to these experiences, I have a good opportunity to predict where problems will arise and which areas need particular attention. These are things you learn only from real experience with such projects”*.

As these examples illustrate, multi-disciplinary projects often involve complex work which demands careful attention and experience. Hence, multi-disciplinary projects may also represent a major potential for learning from failure. This is highlighted by an informant as he elaborates on the interplay when working in multi-disciplinary projects:

*“There are a lot of pitfalls to stumble into when planning a building. Sometimes, it looks as if people have been sitting on separate “tussocks” drawing. There’s no space for ventilation nor electro. There are collisions. They haven’t collaborated. That’s poor planning. Often, when we try to get lights up under the ceiling, a huge ventilation channel blocks the way. That*

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<sup>49</sup> Water, Waste, and Environment.

happens too damn often. That's a classic example. As a result, we have to switch to other lights which hang below the ceiling. This is something less experienced drawers don't think of. These are things you learn gradually. When I see a plan drawing, I see it three-dimensionally. I can imagine in my head what it looks like in a real building. We are supposed to discover the conflicts on the drawings, and avoid being called up and yelled at by people at the construction site complaining that it doesn't work" (project leader).

This indicates that working in multi-disciplinary projects may result in important learning regarding how to plan and conduct the functioning between different engineering disciplines. In this process, learning from failure may enable people to "see" and prevent problems before they occur by being familiar with both one's own functional part as well as those of others in the multi-disciplinary team. Further, it is claimed that the impact on CD differs between multi- and uni-disciplinary projects. Relative to the large, multi-disciplinary projects, uni-disciplinary projects are seen as smaller, less ambiguous, and more predictable, as the tasks performed are less diverse and the number of people involved generally fewer. According to the informants, the advantage of working on a project solely within one's own area of expertise is a greater degree of control in terms of what tasks to be solved and in what order. In uni-disciplinary projects, focus is primarily on the functional part. Says one senior: *"If I'm in a project with several disciplines involved, which is mostly the case, I learn, but I don't go deep within my own discipline. I have to go back to colleagues within my respective field to develop such competence. It's a different kind of learning"*. Hence, uni-disciplinary work has the potential to promote more specific, functional competence. This may relate to several aspects. One is that the team is functionally homogeneous, which may reduce tensions resulting from training and socialization in terms of values, scientific approaches etc., and, thus, support functional outcome based on collaboration and competence sharing. Further, competence among uni-disciplinary workers means that they have better opportunities for judging, as well as providing, relevant and critical functional feedback because they all relate to the same field. Finally, uni-disciplinary projects focus specifically on a restricted functional part, which provides time to thoroughly examine a limited element of a problem. On the other hand, multi-disciplinary projects represent the major source of learning for project leaders in terms of project management.

In addition to functional competence among colleagues, clients also contribute to learning in service delivery processes.

### *Public and private sector clients*

At ENGY, the clients are grouped into three categories: The municipalities, real estate companies and building contractors, and others. Different divisions often serve different types of clients. Some almost exclusively work with the public sector. With regard to CD, clients are emphasized to play an important role. A manager refers to a client relationship as a “*symbiosis between different species*” in which the parties involved benefit from the “*cohabitation*”. However, there is a distinction between clients regarded as functionally sophisticated and those without engineering experience. Informants claim that the potential for CD is higher when working with public sector clients such as the municipalities. They are viewed as functionally more competent than clients from the private sector who are not engineers. A manager explains: “*It’s our own boys sitting at the other side of the table*”. However, there is also a difference between private clients whose profession is buying and selling residences and office constructions, versus clients who are not repeat builders. Says another senior: “*It’s easier to work with experienced owners. But on the other hand, they can also be much more demanding because they are used to deal with advisors and constructors*”.

The engineers prefer clients with specified requirements. This includes clients with high degrees of experience from the engineering and construction business. For example: “*... the best is when the client knows exactly what he wants. That way, we can understand the problem and the need clearly*” (project leader). Such preferences seem to increase the chances of succeeding with the project in terms of on time delivery and keeping the budgets. However, in terms of learning, it may be as developing to work on a project for a client with under-specified requirements, as this often results in more discussion at the same time as it puts demand on the engineer’s creativity and ability to present suggestions. Says another project leader: “*Projects where we never finish things are strenuous. We propose suggestions the client turns down, ‘no, we want it such and such’. Then there are many rounds. It takes time, and we can’t make a decision about proceeding*”. This indicates that under-specified problems may lead to frustration. The question is whether this frustration also leads to learning? Even though it may be more demanding in terms of finding out what the problem is when working with clients with under-specified requirements, the degree of CD might be high, especially regarding learning how to deal with client problems in particular and the defining of problems in general.

Finally, distribution and utilization of people in projects impact CD, as illustrated in the following section.

#### *Resource utilization based on economic concerns*

The resource utilization on projects influences CD in service delivery. In this respect, ENGY has established a system for work distribution. One manager explains the purpose: *“It means that if some have too much work, whereas others have too little, I need to know about it so that I can redirect and better balance the work among employees”*. This is primarily a managerial task. However, each functional section has a resource coordinator who has a particular responsibility for distributing work tasks among colleagues. Further, the managers match and name project leaders to the relevant projects. The project leader further elects the team members. Hence, team composition and the kind of practice opportunities individuals get exposed to are often determined ad hoc, within tight time frames, depending on who has time and is available for the specific project. Issues of who needs to develop particular competences in specific areas of project work are not equally emphasized. Naturally, there is a major emphasis on economic measures. Says one manager: *“We sell hours. Therefore, it’s extremely important to keep focus on the economic frames in a project. Otherwise, it will hit back on all of us”*. Secondly, the project leader has a responsibility towards the co-workers on the team in terms of providing information and sharing competence. According to another manager, the firm has put particular emphasis on the importance of budget management in projects, as well as the importance of collaboration in teams, which is *“by and large under control”*. As a result, resource utilization on projects refers primarily to short term economic motives, whereas staffing with regard to continuous CD is neglected.

#### *Further analysis*

Even though an IT system is developed to support a uniform way of conducting service delivery, still, all informants emphasize learning by doing through face-to-face interaction as the most important route to CD in ENGY. Less experienced people learn from working as project co-workers in close collaboration with more experienced colleagues and external collaborators. For experienced senior employees, working as project leader and being involved in the pre-phases of project work provide important learning. Large projects promote CD because they involve many people and provide opportunities for exploration, whereas small projects typically involve few people and more routine activities. Cooperation with clients with specified requirements are preferred, and particularly public clients with technical engineering competence contribute to CD. Typically, thus, collaboration with colleagues, clients, and network persons are emphasized as important to learning in ENGY. In multi- as well as uni-disciplinary projects, collectivity is central to the learning process. This illustrates that learning through social interactions (e.g. Lave & Wenger, 1991) stand out as vital to CD in ENGY. People also learn from individual experiences (Dewey, 1916; Kolb, 1984),



e.g. when working alone on the computer, but still, the most important source of learning seems to come from interactions with other people on how to deliver appropriate solutions.

Multi-disciplinary projects represent an important source of learning in ENGY. Multi-disciplinary projects support broad competence across different engineering fields, whereas uni-disciplinary projects promote deep competence within a single discipline. In literature on teams, multi-disciplinarity can inhibit team process and/or effectiveness (Bunderson & Sutcliffe, 2002), because diverse group members find it more difficult to communicate than do members with more similar perspectives (O'Reilly III, Caldwell & Barnett, 1989). On the other hand, Bunderson and Sutcliffe (2002) argue that by broadening the range of experience and expertise available to a team, multi-disciplinarity can promote team effectiveness. In ENGY, a lot of efforts are made to develop unitary procedures and common ways of thinking both within and across different engineering disciplines. The degree to which these efforts actually increase service delivery efficiency is outside the scope of this study. But, the fact that awareness is directed to the issue, and actions are made to reduce tensions associated with mis-communication between diverse actors is in this study regarded as positive in order to contribute to potential enhanced efficiency. Williams and O'Reilly (1998) conclude that diversity is more likely to have negative than positive effects on group performance. An exception to this pattern is found for the effects of functional diversity or diversity in backgrounds, as functional diversity generally had a positive effect on group performance. Compared to the ENGY material, these team studies support the importance of learning from projects of multi-disciplinary functional fields.

Building on these analyzes of investments in CD and CD through daily operations, the following section brings the two routes together with an emphasis on aspects identified to facilitate or constrain CD in ENGY.

#### **6.2.4. CD facilitators and constraints**

At ENGY, each interviewee states that project work for clients represents the most important arena for CD. Thus, learning by doing in daily work of service delivery facilitates CD. In these processes, project roles such as project leader and project co-worker influence learning. Even though most of the ENGY informants work as project leaders, there are clear opinions that the project leader primarily develops competence related to the totality of the project, whereas the co-worker learns related to different parts of the assignment. Being involved in different project phases is important to both. However, the innovative pre-phases of projects seem particularly crucial to project leaders' learning. Large projects facilitate CD because they provide opportunities for exploration and interaction with various actors. Small

projects, on the other hand, are typically based on a higher extent of routine activities, because the time frames and the budgets are more limited. Uni-disciplinary projects endorse deep competence within a single field, whereas multi-disciplinary projects spur broad competence across different areas of engineering. ENGY primarily opts for public clients with knowledge of technical engineering because competence develops in such relations. Economic concern is the primary foundation for the mix of people in project teams. Considerations of how to support learning in such processes are largely downplayed. This represents a constraint to CD.

Efforts designed to improve competence are important in order to support the service delivery processes. Important in ENGY is the interplay between people and IT systems. Both the ENGY-system and ENGY-base aim to facilitate CD throughout the firm. In addition, the close collaboration and coordination across local offices support CD, e.g. through the efforts of functional coordinators. Due to the firm's comprehensive competence within various engineering disciplines, ENGY relies to a large extent on its own employees to run internal seminars, including an introductory course for new hires. These internal efforts are combined with functional learning based on external courses. In addition, every employee is responsible for enhancing his or her competence in order to deliver the services required. This can both facilitate and constrain CD, depending on the degree to which each employee actually makes initiative for further learning. An effort which may indirectly facilitate CD is managers' engagements in networking activities in order to provide the rest of the firm not only with projects, but also with projects containing opportunities for learning. Even though there seems to be a strong focus on CD, courses after office hours are regarded as "missionary work". This is not seen to encourage course participation. Rather, it can be seen as a constraint to CD. Table 18 summarizes the CD facilitators and constraints identified in ENGY.

Table 18. Facilitators and constraints to CD in ENG Y

	<b>Investments</b>	<b>Daily operations</b>
<b>CD facilitators</b>	<ul style="list-style-type: none"> <li>-The ENG Y-system</li> <li>-Coordination across units including functional coordinators</li> <li>-Internal seminars</li> <li>-External courses</li> <li>-Some seniors initiate CD efforts outside the firm</li> <li>-Managers' networking activities</li> </ul>	<ul style="list-style-type: none"> <li>-Learning by doing in different project roles, phases, and sizes: Project leader: totality including pre-phases, large projects</li> <li>Co-worker: parts, large and small projects</li> <li>-Juniors learn from senior colleagues and external project collaborators</li> <li>-Seniors learn from peers</li> <li>-Challenging tasks</li> <li>-Generous budgets provide frames for exploration</li> <li>-Multi-disciplinary projects: broad competence across engineering fields</li> <li>-Uni-disciplinary projects: deep competence within single discipline</li> <li>-Functionally competent public sector clients</li> </ul>
<b>CD constraints</b>	<ul style="list-style-type: none"> <li>-Courses after office hours reduce inspiration to participate</li> <li>-Policy on personal responsibility for CD, however, particularly the juniors typically make few CD initiatives beyond projects</li> </ul>	<ul style="list-style-type: none"> <li>-Projects which do not follow the right order in terms of project phases</li> <li>-Resource utilization based on economic concerns, while staffing with a view to CD is generally neglected</li> <li>-Ad hoc practice opportunities</li> </ul>

The following section further addresses the kind of competence which is developed through important CD investments and daily operations in ENG Y.

### 6.2.5. Type of competence developed

In ENG Y, what kind of competence is developed through these learning processes? As illustrated in the empirical material, functional engineering competence stands out as crucial. Such competence is developed through project work as well as through internal seminars and external courses, which are designed especially for the functional competence development of people of the engineering design industry. This suggests that in the terms of Nordhaug (1993), the functional competence developed in ENG Y seems to be task specific, industry specific, and firm nonspecific. The argument for firm non-specificity is based on the relatively high degree of use of external

courses in the development of functional competence. 'Functional competence' in ENGY, thus, can be characterized as technical trade competence (Nordhaug, 1993).

Further, the quotes presented in the section on uni- and multi-disciplinary projects illustrate that particularly learning from multi-disciplinarity is emphasized as important. This includes competence on how to make various engineering subjects co-function, in terms of planning, execution, and practical operation. In addition, several of the informants mentioned that the engineering design industry needs to change its focus from single functional fields to a multi-disciplinary view. For example: "*This industry follows the NTH pattern where each functional subject is viewed in isolation to each other. However, we are crystal clear on the point that the clients' projects are always multi-disciplinary. Of interest to the client is the actual product, the bridge or the building, not the specific engineering subjects or the type of material used*" (top manager). Taken together, the development of what can be termed 'multi-disciplinary competence' is suggested central in ENGY.

The utilization of both functional and multi-disciplinary engineering competence links closely to the ENGY-system. The aim of the system is to increase efficiency within and across engineering disciplines and ENGY offices. The system is supposed to promote knowledge about colleagues, serve as a communication channel within the firm, increase commitment to the firm's visions and goals, and secure similar working methods and routines throughout the company. These elements resemble what Nordhaug (1993) terms intraorganizational competence. In addition, appropriate technical IT competence is required in order to operate and make use of the system. In this respect, knowledge of computer software is essential. In the terms of Nordhaug (1993), this suggests the inclusion of standard technical competence. Further, since the ENGY-system is highly customized to the organization, competence also relates to the use of tailored technology and specialized tools crafted in the firm. Such specialized data systems and administration of organizationally idiosyncratic routines and procedures is by Nordhaug (1993) termed unique competence. Hence, elements of unique competence are also associated with the ENGY-system. Overall, thus, competence connected to the ENGY-system is suggested described as 'system competence'.

Further, competence related to project management in terms of keeping control over cost, time, and resources (CTR) is emphasized. Such 'project competence', thus, typically relates to keeping budgets, deadlines, and the use of people within planned project frames. The overall goal is satisfied clients based on three client values. Hence, in addition to project competence, understanding client needs and expectations are essential.

Therefore, close collaboration with clients is emphasized in order to facilitate well-functioning communication with clients. Predefined client requirements were preferred in order to meet expectations and enhance service delivery efficiency. As a result, what can be termed 'client competence' is suggested important. Such competence is most importantly developed through direct interaction with public and private sector clients.

Several of the senior informants, and particularly the managers, mentioned networking through personal contact with current and potential clients as an important part of their job in order to get assignments before tenders are invited. In this respect, the Project Development section plays a crucial role. Hence, what can be termed 'networking competence' involves gaining and maintaining good relations with key people in the local community in order to stay informed about relevant planned and potential construction activities. Networking competence to some extent resembles what Nordhaug (1993) calls industry competences. Industry competences refer to characteristics such as knowledge about current development of the industry, knowledge about key persons, networks, and alliances in the industry, ability to analyze competitors, and ability to form cooperative alliances with other companies in the industry. Networking competence in ENGY refers to many of the same elements, yet, it is not aimed at the engineering design industry. Rather, potential and existing public and private sector builders are the primary targets.

According to Løwendahl (1997), competence resources are either individually controlled, organizationally controlled, or both. At ENGY, the competences are primarily organizationally controlled. As illustrated, this is based on the firm's strong focus on IT systems, project procedures, quality control, and collective culture in order to enhance service delivery efficiency. On the other hand, individual competence development is primarily a personal responsibility. Thus, the degree to which people make initiatives on their own vary considerably. Whereas some take this responsibility very seriously, the majority, however, do far less than expected.

Overall, thus, people in ENGY seem to develop 'functional competence' as well as 'multi-disciplinary competence'. Further, 'system competence', 'project competence', 'client competence', and 'networking competence' are essential types of competences in ENGY. In addition, especially competences related to investments in CD, such as IT systems, project procedures, quality control, and collective culture are primarily organizationally controlled and efficiency related.

Building on the above analyses, the following section ends this chapter by suggesting that a ‘multi-disciplinary and efficiency dominant CD process’ seems to characterize competence development in ENGY.

### 6.3. A multi-disciplinary and efficiency dominant CD process

As shown, competence development in ENGY takes place primarily through collective processes of learning by doing in projects. In this work, the interplay between people and IT plays an important role. The aim is to coordinate and enhance common routines and consistent ways of working in order to increase service delivery efficiency. It is emphasized that the solutions provided to clients are based on competence combined with efficient execution of each individual assignment. With such a strong focus on collectivity, IT, and unitary work systems, these findings are seen to further strengthen the previous suggestion that ENGY pursues an output based rather than a creative problem solving or a client relation based type of generic strategy. To such an output based approach, the mix between people and IT is identified as specifically important to CD in ENGY. However, functional engineering competence constitutes the backbone of the firm. As a supplier of total engineering design packages to clients, particularly multi-disciplinary competence is emphasized as absolutely crucial. Hence, it is suggested that CD in ENGY can be described through a ‘multi-disciplinary and efficiency dominant CD process’. Important elements of this process are summarized in table 19.

*Table 19. CD process in ENGY*

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<b>Multi-disciplinary and efficiency dominant CD process</b>	
<b>CD policy</b>	Person-to-person approach with heavy support from IT systems and databases. Also, a clear policy and reliance on individual initiatives.
<b>Investments in CD</b>	Relies on both internal and external training. Internal training concerns project management and unitary routines and working methods, aided by IT. External training concerns functional CD.
<b>CD in daily operations</b>	Primarily collective through learning by doing (i) together with colleagues in multi- and uni-disciplinary projects, and (ii) through interaction with competent clients.
<b>Type of competence</b>	‘Functional competence’ and ‘multi-disciplinary competence’. In addition, ‘system competence’, ‘project competence’, and ‘client competence’. However, due to the large emphasis on IT systems, unitary work procedures, quality control, and collective culture, competence resources seem mainly organizationally controlled and related to service delivery efficiency.

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Notwithstanding that ENGY pursues a multi-disciplinary and efficiency dominant CD process, major investments are made to strengthen the firm's IT technology and databases to facilitate competence sharing and efficiency. A question is to what extent these organizationally initiated investments actually contribute to CD, or if they rather relate to knowledge management (KM) for efficiency? The next section further addresses these issues from a more sceptical angle.

#### **6.4. Competence development or KM for efficiency?**

ENGY has a quite clear focus on where they are going and what it takes to reach their goals. In this respect, IT plays an important part. Although substantial resources are invested and a lot of effort put into for example the ENGY-system, implementation is still at a relatively early phase of development. Nevertheless, one may ask whether these investments can be seen as KM in order to increase efficiency rather than to contribute to competence development? The purpose of the ENGY-system seems to be to promote unitary procedures and a common understanding of how to handle projects in order to enhance service delivery efficiency and effectiveness. According to Alvesson (2004), many arrangements and activities labelled KM involve extensive use of the available technology such as databases, advanced search systems, sophisticated communication systems, and so on. This is clearly also the case in ENGY. DiMattia and Oder (1997:33) define KM as *"blending a company's internal and external information and turning it into actionable knowledge via a technology platform"*. In this approach, KM basically represents a process run by a particular central agency responsible for the compilation, synthesis, and integration of more or less idiosyncratic work and project experiences for the development of general knowledge (Alvesson, 2004). In a similar vein, competence at ENGY seems to a large extent to be transformed into and expressed in the form of methodologies and solutions in order to serve as guidance for future work. These procedures are used actively in the management of the company to promote common ways of working. The motive seems to be quicker and also better work due to the slack provided by more efficient project management. In addition, such organizationally controlled procedures strengthen company supervision and coherence, important aspects of an output based strategy.

One important purpose of the ENGY-system is to use it to feed, store, and retrieve written material from databases. This material is based on employee project experiences. The idea is that the competence acquired through projects is to be electronically saved for later reuse by colleagues in order to

enhance efficiency based on shared competence from similar problem solving activities. However, it can be questioned whether what is stored in these databases represents information rather than competence. Knowledge is more than contextually relevant data and refers to the exercise of judgement based on insight, experience, and theory (Davenport & Prusak, 1998; Tsoukas & Vladimirou, 2001). This is particularly the case in highly knowledge-intensive firms such as PSFs. Maybe the reduction of the importance of individuals' competence is a reason why the employees have not taken the technology system widely into use at ENGY? Maybe they do not see the system to pay justice to their professional competence? On the other hand, it takes competent people to make use of and turn information stored in databases into knowledge. Hence, an important part of KM may be to learn how to create knowledge from information, because a database of information does not represent value in itself. Yet, training in terms of making use of the system was minimal in ENGY. Even so, McDermott (1999) remarks that the major trap in KM is using information management tools and concepts to design knowledge management systems at all. In this respect, McKinlay (2000) argues that the codification compromises precisely the tacit knowledge such systems were designed to capture. Alvesson (2004) adds another trap, the design of knowledge management systems falls short of the expectation of capturing knowledge. The more management, at least in the strong sense of the term, the less knowledge, he argues.

Hence, the underlying thoughts of KM are being criticized for reducing practice to the implementation of new IT systems for knowledge transfer (Swan, Newell, Scarbrough & Hislop, 1999; McKinlay, 2000). To the contrary, knowledge may not be easily transferred. According to Alvesson (2004), the very idea of knowledge "transfer" indicates a kind of "postal delivery" that may be misleading. This misconception appears when knowledge is treated as a thing-like, objectified entity, as an "it" (albeit intangible), that a company simply possesses, and which can be used, manipulated, or controlled just as if knowledge was "any other" physical object. In other words, there may be danger afoot when knowledge is reduced to something that can be canned and operated by a knowledge manager in the same fashion as were she a warehouse foreman (Alvesson, 2004).

However, despite its shortcomings, the idea of storing knowledge has become popular among many PSFs (see e.g. Hansen et al., 1999), including ENGY. Although written company materials in ENGY speak highly of human capital and the development of competence as key to competitiveness, many so-called CD efforts may relate closer to KM for efficiency rather than CD. On the other hand, a solution and output based firm like ENGY does not require ultimate expertise in every assignment, as



such types of firms can rely more on reuse of existing competence (in which databases can be useful) than for example creative problem solving based PSFs. Still, beyond what is initiated by the firm (and which does not yet function very well), the development of competence at ENGY seems pretty much the responsibility of each single employee. This further suggests that the firm's CD practices are not optimal according to an output based strategy, which emphasizes collectivity and organizational resources in favor of strong individual expertise and autonomy. People spend various degrees of time and effort on competence development, and some do very little to develop competence. Overall, thus, it seems as if CD is not taken very seriously after all, neither by managers nor employees. On the other hand, huge investments in databases for competence sharing, knowledge reuse, and retrieval may nevertheless give the impression of taking competence issues and the development of competence seriously, i.e. more seriously than what actually seems to be the case. Hence, one may well argue that the actual development of competence taking place in ENGY is not of a very sophisticated nature.

## **6.5. Summary**

This chapter has presented and analyzed the findings of ENGY. It is argued that ENGY pursues an output based strategy in general and a 'multi-disciplinary and efficiency dominant CD process' in particular. The CD process of ENGY is characterized by heavy emphasis on efficiency, functional engineering competence, multi-disciplinary engineering competence, system competence, client competence, learning collectively, and internal training. Based on ENGY's strategic positioning, the development of collective competence and organizationally controlled resources become important. The firm is indeed trying to enhance collectivity and efficiency through a large reliance on IT systems. Yet, at the moment, these efforts are not very helpful in terms of actually enhancing people's competence. Beyond investments in technology and databases, CD is primarily the responsibility of each single employee. As a result, ENGY seems a bit far from being at a very advanced level when it comes to actual development of competence.

The following chapter addresses the findings of INFO.



## 7. INFO

This chapter presents the empirical findings of INFO. First, value creation and type of generic strategy are addressed. Second, the CD process is investigated with regard to (i) CD policy, (ii) investments in CD, (iii) CD through daily operations, (iv) CD facilitators and constraints, and (v) type of competence developed. Third, based on this material, a 'client interaction dominant CD process' is suggested as the way in which competence is developed in INFO. Fourth, further analysis shows that profit maximizing in terms of a Cash is King mentality is striking, whereas CD is not taken very seriously. Finally, the empirical findings of INFO are summarized.

### 7.1. Value creation

According to the VCPs of PSFs-framework (Løwendahl, et al., 2001), the characteristics of a company's domain choice, service delivery, and resource base are important to investigate in order to identify its foundation for value creation and type of generic strategy. At INFO, empirical material on these issues is based primarily on written company documents, web pages, the intranet, and interviews with the top manager as well as employees.

#### *Domain choice*

In collaboration with clients, INFO provides advice for goal-oriented external communication, by setting strategic communication goals, monitoring relevant public attitudes, and expressing messages through the use of a selected range of media channels (INFO web site). INFO works for a diverse range of companies, large and small, public and private, Norwegian and international. Clients include business firms, the authorities, the media, individual professionals, and other groups trying to influence public and private opinions. Each group contains very different clients. Especially the business firms vary considerably, including e.g. e-businesses, manufacturing firms, publishers, airline companies, cruise lines, banks, food, beverages, TV channels, pharmaceuticals, and energy companies (INFO client list). However, the goal stays the same, to meet client demands and make the client happy. In this respect, pleasing the client does not mean to simply go along with clients' opinions, but to provide independent advice and to make "unpopular" suggestions if necessary (INFO web site). The result should be documented advantages for the clients. Therefore, INFO is very concerned about measuring the effects relative to the client goal, be that in terms of sales, number of web searches, or business contracts. While acknowledging the difficulties in pricing and measuring effects, the firm wants to rely on effect-based solutions like "no cure no pay" to a higher

extent. One reason is, as exemplified by the CEO, that advertising agencies run campaigns for several million NOK, often without noticeable effect. On the other hand, positive features in the newspaper or some hours with communication advice before a TV interview with a manager may contribute to improving a brand or a company's reputation through positively influencing the public opinion. Hence, according to the CEO, there can be a major mismatch between the hours spent on a job and the actual effect.

Some clients require help for a short period of time, including hiring consultants on an hourly basis to address particular communication challenges related to a specific occasion. However, the majority of the clients represent long-term relationships. For example: *"I went through the client list yesterday, and found that remarkably many of our clients have been with us for over five years. That's pretty long in this business"* (client responsible). The most common form of client co-operation is through retainer agreements where INFO works on a day-to-day basis with PR plans and communication strategies. Short-term projects are often used as an opportunity for INFO to introduce the firm and its services, which again may lead to recurring client projects as well as new clients if the word is spread that INFO does a good job. According to the CEO, this is frequently the case, as the firm enjoys a good reputation: *"A large part of our clients first made contact because they had heard about us via their circle of acquaintances"*. As part of the firm's reputation building, people of INFO have made a conscious choice on how they want to appear. For example, *"There are enough white collar workers in this business. We don't want to be associated with them. Our image is to be homely and easy-going"* (project leader).

#### *Service delivery*

According to publicity material, goal directed and efficient communication at INFO starts by determining strategic communication goals and investigating target group opinions. In this process, INFO seeks to provide services customized to meet the needs of each particular client. To this aim, INFO masters a variety of communication channels. What works best vary from case to case and from target group to target group. At INFO, it is important to be flexible without special functions tied to particular types of means. Says the manager: *"We choose to do what we consider to give the best result. Thus, we put together groups which master relevant means such as e.g. media contact, editorial production, presentations, seminars, events, multi-media, and printed matters"*. For special tasks which INFO does not handle alone, external collaborators are brought in. For example, large surveys are conducted in collaboration with MMI (one of Norway's largest agencies in market research and consumer insight). At INFO, services are grounded on three core values: ethics, effect, and enthusiasm. According to

the INFO Personnel Handbook, “ethics” means that the company follows the ethical guidelines of the Norwegian Public Relations Consultants Association (NPRCA) and the International Communications Consultancy Organisation (ICCO). “Effect” means that everything INFO does is done for the purpose of achieving the goals set forth together with the client. “Enthusiasm” means to care about the clients, the people and their businesses, and understand their concerns and situations. Such enthusiasm is emphasized as helpful in order to give single clients the best advice.

#### *Resource base*

The CEO of INFO hires both newly educated graduates and people with experience from e.g. business, marketing, PR, and journalism. The recruitment is based on a “gut feeling”, downplaying formal education and school grades. Says the CEO: “*We work with our hearts. I have barely seen their exam papers, and I certainly don’t remember what they studied*”. He continues: “*To some degree, it’s fair to say that we sell trust. Therefore, we need people with the ability to quickly gain trust in relation with the client*”. According to one advisor, many people in INFO consist of what he terms “half-educated pirates”, i.e. people who have started on but not yet finished their academic degrees. Yet, all employees have backgrounds in marketing, either from school, practice, or both. Competence, capacity, and independent opinions are in publicity material emphasized to characterize the people of INFO. In service delivery, they carry out three different roles: (i) project leader (newly educated person/person with little experience), (ii) advisor (consultant with some years of experience), and (iii) advisor with client responsibility (client responsible) (experienced consultant, including the CEO). According to the Personnel Handbook, all advisors are responsible for delivering the best possible product to the client, within the deadlines agreed upon. In addition, the client responsables take care of the project economy, delegation of responsibility, and sales. The project leaders assist the others on the project and take care of administrative tasks, minutes, research, dispatching, appointment bookings, contact with external collaborators, systematizing materials and press clippings etc. At INFO, a basic rule is to have one regular contact person for each client. The background for this arrangement is to make it easier for the clients, so that they do not have to relate to different people every time they are in contact with the agency. This means that each client responsible has his own portfolio of clients and high individual autonomy in terms of making decisions for how to approach problems, compose teams, deliver services, and handle relationships with clients. This individual autonomy is further strengthened by the very little investment in collective competence at INFO. In addition, the client responsables claim that they do most of the work on the projects themselves.

Based on this presentation of the three value creation components, a generic strategy for INFO is suggested.

*Generic strategy in INFO*

As illustrated through the data, pleasing the client is the primary goal for the work at INFO. With this regard, the consultants work closely with the clients throughout the assignments. The degree of success is evaluated based on actual effects of the communication and with regard to client satisfaction - according to the opinion of the client. Reputation among clients and long relationships with key clients stand out as extremely important. Therefore, INFO employs people who easily gain trust from clients. Hence, finding individuals with the right personality is considered most important, whereas formal education comes secondary. The strategic focus of INFO seems to be to target clients rather than specific markets or projects.

As a result, this material agrees well with Løwendahl's (1997) characteristics of a client relation based type of generic strategy. In such a strategy, reputation and strong relations with clients represent the principal assets, and growth is based on the development of relationships of trust and confidence to new clients. Such achievements depend on the firm's unique ability to understand and help particular clients. Consequently, such a firm puts high emphasis on clients, and less focus on professional competences and the scope of the services offered. In addition, the clients constitute the reference group. Thus, performance is primarily evaluated in terms of client satisfaction and the retention of clients and number of follow on contracts with a given client (Løwendahl, 1997). In addition, a client relation based firm is likely to pay special attention to target client groups (Løwendahl, 1997). However, INFO does not seem to target very well defined or limited types of clients. Rather to the contrary, INFO works with a remarkably broad range of different types of clients. This may relate to the preferences of each client responsible in INFO to independently make decisions regarding what clients to work with and how. In this regard, Løwendahl (1997) emphasizes highly autonomous professionals to be an individual priority in a client relation based strategy. She claims that given the high emphasis on making the client happy; as long as the client is satisfied, the judgements of the senior professionals are trusted to also be the best for the firm. As mentioned in chapter 3, INFO is employee owned with senior professionals as partners. This further supports a client relation based strategy, because a client relation based firm is unlikely to have external owners, as the firm itself has little value beyond what is created by the professionals (Løwendahl, 1997). In addition, the personal and long term client portfolios, combined with the high authority of the client responsables to run their projects as they choose, and often by doing most of the work themselves, suggest that important competences at INFO are to a large extent individually controlled. The few

investments in collective competence further support this notion. By building on this material, it is argued that INFO agrees well with a client relation based type of strategy. The generic approach of INFO is summarized in table 20.

*Table 20. Generic strategy in INFO*

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<b>Client relation based generic strategy</b>	
<b>Domain choice</b>	Offers goal oriented external communication advice to clients representing small and large organizations of both private and public sectors in Norway, and internationally if demanded.
<b>Service delivery</b>	Develops services for and with the client in order to meet individual client needs and make the client happy. Degree of success is evaluated based on client satisfaction and proven effects compared to predefined goals developed together with the client.
<b>Resource base</b>	Hires experienced and newly educated people based on personality and ability to build strong relations with clients. Advisors with client responsibility enjoy high individual autonomy. Competence resources seem to be individually controlled.

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From a starting point of viewing INFO as a firm pursuing a client relation based type of generic strategy, the following section elaborates on competence development in the firm.

## **7.2. Competence development**

First, CD in INFO is investigated by focusing on the firm's CD policy, i.e. what is done from the firm's side in terms of approach to and orchestration of CD. Data is primarily based on interviews with the CEO as well as employees. Second, the question of how people in INFO develop competence is investigated according to investments in CD, followed by CD through daily operations. Data is primarily based on interviews. Fourth, CD facilitators and constraints are pointed out from a joint view on the two routes to CD. Fifth, the type of competence developed is addressed. Based on these investigations, the way in which competence is developed in INFO is suggested.

### **7.2.1. CD policy**

In written INFO materials, it is stated that for clients, "*the advisors provide competence, capacity, and independent advice*". Publicity material further emphasizes the staff's "*education, knowledge, and experience which enable*

*us to solve complicated communication tasks*” (INFO web site). In a company presentation, the following areas of competence are listed: “Advertising; Building materials; Clothing; Defense industry; E-commerce; Education; Environment; Finance; Foods and beverages; Government; Health care; IT; Organizations; Power and energy; Telecom, Toys and games; Travel; TV/entertainment”. These areas relate to assignments for different client industries, but do not specifically refer to the particular competence INFO offers as a communication agency. Written company materials say little specific about competence development in the firm. For example, the Personnel Handbook states that *“everything which has to do with personnel administration and -development is the responsibility of the manager”*. What is meant by personnel development, however, is not further specified. Each Monday, there is a meeting for all employees. According to the Personnel Handbook: *“It is important that everybody prioritize this (the meeting). Information about important issues will be given, and the weekly plan will be discussed. Usually, the meeting includes a functional element”*. Thus, written materials in INFO say little about how to develop competence. This may indicate little emphasis on CD.

This notion is supported by interviews with the employees, who all claim that there is a lack of focus and systems supporting CD. *“There are no plans, or goals, or administrative steering of competence development in this firm”*, says one client responsible. According to one advisor, *“... the firm is characterized by a major client focus, while neglecting other issues including the development of human resources”*. The primary concern is towards the products and services to clients. A lack of systematized CD seems particularly negative for people with a few years of experience in the firm. For example: *“The absence of plans for competence development has greater impact now compared to when I started out. At the beginning, I learned so much regardless of its systematization. Now, I miss more structure as to what areas and in what direction I need to improve my competence”* (project leader). In addition, there seems to be little consciousness about learning among employees in general. For example, when asking the informants what is done at INFO to improve people’s competence development, one of them replies:

*“Quite specifically, I don’t experience any competence development. But on the other hand, I think more abstractly that I’m better at the things I do, and that I’m able to do a lot more now compared to before. But I definitely do not feel that I’m given any specific competence development. It’s not like, now I’m going to learn this and that, and then I learn it, or that we set aside time for learning. I have never set aside time for individual learning”* (advisor).



This may indicate that the visibility and awareness given to CD is not particularly strong. However, when asked more thoroughly about CD, it turns out that this advisor has learned a lot after all. This may be due to the difficulties in talking about elusive concepts such as competence. It also puts demands on the ability to express and verbalize competence that may be internalized and embedded in the actions performed, and which in addition has tacit elements in it. Some elements can remain tacit, whereas others are, to some extent, possible to articulate. To most of the informants, reflection on CD does not seem widely practiced at INFO. Therefore, issues concerning competence may not be consciously attended to, until someone (e.g. a researcher) starts asking questions about the theme. This is particularly so if the visibility and focus on learning is not strongly promoted in the organization, as commented on by the manager:

“What I think you will experience when talking to people in this firm is that they will say there is no competence development here. Because it is not “wrapped” in such a way that people get a strong picture of it. On the other hand, when thinking back, they may say that when working in INFO, I really learned a lot. Because at the same time, it’s pretty much a steered process, only not spelled out that explicitly” (CEO).

When further asking the manager what this “steered process” includes, “office placing” was emphasized as important. The aim is to cultivate employees through rotation of office placing and team composition. According to the manager, there is a strong emphasis on internal on-the-job development, which seeks to take advantage of the interplay between experienced consultants and less experienced advisors and project leaders. Hence, people move around and shift desks in accordance with what seems most rewarding in terms of shared competence. Since these activities are integrated parts of daily work, they seem to become efforts that regular employees do not pay particular attention to. Nevertheless, there seems to be a discrepancy between the manager on the one hand and most employees on the other regarding attention to and awareness of CD.

Moreover, this material illustrates that some effort is done to orchestrate CD. A main objective is to share competence through direct interaction with colleagues, particularly from experienced to less experienced workers. According to the informants, IT plays no role at all with regard to competence development. Hence, in the terms of Hansen et al. (1999), INFO’s policy is to rely on a *person-to-person approach* to the development of competence. With this material as a starting point for further understanding CD in INFO, the next section moves deeper into how people actually develop competence based on investments in CD.

### 7.2.2. Investments in CD

Despite little explicit emphasis on CD in INFO, examples of endeavors aiming at enhancing learning do exist. These include ‘office placing’, ‘the Monday meetings’, and ‘internal courses and seminars’. Since INFO has rapidly increased its number of employees over the past few years, a need for more structure is recognized. Therefore, at the time of the study, INFO was about to reorganize. Part of this process of ‘restructuring the organization’ includes attempts to enhance people’s competence. Each of these efforts is addressed below.

#### *Office placing*

At INFO, there are several open plan offices, both at the ground floor and at the first floor. As mentioned, the manager puts emphasis on mixing experienced and less experienced workers together in different offices, and letting people (particularly the less experienced) rotate in order to learn from various seniors. *“You get a lot for free merely by sharing office”*, he says. Through these arrangements, project leaders and advisors are “formed” by placing them together with more skilled people. Such a blend of seniors and juniors in daily work allows people to take part in the everyday activities of others, while at the same time taking care of their own tasks. As a result, the project leaders claimed to increase their opportunities for indirect learning for instance by listening to senior professionals as they go about doing their work. One project leader explains how she picks up talk just by sitting next to a client responsible as he speaks with the client on the phone: *“I heard what went on. I absorbed a lot of information about the project. He didn’t have to tell me, I just knew what to do next”*.

This implies that in order to take advantage of the office placing arrangement, the ability to be sensitive and observant, and to interpret and apply information based on the actions of colleagues is crucial to the CD process. This is facilitated by working in physical proximity to a senior who may be (-come) a role model, as further emphasized by another project leader as she reflects upon learning related to placing: *“I think I learn according to who I learn from. I see how he does things, and try to do it the same way myself. Maybe that’s why we move around, so that you detach and don’t become a copy of your teacher”*, she says. Further, the open plan offices increase opportunities for spontaneous and immediate feedback between colleagues. According to several informants, this is particularly beneficial when working on projects. For example: *“I learn a lot from being able to just cry out for help there and then when I’m stuck with a problem”* (advisor). Hence, the degree to which the construction of offices and the placing of individuals support interaction among workers, influences learning. Learning through informal practices based on close physical

proximity appears to be important to CD at INFO, particularly in terms of less experienced people.

Another effort with a purpose to share competence is the Monday meeting.

#### *The Monday meeting*

People at INFO start every week with the Monday morning meeting, which consists of “*this week’s bread and butter*” (advisor). The meeting is also intended to serve as an arena for sharing competence among the employees. In this respect, a variety of issues are discussed: “*Everything from presentations to campaigns or films we have made can be brought up. Or it can be that somebody has been to a course or a conference and gives a summary of that*”, says one advisor. The idea is to share individual work experiences throughout the firm. E.g. what was the challenge in this project? How was the thought process and what issues lay behind the approach chosen? As a result, competence can be visualized in the firm. Whereas a couple of the project leaders say that the Monday meetings contribute to their functional learning, one informant is highly sceptical to the usefulness of this meeting in terms of CD, and says:

“The Monday meetings are just empty chattering where everyone talks about what they’re going to do during the week. It’s misuse of time, really. We could actually have shared some competence, but that doesn’t happen. It’s like, oh, I’ll just tell them something about the seminar last Thursday, so they think it was functional learning” (client responsible).

Hence, different opinions exist regarding the degree to which the Monday meeting contributes to learning. This discrepancy typically appears between junior employees on the one hand and more senior workers on the other. Naturally, the repeat work for the client responsables is presumably higher than for the project leaders. Further, the quality of and the emphasis on functional elements taking place at the Monday meeting are claimed to vary. Overall, thus, it seems as if this common internal arena for the purpose of sharing experiences and learning from each other is not fully utilized, nor is it working as intended. Additional efforts made to enhance CD relate to internal courses and seminars.

#### *Internal courses and seminars*

At INFO, financial resources set aside for CD purposes are scarce. The informants mention remarkably few external courses, and some say they have never participated in external courses during their couple of years of employment in INFO. Instead, some internal seminars are highlighted. These seminars include all employees and are primarily conducted by external people especially hired for the particular occasion. One course in

business English is frequently mentioned as a good example, which contributed to learning. The need for this course emerged because many of the clients operate in international environments. The course ran twice a week for several months, both during office hours and in the evening. Sometimes, evening lectures ended with dinner, because conversation at such settings represented an important part of the learning. Those who passed the exam were invited by the firm for a social trip to London to further practice the language.

Another internal effort is a seminar with an expert on issues related to stock listed firms, as INFO tries to enhance competence on investor relations. An increasing amount of the client firms are listed on the stock market, and, thus, need to fulfill particular demands in terms of information. To meet these requirements, people in INFO seek to develop competence on these issues. A third effort mentioned, is a seminar on web journalism. However, a couple of informants say that they did not gain much functional learning from these arrangements. For example: *“We learn from experience, and we have a lot of experiential strength, but that doesn’t mean that our functional knowledge is sufficient. If we are to do other communication forms, I have no competence on that. I only know the limited area I have worked on. These courses don’t provide functional development, and that’s a limitation”* (advisor). Further, at INFO, no particular efforts are made to enhance the CD of the most experienced people, the client responsables. According to one of them, it is easier for the less experienced to develop compared to those with client responsibility. The general opinion is that the client responsables are highly self-going and can manage on their own. However, according to one of the newly hired client responsables, these individuals are relatively young, and in order for the firm to develop into new areas of communication, as well as maintain the current services, these people must continuously improve their competence. In this respect, courses with relevant follow up activities exclusively for the client responsables were suggested in the firm. However, at the time of the study, these plans were not yet implemented.

The rapidly growing number of people in INFO makes it difficult to present a uniform image to clients. Therefore, in order to enhance a basic common competence among all employees, an internal seminar facilitated by external collaborators was organized. At this seminar, the participants worked through the whole history of the firm. According to the manager, this was done in order to provide people with *“... an anchor to where we come from and what we have done previously. It’s astonishing how fast we have changed. But it’s crucial to hold on to some values and a certain style, what we want to be”*. However, like the other seminar mentioned above, neither did this seminar support functional learning. The little emphasis on functional CD may relate to the lack of functional standards in the

communication consulting industry in general. Says the CEO: *“In our business, there are few right and wrong answers”*. Typically, the communication consultants have short time to establish themselves in front of the client. Therefore, building trust fast is a primary condition. Hence, personality and quick understanding of situations in order to communicate clearly and precisely are emphasized as more vital than functional education. On the other hand, since the services are quite abstract, it is likely that credibility also depends heavily on functional competence not only in order to convince clients, but also regarding proper carrying out of the actual communication process. Moreover, the rapid growth of the firm has also led to a need to reorganize the company.

#### *Restructuring the organization*

According to one advisor, *“INFO has evolved from a small “boys’ gang” who worked with what they liked the best, into a business firm”*. Previously, with a handful of people, the awareness of and the need for CD were not very urgent. The current situation is different. It is regarded an organizational challenge that the functional development is the responsibility of the CEO. *“One person cannot develop 19 individuals and at the same time take care of everything else”*, says a client responsible. Hence, as an attempt to improve efficiency and CD, the employees are about to be divided into three smaller and permanent groups with large degrees of autonomy attached to each group. Two of the groups are made up of client responsables, advisors, and project leaders. When composing the groups, it was important to equip them with broad and complementary competences. Each group is lead by a client responsible who is also responsible for the functional CD of the group members. The third group is different as it only consists of a couple of people specializing on film and video. Further, one of the relatively newly hired client responsables is supposed to take over as manager of the firm, whereas the current CEO takes on a role focusing on internal development. Since it is regarded important to keep in touch with the market and the clients, both will continue to spend some of their time on client assignments.

According to the CEO, the re-structuring is also motivated by the fact that the client responsables are so focused on solving client problems that they do not set aside time to develop single individuals. In many respects, the client responsables *“run their own businesses within the business”*, he says. This means that the company appears differently to clients depending on who is in charge of the project. This notion is supported by a client responsible: *“In a firm like this, we are really many independent and self employed contractors. For my clients, I could have done exactly the same working from home, and charged the same fee independently of this firm”*. Hence, personal motives in terms of earnings become very important. Says one

informant: *“Here, ‘Cash is King’. In the end, the money rules the game. It’s as simple as that, even though you may have been told otherwise”*. The groups, thus, are supposed to counteract these processes through improved prioritizing of collective resources and time with the client responsible. The aim is to implement more structure and formalized responsibility for the development of competence. The idea is also that the organizing of a small number of people in each group will promote the spirit which characterized the firm at the time when INFO consisted of five-six people at an attic. Says one interviewee:

“In the old days, we worked together pulling in the same direction across different projects. Now, we are too occupied with our own projects and the billable hours. Before, we counted hours to know how much to bill. Today, we count hours to justify the salary. It’s like, no, I can’t help you lick envelopes, and which project number is that? The team spirit has changed. That’s what we try to recreate with these new groups” (advisor).

When asked to what extent these efforts are likely to result in the desired changes, one informant is hesitant. Change requires that people alter their mental and practical ways of doing things in the firm. In addition, those supposed to lead the groups will end up with more administrative tasks. *“I don’t think people will change very much. I have never heard any of the group leaders say they want more administration compared to consulting. Then, I question their motivation. On paper it looks neat, but in practice, I’m sceptical”*, he says. Another informant explains that the company does not consist of “white-collar workers”: *“Nobody has very great ambitions or sets very high demands. In fact, nobody questions his or her place in the system. That’s pretty scary. Our philosophy is to be a nice bureau, which again has attracted a certain type of people”*, he says. The informant further reflects on whether this philosophy combined with the high time pressure in daily work may represent a reason why it has taken so long before steps are made to improve the situation in terms of greater emphasis on competence development. Nevertheless, the reorganization illustrates that there is an increasing awareness of the importance of CD at INFO. And, concrete actions are taken to improve the resource base. The actual impact on learning, however, was unknown at the time of the study. Yet, increased formalization and systematization of routines are required in order to enhance and maintain efficiency and effectiveness as a company grows (Starbuck, 1992). Hence, in light of the growing number of employees in INFO, this investment seems reasonable.

#### *Further analysis*

One effort, which is claimed by the informants to contribute to learning, particularly for less experienced employees, is the office placing. The degree

to which this effort can be seen as an investment in CD or as CD through daily operations can be discussed. On the one hand, the office placing resembles what Nordhaug (1993) terms internal training: It takes place in-house and refers to educational activities that are planned and arranged by and for INFO employees. On the other hand, the learning resulting from the arrangement primarily takes place through daily work in client assignments. Still, because the arrangement is developed as a specific effort in the firm with an aim to enhance learning and competence sharing, it is in this study regarded as an internal training investment.

Other investments in CD are seminars and courses in investor relations, web journalism, and English. These courses are to some extent adjusted to meet the needs of INFO. The same is the case with the seminar on the history of the firm, which seems relatively customized to INFO. These arrangements are conducted internally in the firm, however, to a large extent carried out by external people. According to Nordhaug (1993), “external training” activities are arranged and carried out by others, e.g. consultants and training firms, business associations, and educational institutions, and offered as a consequence of adjustments between supply and demand in the market for employee training. The latter seems to apply to INFO. For example, the investor relations seminar was conducted in order to meet demands from stock listed client firms. Still, these efforts seem to resemble in-house training rather than what Nordhaug (1993) terms training through markets. In particular, this notion is based on the adjustments made to the courses in order to meet INFO specific demands. Hence, since the training activities are planned and arranged predominantly for and in close collaboration with people in INFO, requiring their active involvement, these arrangements are in this study viewed as internal training activities.

When it comes to e.g. external course participation, the informants mentioned remarkably few such investments. To the contrary, many of the interviewees had never been to external courses during their employment at INFO. Hence, external training investments at INFO seem very small. Overall, thus, to the extent that people in INFO develop competence through training activities, they rely primarily on *internal training*, which is often conducted in collaboration with external people.

The next section addresses CD through daily operations.

### **7.2.3. CD through daily operations**

At INFO, service delivery to clients represents the most - and according to some informants, the only - important source of CD. CD takes place in the everyday activities of project work, but is difficult to discern. One client responsible in INFO describes this process as “*many, small drops all the*

*time*". Closer examination shows that these "droplets" seem to intensify in frequency and impact in certain activities. These include 'learning by doing in client assignments', 'learning from more experienced colleagues', and 'learning in interaction with clients'. On the other hand, 'lack of systematized distribution of people and work tasks' inhibits CD.

#### *Learning by doing in client assignments*

All interviewees claim that learning by doing through actual implementation of service delivery in client assignments is by far most crucial to CD at INFO. For example: "*There's no kind of training beyond being thrown into the projects*" (advisor). Another informant with several years of previous work experience elaborates: "*My first day at work, I was sent to another city to assist a client. I didn't know the client or the event. It was exciting, and describes very well how we work and develop competence in this firm*". In INFO, ideas are often created by single individuals, but further developed through interplay with others. For example:

-Informant: "In projects, we observe each other and learn by sharing experiences. Recently, I have been working closely with the manager here. He has been involved in my projects on client strategy, and played the devil's advocate, raised new ideas, and asked critical questions".

-Interviewer: "When you work on projects with him, how do you learn? What happens, how does this take place?"

-Informant: "We attend the same meetings. We meet with clients and gain an understanding of the problem. Then, the one who is responsible for the client goes into the "isolation booth" and develops some ideas about strategy and some main issues, or we may discuss the main issues before the client responsible withdraws and works it out. Next, we meet again, go through the material, and challenge each other. Is this the right way to go? Expressing your own thoughts, hearing your own voice and at the same time receiving some critical questions is a good way of working. Often, you go another round, or several, in order to improve the suggestions. We withdraw, work alone, get back in groups and work together. That kind of dynamic promotes learning. In this process, we also involve an advisor or a project leader because they often see things from other angles and have valuable things to contribute" (client responsible).

Hence, competence is developed while working alone as well as in interaction with colleagues. This indicates that CD takes place both individually and in social interaction. Further, there is a distinction between working on projects versus doing more limited, single tasks such as e.g only making client magazines or writing a press release. According to the informants, the most exciting in terms of learning is to be able to take care of the whole communication process, to set the terms for all parts of it. This includes both communication among employees in the client firm, and in



terms of the advertising and communication agencies. Particularly the experienced workers emphasize the early phase of the project as important to learning as this concerns the foundation for establishing the other building blocks of the project. Then, creativity and experience are needed in order to see and predict what solutions will potentially lead to the best result regarding long-term effects, be it in terms of publicity or increased sales. Such holistic communication processes mainly refer to large projects in terms of the time and people involved.<sup>50</sup> Such projects require a thorough strategy, a plan to deal with, and background material and correspondence. Then, “... *it’s much easier to get the information flowing in the team, meaning that the opportunities for learning are also considerably higher*”, says one client responsible. On the other hand, INFO also serves some clients whom they only talk to on the phone. “*Then, it’s much more difficult to share competence with others*”, says another client responsible. For obvious reasons, only providing oral advice through telephone contact, leads to less opportunities for others to get involved in the process. In this respect, the arrangement with open plan offices can work like a fruitful “sponge” for people to “absorb” also such communication processes.

In projects, there seems to be a close relationship between learning by doing among project leaders and advisors on the one hand, and the client responsables on the other. This is further addressed below.

#### *Learning from more experienced colleagues*

At INFO, the learning processes between experienced and less experienced people is by the CEO referred to as the “*tribe method*”. The experienced (the tribe) know how similar tasks are solved earlier: “*Then it is up to them to involve new people and start talking and telling*”. Further, the less experienced have to learn by “taking over” tasks representing mere “routine” work for the seniors. One client responsible explains: “*It’s a condition for my development that others learn what I know, so that we can climb the ladder together. That way, I don’t have to write press release number 172 for firm A. I can do that in ten minutes and it usually turns out all right, but I don’t learn anything from it*”. This illustrates that less experienced people’s learning is important in terms of direct development for them and in terms of indirect development for the seniors through freeing time to do other more learning rich activities. Further, according to the client responsables, the project leaders and some of the advisors work on parts of the project. They

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<sup>50</sup> Large projects in INFO refer to projects which run for a year or so. These are, however, quite rare. Small projects are mainly completed within a couple of weeks or months. In addition, INFO has assignments lasting for less than a day, for example when working on tasks which only require the writing of a press release.

participate in meetings, gain an understanding of the problems, and contribute in the shaping of communication strategies and plans. During this work, they get responsibility for particular tasks. Gradually, as they master the tasks, the responsibility is enlarged.

Project leaders primarily learn from working together with client responsables. A project leader reflects upon her learning from an encouraging client responsible who delegates frames to work within, but leaves the workmanship to her. The highly specific feedback she gets in terms of both positive and negative critique is important. In addition, the client responsible explains very well what e.g. written material like an article or a press release is supposed to look like. Similarly, other project leaders explain how they learn from feedback from more experienced colleagues. One of them says: *“At the beginning, my articles were three times longer than they should be”*. Hence, the challenge was to learn to write shorter. In this process, a client responsible trained her to understand relevant issues to consider. For example: *“Most importantly, the title needs to catch interest. The subtitles are supposed to trigger the reader to continue through the whole article in order to get the point at the end. The further you read, the less important the information. A press release, however, must include relevant information all the way”* (project leader). This process also includes “research” work, where the purpose often is to gather basic data about the client firm, their market and competitors, for example by searching the web, calling experts for their opinion on the given topic and so on.

Constructive feedback can be provided immediately during work performance, or afterwards by, for example, examining the work produced by the project leader. Whereas the latter does not necessarily require close physical interaction, spontaneous feedback in action requires close physical proximity. However, the frequency of feedback and the quality of such responses to juniors vary from senior to senior. Several project leaders and advisors complain that whereas some of the client responsables are very good coaches, others seem less interested in spending time on developing colleagues. One client responsible says: *“Our task is to solve problems and gain material from others. We are not supposed to provide adult education for single individuals”*. As a result, the degree to which project leaders and advisors participate in various activities depends to a large extent on the client responsible. In addition, the billing system seems to constrain engagement in activities which are not directly billable:

“I run media contact courses for clients. Sometimes, I invite juniors to see how I interact with the participants. But they are required to bill a certain number of hours a day, and presence is not billable. So those things work against each other. Nobody pays us to be present. I’m not paid to be *at work*,

I'm paid to *do* the work. Therefore, such an “invoicing hysteria” makes you careful in terms of the learning part and bringing people to things” (client responsible).

Further, learning from clients stands out as important.

#### *Learning in interaction with clients*

All the client responsables claim that interaction with clients is vital to their learning. For example: “*My most important source of development comes from direct client contact. Client responsibility, running projects, handling budgets - simply being involved with different clients*” (client responsible). Says another client responsible: “*For me, an exciting project is different – a new client, a new industry, a new company. Then, it's challenging and I learn something new, not just collecting from the back of my head*”. These statements illustrate the opinions of the client responsables and some of the most experienced advisors. The reason for this view is grounded in the variety of clients the firm serves. Even though two of the clients operate within air traffic, they are very different in terms of strategic positioning and the way in which they do business, as well as the values they want to be associated with.

Also less experienced interviewees highlighted the importance of competence gained through client interaction, be it as an active participant, observer, or “listener”. For example:

“Client meetings are all about listening and learning, about how to respond to difficult questions, the way budgets and pricing are handled, how to start a meeting, and what issues to bring up. It's a technique. At the beginning of the meeting you talk a little about general issues, set a time frame for what to talk about, and, finally, try to close the meeting in a nice way before leaving. It's also important not to get caught up in practical details, and keep focused on the bigger picture. Since most meetings are at clients' offices, we discuss issues on our way to and from meetings. Before each meeting, I'm briefed on what we are going to talk about, the approach we plan to take, and on the way back we evaluate what went on and I often receive feedback” (advisor).

Sometimes, less experienced workers attend a client meeting just for the sake of learning. Even though the person has nothing particular to contribute to the meeting, listening and observing the client responsables in interaction with clients provides a lot of information and considerations useful to consulting work. On the other hand, bringing team members to meet the clients can also be difficult. Says one client responsible: “*I sometimes bring a junior to meetings where he or she really doesn't do anything else than listening and looking expensive. The client sees xxxx kr. on the cash register for every hour spent, so you have to be careful about that*”. However, the

benefits in terms of learning seem significant, as interaction with clients is likely to enable the service provider to act with increased understanding in future assignments. Meeting the client face-to-face involves balancing different interests in a project, which may lead to revised solutions as well as new perspectives on one's own work. In order to assist clients, it is vital to gain a genuine understanding of the client and the client needs. At the same time, less experienced people learn how and in what ways they can contribute for the client. Such competence seems best enhanced through direct interaction with clients, as this gives the consultants a better impression of how different parts and elements of the solution combine to make a holistic communication strategy.

Another characteristic which is important to CD in client interaction is the level of client competence. The majority of the informants claim that sophisticated clients with competence within the field of communication contribute to learning to a higher extent than less competent clients. In addition, another aspect came up. Some informants say that this difference depends on the degree of experience the client has with the use of external advisors. *"If the client company is used to buying consulting services, it's easier because they have a more professional attitude and approach to the process"*, says one client responsible. This professionalism is important, because the consultant is dependent on input from the client in order to develop effective solutions. This requires that the client is active in terms of providing information and engaging in discussions. Without an understanding from the client side on these issues, it is difficult to reach a recommendation which will gain sufficient impact. Hence, working with "professional" clients with extensive experience from collaborating with consulting agencies seems to support learning for people in INFO.

In this respect, long term client relations are important. Even though many of the clients have been with the firm for many years, they still represent new challenges because when they make a turn, the communication strategy must be adjusted, and appropriate efforts implemented and communicated to the market. In this respect, the strength of the client relationship is important. Working with clients who believe in the service providers requires trust from long-term relationships. Based on renewed confidence from meeting client expectations through previous assignments, the clients often provide wider frames for service delivery on later projects. *"As a result, we increase our knowledge about particular clients, which enables us to improve our service, which again promotes freedom. This means that clients leave it up to us to find and develop the best alternatives, which in total makes our work more challenging and fun"* (advisor). Hence, the most desirable clients in terms of CD are those who provide freedom in the service delivery process, even though suggestions and solutions go beyond the framework the client

initially had decided upon. This turns into a positive spiral for both parties. Hence, clients with under-specified problems seem to enhance the CD of INFO professionals.

On the other hand, lack of systems for appropriate distribution of workers and tasks in service delivery is claimed to constrain CD.

*Lack of systematized distribution of people and work tasks*

Informants claim that the work-load in INFO is very unevenly distributed. This is due to the lack of systematized distribution of people and work tasks in service delivery. Says one advisor: *“The client responsables pick advisors and project leaders according to their personal taste”*. As a result, a division has developed in the firm in which some of the advisors and project leaders are used much more than others because they have built a reputation based on supplying the client responsables with good deliveries. *“Those who are not as skilled, and actually need the work opportunities most, don’t easily get them. Whereas some people are very “in”, others are more “out””*, says the CEO. In terms of CD, this means that some employees learn more quicker than others, as practice opportunities depend on being among the “chosen ones”, as expressed by one client responsible. However, the manager claims to influence learning in service delivery by using teaming as an important tool. *“I exert influence on jobs when I give a client to a client responsible and ask, can you use her on this and him on that?”*, he says. On the other hand, he admits that with limited time to complete a project, it is easier to rely on the experienced ones. For example: *“With high time pressure, we tend to use those who master instead of spending time on those who need to learn, because the difference between bringing in the three best people or the three poorest is tremendous”* (CEO). As a result of insufficient coordination with regard to learning, the gap between competent and less competent people increases, a process negative to CD in terms of an overall improvement of the work force.

Further, several informants claim that the client responsables have little control over the time of other workers. For example: *“While the client responsible works until midnight, the team members leave at four o’clock”* (advisor). The reorganization aims at improving this situation in terms of better balancing the work-load among employees. By composing teams from within each of the two main groups, the client responsible is given opportunities to plan, delegate tasks, and steer other people’s time. As a result, individuals can learn through relevant practice opportunities, whereas time slack is produced for the client responsible to take care of tasks requiring special expertise or unexpected events. The latter is highly pertinent in INFO, as it is often difficult to predict work tasks due to the nature of the services offered, including crisis communication. For example:

*“With a bit of bad luck, four of my regular clients call at the same time and want me to do something instantly. Simultaneously, something happens in the media, which naturally is beyond my control. As a result, two of my other clients need immediate help. And, I go along with all of them. Then, I end up on the back of my heels because I take on more than I should”* (client responsible). This illustrates that plans for service delivery are sometimes difficult to maintain. At the same time, flexibility and the importance for the client responsible to delegate tasks is further highlighted in such situations. Hence, the lack of routines for work distribution in service delivery may be even more negative in extraordinary circumstances. On the other hand, the learning involved in handling such types of client challenges may be extremely high.

#### *Further analysis*

In daily operations, people at INFO typically develop competence through an interplay between working alone *and* together with others in client assignments. In other words, they seem to develop competence from learning by doing (Dewey, 1916) as a combination of individual experiences (e.g. Kolb, 1984) and social interactions (Lave & Wenger, 1991). With regard to collaboration, less experienced employees such as the project leaders and some of the advisors, primarily learn from working closely with more experienced colleagues, particularly the client responsables. The client responsables learn most from being challenged by peer colleagues, and particularly by clients. Direct client interaction is emphasized as important to all employees, but is regarded especially important to the most experienced professionals. This shows that learning together with clients stands out as vital to CD at INFO.

The findings also illustrate a strong connection between the degree of problem specification and the strength of the client relationship. This illustrates that not only may project assignments be won through client relationships, but the latter also influence the kind of problem the people at INFO get to deal with, as well as the degree of freedom they enjoy. This creates frames for the project, as well as the solutions offered. Long-term client relationships encourage the client to demand more through the combination of added openness and fewer restrictions on the problem solving process, as well as the end solution. This provides a “higher level” challenge, which again improves opportunities for CD. On the other hand, deep understanding of clients and the client organization through long-term collaboration, may gradually lead to less learning (for both parties), if working with existing clients becomes routine (Cohen & Levinthal, 1990). The paradox is that the same process that enables CD through exploration, at the same time may restrict and limit available options if the firm is not also continuously searching for new clients. This suggests a careful balance

between developing close links with existing clients *and* the gaining of new clients if CD is to be continuously supported.

However, the high emphasis on the client responsables' learning through client interaction also implies that the competence gained becomes highly individual to each client responsible. This notion is supported by the high degree of autonomy that each client responsible has, as well as the personal client portfolio they are in charge of. In this respect, the long term client relationships built up by each client responsible, indicate that a unique relation with each client is likely developed. In addition, the variety of types of client companies and projects further enhances individuality. This indicates that the competences are to a high degree individually controlled, as illustrated through several of the quotes, e.g. the client responsables' independence of the firm, and the running of their own businesses within the business. According to Løwendahl (1997), individually controlled resources characterize a client relation based firm. Hence, this finding also gives strong support to the client relation based type of generic strategy suggested for INFO.

From these analyzes on investments in CD and CD through daily operations, the next section brings the two routes together by pointing out facilitators and constraints to CD in INFO.

#### **7.2.4. CD facilitators and constraints**

At INFO, there seems to be little consciousness about learning among general employees because such processes are not sufficiently emphasized and visualized throughout the firm. This is regarded as a constraint to CD. However, when probing into the issue, people conclude that they have in fact learned a lot after all, and claim that the most crucial source of CD is learning by doing in project assignments. In comparison, investments designed to improve CD seem to be of marginal importance. One exception is the office rotation in which experienced and less experienced people are placed together. However, this arrangement primarily supports the training of less experienced people. There are very few external courses, and the internal seminars do not adequately support functional CD. To the degree that the Monday meeting does not fulfill the intention of competence sharing, this effort can be regarded as a constraint to CD.

In service delivery, the interplay between working alone *and* together with colleagues is important to learning. Working on both projects and limited single tasks provide learning. However, taking care of the whole communication process is particularly important to CD. Whereas project leaders and advisors learn from the client responsables, there are fewer opportunities for the client responsables to further develop their competence.

Hence, interaction with clients represents the most important contribution to the learning of client responsibilities. Especially direct collaboration with clients who regularly hire consulting agencies supports CD because such clients understand the process of exchanging information in order for the consultants to develop and customize appropriate services. In addition, the length of the client relationship is crucial to CD. In this respect, learning seems to increase with the degree of open-ended client problems, which requires trust based on well-established client relationships. On the other hand, participation in learning activities is limited when it is not directly billable. Further, client responsibilities' individual motives seem to drive team composition as well as earnings. These elements are seen to constrain CD with regard to the development of the whole work force.

At the time of the study, INFO was about to reorganize. This was also done in order to formalize and visualize the importance of CD. People were to be organized into three smaller groups, each headed by a leader who is also responsible for the CD of each group member. The aim is to increase service delivery efficiency in terms of better balancing the work-load among the work force. The emphasis on individual motives and ways of doing things is sought reduced in favor of building a more uniform appearance towards clients. In addition, a formal responsibility for both individual and collective CD is placed with the group leaders. In light of the findings on constraints to CD, these plans for future organizing seem useful. Table 21 summarizes facilitators and constraints to CD in INFO.



Table 21. Facilitators and constraints to CD in INFO

	<b>Investments</b>	<b>Daily operations</b>
<b>CD facilitators</b>	<ul style="list-style-type: none"> <li>-Office rotation promotes informal learning particularly for project leaders</li> <li>-Internal courses and seminars, however, these do not promote functional CD</li> <li>-Future organizational restructuring?</li> </ul>	<ul style="list-style-type: none"> <li>-Learning by doing in assignments through an interplay of working alone and together with colleagues</li> <li>-Taking care of the whole communication process, including the early phases</li> <li>-Project leaders and advisors learn from client responsables</li> <li>-Client responsables learn from peers and competent professional clients</li> <li>-High degree of freedom in service delivery solutions based on long-term client relationships</li> </ul>
<b>CD constraints</b>	<ul style="list-style-type: none"> <li>-Little focus on CD</li> <li>-Few investments in CD, particularly for client responsables</li> <li>-Limited opportunities to bring project leaders and advisors to non-billable training activities</li> <li>-The degree to which the Monday meetings do not fulfill intended competence sharing</li> </ul>	<ul style="list-style-type: none"> <li>-Limited opportunities to bring project leaders and advisors to client meetings</li> <li>-Client responsables compose teams according to personal taste</li> <li>-Client responsables involve team members to varying degrees</li> <li>-Lack of systematized people and work distribution</li> <li>-Little delegation leads to uneven work-load</li> <li>-Competence gap emerges between employees</li> </ul>

The next section elaborates on the kind of competence developed through CD investments and daily operations in INFO.

### 7.2.5. Type of competence developed

As shown, the competence in INFO is to a high extent individually controlled and developed in close interaction with clients. In order to further elaborate on the type of competence developed in INFO, there is a need to move closer into the work people do in client assignments.

At INFO, learning by doing in service delivery of communication work was highlighted as crucial by all informants. The communication work in the firm includes at least three important steps: planning, developing, and implementing effective means. Overall, this can be seen to represent the functional part of the service delivery. According to the CEO, the agency

uses a broad work approach. *“We don’t have any fixed routines or tools. It’s important for us to be flexible and not tied to the use of specific areas. As an example, we don’t have a design section within the agency. Rather, we adjust to each client, sort out, and use the means we find to be the best suitable in terms of effect”*. Hence, the services can include everything from producing written materials or arranging events and seminars, to using media, video, or internet, or, to train managers, or talk with media people. Often, a combination of different means is chosen. Hence, the communication process typically also includes contact with external people on behalf of the client. In this respect, contact with journalists is important. Part of this work is to make the journalist sufficiently interested in the theme to cover the subject. Thus, keeping good relations with individuals who represent different parts of the media industry, as well as knowing what engages single journalists, are relevant to the result of the communication process. According to the informants, the use of these various means are not specific to INFO, but commonly used in the industry. As such, functional competence related to the use of these means can be viewed as technical trade competence (Nordhaug, 1993) in PR- and communication work. In this respect, what functional communication competence is, however, can be discussed. A client responsible illustrates: *“The communication consulting industry is a young industry, with a short history, and with no methodology or clearly defined functional subjects of its own”*. According to the informants, the industry is dominated by journalists, economists, and people with previous experience in marketing. In addition, according to the CEO, information advice adjoins several other areas such as management consulting, advertising, and editorial services. Nevertheless, based on the empirical material, a certain type of competence of specific communication subjects is developed through service delivery. Therefore, it seems fair to say that the competence people at INFO develop when working with communication services, to a high degree involve what can be termed ‘communication functional competence’.

Further, the communication work at INFO is based on three specific values: To see the clients’ goals, to listen to the target groups, and to talk directly to the people concerned through goal oriented communication. These values is especially developed and designed in INFO in order to serve as the foundation for the way of working. Even though the client responsables are highly autonomous regarding how they choose to do their job, the empirical material also indicates that the three overall values function as guidelines for the service delivery processes at INFO. Hence, it seems as if learning by doing in client assignments also includes what can be termed ‘project competence’, i.e. the guidelines for how to conduct projects. In light of Nordhaug’s (1993) typology, this type of competence seems to be rather firm specific. Hence, people at INFO also seem, to some extent, to develop

firm specific competence, or what Nordhaug (1993) terms unique competence.

Learning from interaction with clients is important at INFO. However, people claim to learn different things according to their current level of competence. For example, less experienced employees, like the project leaders and some of the advisors, learn from simply being present at client meetings. On the other hand, the most experienced people, the client responsables, typically learn related to the overall communication process through finding the means that potentially provide the best effect for each particular client organization. Hence, such competence which is developed in interaction with clients is in this study termed 'client interaction competence'. Gaining trust from clients and developing good relations with clients are emphasized as absolutely crucial. Therefore, competence developed with regard to these issues is also included in the client interaction competence.

Further, based on the single client responsible's personal relations to clients, high autonomy on all parts of work, and independence of other colleagues, INFO seems quite extreme in its reliance on and development of individual competence. The little investment in collective competence further underlines this argument. Even though services are to be grounded on three core values, the actual operationalization and practicing of them at a more detailed level seem to vary from individual to individual. Further, the seminar on the history of the company was regarded useful in terms of sharing a collective understanding of the development of the firm. However, systematic efforts to enhance collective competence are very scarce. Hence, with regard to resource ownership (Løwendahl, 1992; 1997), the competences in INFO are very much individually controlled and client related.

Overall, thus, people in INFO seem to develop 'client interaction competence', 'communication functional competence' of a technical trade nature, as well as firm specific 'project competence'. The competence developed is client related and primarily controlled by individuals.

From the above analyses, the following section ends this chapter by suggesting that a 'client interaction dominant CD process' characterizes competence development in INFO.

### 7.3. A client interaction dominant CD process

It is argued that the creation and nurturing of unique relationships with clients stand out as crucial at INFO. In this regard, senior professionals are highly autonomous, each with his own portfolio of clients based on long-term relationships. The people of INFO work closely with the clients in service delivery, and the degree of success achieved is evaluated by the clients as the primary reference group. Therefore, learning in interaction with clients is vital in order to meet client demands, provide good advice, and develop communication solutions which result in expected effects and client satisfaction. The competence of the client responsables is to a high extent individually controlled and client related. Less experienced employees are primarily trained through years of apprenticeship working with the client responsables and in interaction with the clients. Based on these conditions, a 'client interaction dominant CD process' is suggested as the way in which people at INFO develop competence. According to Løwendahl (1997), client relation based PSFs try to develop long-term relationships with given clients or client groups through personal selling efforts by senior professionals and tend to put substantial effort into the development of strong personal ties between client firm representatives and professionals. Clients are loyal to individual professionals rather than to firms, and authority lies with the client decision maker. Thus, the client interaction dominant CD process seems to be well in line with the features of the suggested client relation based generic strategy for INFO. Table 22 summarizes the client interaction dominant CD process in INFO.

*Table 22. CD process in INFO*

<b>Client interaction dominant CD process</b>	
<b>CD policy</b>	Person-to-person approach. No reliance on IT.
<b>Investments in CD</b>	Relies primarily on internal training, often conducted in collaboration with external people. Office rotation.
<b>CD in daily operations</b>	Typically through an interplay between working alone and together with others in client assignments. Client responsables learn primarily through interaction with clients. Project leaders and advisors learn from more experienced colleagues and from clients.
<b>Type of competence</b>	'Client interaction competence', 'communication functional competence' of a technical trade nature, and firm specific 'project competence'. Competences are very much individually controlled and client related.

Based on the finding that INFO pursues a client interaction dominant CD process, competence development through client interaction is important.

However, when further exploring CD in INFO, it seems as if systematic competence efforts are not taken very seriously. Rather, going after the billable projects in order to maximize profit appears to dominate, as further discussed in the next section labelled “Cash is King”.

#### **7.4. Cash is King**

At INFO, learning primarily takes place as a by-product of client projects. The project responsables learn (almost) exclusively from projects, whereas the learning of advisors and project leaders depends on the degree to which the project responsables invite and involve them in project work. Particularly important in INFO is the development of good, long term client relationships, as well as learning through interaction with clients. However, nothing systematic seems to adhere to work distribution or learning in client assignments other than that they take place unsystematically.

Beyond ad hoc learning through assignments, claimed investments in CD and their actual contribution to such purposes can be questioned. One effort emphasized, the rotation of people in the office landscape, seems to bring about learning. Yet, the effort also appears as very limited. People are placed together in the hope that close proximity can help them learn something from each other. The learning, thus, further depends on the single individual’s ability to make use of this arrangement. Again, some are better than others at taking advantage of the opportunities which arise, for example from overhearing conversations that other people have. Hence, the actual importance and effect of office rotation on CD can be quite limited. In addition, the little attention to and consciousness about CD in general in the firm may reinforce this. The little priority and communication of CD issues may further also help explain why the Monday meetings do not facilitate much CD. As one informant said, this *could* have been an arena for competence sharing, but that doesn’t happen. Instead, it often boils down to “twaddle” and superficial project summaries.

When it comes to the internal courses and seminars, particularly the seminar on the history of the firm seems to promote culture building rather than CD. Most courses and seminars are driven forward by project demands. This means that they are arranged due to needs emerging from the assignments, actual as well as anticipated. For example, the English course is a consequence of serving increasingly more English speaking clients, whereas courses in investor relations are established to develop competence to better cater to stock listed firms and their particular information needs. Yet, the examples of courses and seminars mentioned by the informants are very few. Some even claimed that they had never been to any external course. This

shows that very limited resources in terms of time and effort are invested in CD. This is particularly so if one regards the English course as basically translating current “competence” into another language. In addition, the growing number of employees makes it problematic to get the hang of CD orchestration and processes. With high time pressure, it is easier to use the people that already master instead of spending time developing those in need to learn. As a result, uneven workload and the creation of an A-team and a B-team with regard to competence make it worse, as it further increases the gap between competent and less competent people.

Hence, while CD does not come far up on the firm’s priority list, what gets first priority is the clients, i.e. pleased clients. Examples of high client priority are many: People skip the Monday meetings although presence is mandatory, and late evenings, vacations, and weekends are sacrificed in order to deliver what is promised. What is driving people to put so much extra time into their work? This question seems particularly relevant as most of the seniors and advisors have families with small kids. An answer, thus, seems to relate to money based incentives. More billable hours also means more money, particularly in the hands of the client responsible. The loose organization of the firm, which resembles a collection of many self employed contractors, supports the notion of high independence for single individuals to both *make* the money themselves and to *keep* most of what they earn. As one informant explicitly stated: “*Cash is King ... the money rules the game ... even though you may have been told otherwise*”. In such an environment, the short term profit perspective is at the forefront, and the cash is king mentality influences work life at INFO and sets limits for the priority of CD. To the contrary, taking CD seriously means to plan for and prioritize such efforts. At INFO, it is up to the manager and the partner group to make such priorities, also as owners of the firm. According to the CEO, half a million NOK in total bonuses were recently distributed among the senior employees/owners of the firm. Hence, the owners *can* choose to take out a little less in bonus and spend a little more on developing the competence of e.g. the so-called “B-team”.

Essential to the client acquisition process of INFO is winning the client’s confidence by appearing as a reliable person to be trusted. This appearance does not necessarily have to do much with substantial communication competence. But, on the other hand, this may just be the case. Since clients are getting increasingly better at negotiating contracts with consulting firms when purchasing services from them (Skjølsvik et al., 2007), they may not be easy to fool if consultants do not meet their expectations regarding quality and competence. In order to build trust, then, it is likely that at least some competence about the given topic must be shown in order to persuade the client. What is needed to win trust among clients may vary from individual

to individual, for example by the degree to which clients are persuaded by the consultants' rhetorical skills (Alvesson, 1993; 2004). According to the CEO, much of what INFO sells is trust. This indicates that how people behave during interaction with clients becomes crucial. Rhetorical skills are argued to be important particularly in knowledge intensive firms, because of the intangible nature of the services, and thereby the difficulty of trying out the delivery in advance (Alvesson, 2004). As a communication consulting firm, communication is the core service of INFO. Therefore, it is not very surprising that people are good at expressing themselves. After all, this is what the clients pay them for.

In this respect, what the client responsables seem to be good at is to lower client expectations. *"In the sales process, we cannot guarantee results in advance. We can only say what we assume to be the result. We do not promise too much either, as some competitors often do. We rather lower the clients' expectations than raise them. If we then deliver more than promised, it's much easier to achieve renewed trust"* (client responsible). According to the informants, many clients come to them with very high expectations of what it is possible to do for them in terms of for example PR. Some even expect to see their firm and their concerns adorn next day's front page of the national newspapers, or to appear as an important feature at the prime time news. Such clients are told that it does not work that way. In this process, an important part is to inform the clients about what is realistic (for example what has the charm of novelty and what does not), how INFO as a communication bureau works (for example that it is not possible to pay papers to write their story), and what INFO can do for them (for example that they can only try to call journalists' attention to a given subject, but that it is entirely up to the paper to decide whether the case is worthy of publicity or not). Nevertheless, even in meetings with clients with more realistic prospects, often the client responsible deliberately tries to lower the client's expectations, thereby increasing the possibility of exceeding them through actual service delivery. The result then is happy, satisfied clients. Hence, underpromise of delivery also seems to be an important part of building long term client relationships.

Quite in contrast to the emphasis on billable hours, people at INFO also try to appear in a relaxed fashion compared to many of their dressed up competitors. The manager says that they do not keep the same focus on billable hours as several of their competitors, who entitle each other "the King of billable hours" etc. according to who has billed the most hours last week, month, or year. Further, people in INFO do not seem to try to give the impression of being better than they really are. They say upfront and on their own initiative that the firm consists of a "bunch of half educated pirates" who really do not have the biggest ambitions, but who see PR as a lifestyle

and like having fun while at work. In addition, people are hired primarily on a gut feeling, based on their talent to be trusted by clients. These characteristics, together with the importance of winning and sustaining clients through rhetorical skills and underpromise of delivery, indicate that outstanding knowledge is not necessarily required. It looks as if an important part of at least the sales process depends more on being reliable and trustworthy than being particularly bright. At least, it does not primarily call for the *very* best and the brightest in terms of intellectual capacity. In this respect, INFO may appear as more relations intensive than knowledge intensive.

Thus, another question arises: Is INFO really a professional service firm? This is open for debate, particularly regarding the characteristic that *“professional services are highly knowledge intensive, delivered by people with higher education, and frequently closely linked to scientific knowledge development within the relevant area of expertise”* (Løwendahl, 1997:18-23). Most INFO employees have higher education, but some have not obtained the final degree because they have not yet finished the main thesis. Further, the degree of “knowledge intensiveness” and what is required to be classified as “knowledge intensive” can be debated. Following Løwendahl (1997), a client relations based firm do not need to be equally knowledge intensive as a problem solving based firm. In terms of INFO, the high degree of customization involved in the services as well as the high degree of discretionary effort and personal judgement, particularly by the experienced client responsables, can be taken as indications that a certain degree of knowledge intensiveness is involved in their work. In addition, the firm operates in accordance with high ethical standards, which are based on guidelines of the Norwegian Public Relations Consultants Association and the International Communications Consultancy Organisation. Further, in line with Løwendahl’s (1997) definition of PSFs, the work at INFO involves substantial interaction with the client firm representatives, in which client needs are at the forefront. Hence, compared to these requirements, INFO is in this study seen to fit into the PSF categorization, although this view may be disputable.

Based on the above analyses, it can be concluded that whereas CD at INFO takes place largely through interaction with clients, the firm is not very sophisticated when it comes to interest in CD, CD orchestration, and CD implementation.



## **7.5. Summary**

This chapter has presented and analyzed the empirical findings of INFO. It is suggested that INFO pursues a 'client relation based generic strategy' in general and a 'client interaction dominant CD process' in particular. The CD process of INFO is characterized by learning through interaction with clients. The competence developed is typically individually controlled and client related, yet also based on firm specific processes as well as more general communication functional competence. However, whereas CD at INFO primarily takes place through interaction with clients, the firm is poor at prioritizing CD efforts. Rather, the prospects of earning increasingly more money seem to steer work at INFO. As a result, a short term "Cash is King" mentality overrules other concerns, placing long term CD efforts far down on the priority list.

The next chapter addresses comparisons across the four firms.



## 8. Cross-case comparisons

This chapter compares the within-case findings across the firms. The comparisons are guided by the five research sub questions posed in chapter 1, and structured according to the conceptual framework of elements suggested important to competence development in PSFs. First, the CD processes identified are compared through analyses of similarities and differences regarding CD policy, investments in CD, CD through daily operations, CD facilitators and constraints, and types of competences developed. The aim is to analyze the relative strength of the salient findings from each firm in order to discuss patterns across the firms. Second, the overall CD processes are analyzed in light of generic strategy. This is done in order to discuss linkages between different CD processes and types of generic strategies. Third, a discussion of how good these PSFs really are at competence development follows. The aim is to analyze similarities and differences in order to reach an understanding of how competence development takes place based on four PSFs. Finally, a summary of the major findings is given.

### 8.1. The CD processes compared

How does competence development take place in the four firms studied? Based on the within-case analyses, the answer is that competence development takes place through a creativity dominant CD process at CREO, a functional expert dominant CD process at TEKNA, a multi-disciplinary and efficiency dominant CD process at ENGY, and a client interaction dominant CD process at INFO, as illustrated in table 23. There are both similarities and differences between these CD processes. The word “dominant” expresses that certain characteristics of the CD process are at the forefront in each firm, but it does not mean that the other processes are not present. Below, the single elements that underlie the CD processes are compared, starting out with CD policy.

*Table 23. CD processes compared*

	<b>CREO</b>	<b>TEKNA</b>	<b>ENGY</b>	<b>INFO</b>
<b>CD process</b>	Creativity dominant	Functional expert dominant	Multi-disciplinary and efficiency dominant	Client interaction dominant

### **8.1.1. CD policy**

What is done from the firm's side in terms of approaching and orchestrating competence development? It seems as if there is a more conscious attitude to CD in CREO compared to the other companies. Whereas CREO frequently sets aside a small number of hours for CD purposes, there seems to be few systematic CD efforts in INFO. To the contrary, at INFO, there is generally little explicit focus on CD. In a position between the emphasis CREO and INFO put on CD, TEKNA is trying to establish systematic routines for CD efforts. In contrast to CREO and INFO, TEKNA relies increasingly on databases and an IT platform for these purposes. Compared to TEKNA, ENGY has come much further in terms of investments in systematic CD based on IT. A uniform system is implemented throughout the office units, including an arrangement for competence sharing run by particular functional coordinators. In comparison, CREO and INFO do not rely on IT in their efforts to share competence.

These differences may stem from several reasons. One difference relates to firm size. In small firms, it may be both easier and more efficient to develop competence based on direct interaction among employees, whereas in large firms with more people, IT can enhance the scope and efficiency of explicit competence sharing. The growth INFO experiences can be used as an illustration. In this respect, growing from ten to almost twice the number of people changes the organization and the needs for structure and coordination. INFO's response to these emerging needs is not investments in databases, but a reorganization into smaller groups. On the other hand, in firms like TEKNA and ENGY with several hundred employees, more structure is required in order to support firm efficiency and effectiveness (Starbuck, 1992). Both TEKNA and ENGY have recognized these requirements, and have made huge investments in technology for the support of uniform CD systems. The reliance on IT may also relate to the type of work done in these two firms. In both engineering companies, the use of sophisticated technology-based tools is essential. CREO and INFO rely very little on computers in their work beyond searching the web and mastering Apple/Office programs as working tools for typing and making presentations. In TEKNA and ENGY, people are dependent on CAD in order to be able to do their work. CAD requires a relatively sophisticated understanding of its functions. The CAD software programs are under continuous development and the users need to stay updated as new versions arrive. This suggests that in addition to firm size, the type of work people perform in the firms, as well as experiences with computer-based tools, influence investment in IT also with regard to CD.

Notwithstanding the reliance on IT, all four firms have an explicit policy on learning through projects based on face-to-face collaboration. This shows

that in the words of Hansen et al. (1999), a person-to-person approach is applied throughout all four firms, however, with various degrees of IT support. Hence, even though the firms are classified within the same person-to-person category, there can be larger variations among the firms than what the article by Hansen et al. (1999) indicates. As a result, this calls for a more fine grained classification of Hansen et al.'s (1999) person-to-person approach. Thus, the person-to-person dimension in the framework of Hansen et al. (1999) can take on a variety of forms depending on the degree of IT to support CD. It even looks as if a small firm can focus 100 % on this approach, and still be performing well. Table 24 illustrates similarities and differences with regard to CD policy across the four firms.

*Table 24. CD policies compared*

	<b>CREO</b>	<b>TEKNA</b>	<b>ENGY</b>	<b>INFO</b>
<b>Person-to-person approach</b>	Yes	Yes	Yes	Yes
<b>IT support (people-to-document)</b>	Low	Medium	High	Low

### *Summary*

In answer to the first research sub question, a person-to-person approach with varying degrees of people to document as support constitutes the CD policy across the four firms. Variation is identified within the person-to-person classification with regard to firms' reliance on IT based on their approach to and orchestration of CD. This suggests that the person-to-person dimension set forth by Hansen et al. (1999) can be further cultivated to address more fine grained forms of variations depending on the degree of IT to support CD.

### **8.1.2. Investments in CD**

How do professionals develop competence through investments in such processes? The within-case analyzes show that all four firms make investments which result in CD. Hence, these findings support Itami's (1987) suggestion that such investments represent an important route to CD. Examples of specific investments are the Idea Board at CREO, the IT platform in order to support systematic career development in TEKNA, the development of the ENGY-system at ENGY, and office rotation at INFO.

Typically, the firms rely on both internal and external training. Investments in internal training are referred to as 'internal arrangements' in CREO, 'internal forums' in TEKNA, 'internal seminars' in ENGY, and 'internal courses and seminars' in INFO. However, TEKNA seems to rely the most on internal people compared to the other firms. CREO uses a mix of internal and external people in their internal development arrangements, whereas INFO predominantly uses external sources. CREO and INFO seem to rely on external people to a larger extent than TEKNA and ENGY. Large firms with hundreds of employees are able to draw on internal resources to a much greater extent than smaller firms (Nordhaug, 1993). Still, CREO relies to a much larger extent on internal people compared to INFO. This seems to relate to the broad heterogeneity in terms of the competences of CREO-employees. In addition, the workers at CREO are all seniors with extensive experience. However, the degree of emphasis put on CD in CREO is also likely to influence the efforts made with regard to learning. For example, CREO is the only company which has, on a regular basis, established a network of external people for internal CD purposes. On the other hand, ENGY is the only firm which offers an introductory program to newly hired employees.

CREO uses the internal arrangements to generate ideas and further develop their tools and processes. The aim of the internal forums in TEKNA is to develop functional competence, whereas the aim of the internal seminars in ENGY is to develop functional competence across disciplines as well as common working procedures and efficient project management. In contrast, the courses at INFO are claimed to not promote functional competence. In this respect, communication as a functional field is not by far as developed as engineering. This may be one reason why the emphasis on functional competence is stronger in TEKNA and ENGY compared to CREO and particularly INFO. Another explanation seems to relate to the nature of the types of services the firms offer. TEKNA and ENGY typically provide advice based on thorough mathematical calculations, often evaluated in light of certain nationally or internationally developed standards. In comparison, the managers of CREO and INFO say that they sell processes and trust, respectively. Hence, personal chemistry and good dialogue with clients become vital. These aspects were also emphasized in TEKNA and ENGY, however, they seem even more crucial to the communication consulting firms due to the higher degrees of personal client evaluations involved in these firms' services. In addition, INFO differs from the other firms in its emphasis on office placing as a tool consciously used to promote internal learning.

External training is important to three of the firms. Whereas CREO, TEKNA, and ENGY all rely on external courses, these seem to be in very

little use at INFO. Yet, whereas there are no brakes regarding financial support to external courses in CREO, TEKNA practices a very strict line with regard to external course participation. The degree to which people get to participate in external courses closely relates to costs and the firm's economic situation. Yet, the degree to which people in TEKNA participate in external courses may also relate to a good self-image - just as much as to costs. In comparison, CREO appears more vulnerable in terms of sending people to courses because of the few employees. On the other hand, CREO finds itself in a good financial situation in which spending money is claimed to be easier than spending time. To the contrary, TEKNA and ENGY compete for bids in an environment which particularly appreciates low prices. After attending an external course, it is expected that the competence gained is shared by inviting colleagues to an internal seminar. This pattern is the same across all four PSFs.

The data also shows that some of the training activities referred to as internal training are arranged by and for people in the firm, however, to a large degree carried out by external people. Examples are CREO's Idea Board, TEKNA's managerial courses, ENGY's project management courses, and INFO's seminar on the history of the firm. This suggests that all four firms have training activities that do not fit directly into either of Nordhaug's (1993) categories of internal training on the one hand and external training on the other. According to Nordhaug (1993), the main difference between internal and external training relates to their respective degrees of market exposure. However, this study shows that training can be highly customized to each firm. The training is not only based on adjustments due to market demands, but emerges as a result of network relationships and efforts made to stay ahead of clients and competitors, as in CREO. This suggests that a resource led stretch rather than an environment based fit (Johnson & Scholes, 2002) is pursued. This means that competence is developed to create market needs, rather than to merely correct a positioning directed by such needs.

CREO, TEKNA, and ENGY have an explicit policy on the importance of individual initiatives to learning. INFO has not made such an explicit statement. However, in practice, individual initiatives are important also at INFO. The content of the initiatives differs. Initiatives in CREO are made for internal purposes, whereas initiatives at TEKNA and ENGY are frequently also made for external settings such as teaching and branding activities at NTNU. Similarly, two of the client responsables at INFO give lectures at a graduate school that teaches communication. To be engaged in teaching activities as guest lecturers at the most recognized schools within one's field contributes to seniors' CD. TEKNA, ENGY, and INFO are involved in such activities for the sake of learning, as well as for recruiting

purposes. To some seniors, mainly with managerial responsibility, such initiatives frequently also involve executive committee work and membership in boards and associations. Across the firms, interaction in these kinds of professional networks is claimed to promote CD for the seniors involved. Common for these people is that they represent some of the most advanced expertise that each of the four PSFs can offer. This suggests that the more experienced a person grows in terms of sophisticated expertise, the more important networks become in terms of further competence maintenance and enhancement. It seems likely that the most experienced and competent professionals in a firm need to seek external contacts outside the firm in order to continue to challenge their competence. Further, if a person is among the top experts nationally, the most likely next step is to search for peer specialists worldwide. Compared to juniors, it seems as if seniors make CD efforts outside the firm to a much larger extent. Further, ENGY seems to have a stronger focus on the importance of managers' networking activities for the sake of gaining projects than the other firms. ENGY is also the only firm which is listed on the stock market, and which pursues an aggressive growth strategy. In general, seniors in TEKNA and ENGY participate to a less degree than juniors in courses. Instead, they are often responsible for them.

On the other hand, it seems as if lack of time to spend on CD efforts stands out as a major hindrance in all four firms. Little time stems from high client priority and tight project deadlines. Yet, the emphasis on time pressure is most clearly evident in CREO and INFO. This may be due to the fact that the time frames for the projects in these firms are typically shorter than in TEKNA and ENGY. In addition, the types of services INFO offers often aim at getting publicity in different media channels. Since the media business keeps a high pace and today's headlines are not long lasting, time becomes a scarce resource at INFO. According to Schön (1983), professionals need time to develop reflective learning practices. Little time seems to constrain the quality of the feedback from seniors to juniors, as well as general communication and sharing of competence in projects. As a result, short-term client pressures constrain long-term learning and CD. In addition, high work pace and the maximizing of billable hours may also be due to partners' personal interests in increasing their own short-term income. It can be asked if people in PSFs prioritize client projects to such a large degree that both value creation and learning risk being only short-term oriented, as opposed to strategic? If large parts of the business run on client terms, such a situation not only leads to little time for building competence on its own terms, it also compromises the firm's ability to compete in the long run.

Another similarity across the firms is that they all make efforts which do not fulfill their intentions with regard to CD. For example, at CREO, Traffic



does not sufficiently promote competence sharing. Similarly, the Monday meeting does not contribute to learning as intended in INFO, and particularly not for the client responsibilities. At TEKNA, the training course for international assignments was not entirely implemented. ENGY has an explicit policy which states that people have a personal responsibility for CD. Yet, many employees typically make few initiatives beyond project work. These efforts can be seen as investments which do not function as intended, or which are under-utilized. The main similarities and differences in terms of comparisons of investments in CD are summarized in table 25.

Table 25. Investments in CD compared

	CREO	TEKNA	ENGY	INFO
<b>Internal training</b>	-Internal arrangements: Contributions from diverse internal and external people. Promotes creativity -Systematic training efforts highly customized to the firm	-Internal forums: Contributions primarily from internal people. Promotes functional CD	-Internal seminars: Contributions primarily from internal people. Promotes functional CD, project management, common working procedures across offices and functional disciplines	-Internal courses and seminars: Conducted primarily by external people. Do not promote functional CD. Few CD investments for client responsables
<b>External training</b>	-External courses: No brakes regarding financial support	-External courses: Little use of external learning sources. Juniors experience very restricted access to external courses	-External courses are used as a supplement to internal training in order to develop functional competence	-Few external courses
<b>Specific investments</b>	-The Idea Board	-IT platform for the support of systematic career development?	-The ENGY-system -Functional coordinators	-Office rotation -Future organizational restructuring?
<b>Individual initiatives</b>	-Made internal to the firm	-Many seniors make CD efforts related to external settings, e.g. in research projects and as guest lecturers at NTNU	-Some seniors initiate CD efforts outside the firm, e.g. as guest lecturers at NTNU	-Two of the client responsables are guest lecturers for students in communication
<b>Major hindrance</b>	-Lack of time due to client deadlines and high quality demands	-Lack of time due to project deadlines	-Lack of time due to project deadlines	-Lack of time due to client priority and work delegation
<b>Examples of efforts which do not fulfill CD intentions</b>	-Traffic is not seen as an arena for competence sharing	-Training investments that are not properly followed through during implementation	-Policy on personal responsibility for CD, however, people typically make few initiatives beyond projects (particularly juniors) -Courses after office hours reduce inspiration to participate	-To the degree that the Monday meetings do not fulfill the intention of competence sharing -Few opportunities to bring project leaders and advisors to non-billable training activities

*Summary*

In answer to the second research sub question, all four firms rely on a mix of internal and external training. In CREO, competence is typically developed through highly customized internal training activities based on employee

diversity and external networks in order to promote creativity. Despite its small company size, CREO seems to pursue the most systematic approach to CD compared to the other firms. In TEKNA, competence is primarily developed based on internal forums. The firm relies the most on internal resources due to its comprehensive in-house expertise. In ENGY, people develop competence from a combination of internal and external training, and seem to rely on external training to a much larger extent than TEKNA. In INFO, competence is primarily developed from internal courses conducted by external people. Relative to the other firms, INFO appears to invest least in training. The analysis also suggests that individual initiatives play an important part, particularly to further develop the competence of very experienced professionals. High time pressure due to client priority and short project deadlines reduces opportunities for non-billable training. The cross-case analysis supports Itami's (1987) suggestion that investments in training represent an important route to asset accumulation in terms of CD. The analysis further indicates a broadening of existing theoretical classifications of internal and external training in order to give room for other or more complex needs for training than the ones grounded in adjustments to market demands. Nordhaug's (1993) clear distinction between "internal" and "external" based on who is arranging the training gets blurred when there is a close integration between employees and external collaborators who both contribute as inputs to and outputs of a learning process which benefits both.

Next, CD in daily operations is compared.

### **8.1.3. CD through daily operations**

How do professionals develop competence through daily operations? From the within-case analyses, the following main elements stand out as important: 'learning by doing in client assignments', 'project role', 'project phase', 'project size', 'meeting clients face-to-face', and 'collaboration with networks'. Each of these is further addressed below. In addition, the within-case analyses indicate that there is a distinction regarding the way in which CD takes place between newly hired and less experienced juniors on the one hand, and experienced seniors on the other. Thus, a comparison between these two groupings is also attended to.

#### *Learning by doing in client assignments*

At all four firms, CD through daily operations takes place in project work for clients. Learning by doing from challenging tasks in projects stands out as the most important source to CD across the PSFs studied. These findings, thus, support Itami (1987) by highlighting that learning through daily operations represents an important route to CD. Beyond this overall similarity, differences occur at more detailed levels. At CREO, learning by

doing while working together with colleagues is emphasized. In this respect, team collaboration between seniors with highly diverse competences is highlighted to support creativity and CD. In addition, the firm's beneficial market position and its complex process-based services promote learning at work. At TEKNA and ENGY, there is a distinction between relatively newly educated, less experienced people ('juniors') on the one hand and more experienced workers ('seniors') on the other. Important to seniors' CD is peer collaboration, whereas juniors primarily learn from senior colleagues. In addition, learning by doing while working alone on the computer is also essential for CD in TEKNA and ENGY, particularly for junior employees, but also for seniors in order to stay updated on new software programs and engineering techniques. At INFO, learning by doing while working alone as well as together with colleagues promotes CD. Project leaders and advisors learn from client responsables, whereas the client responsables learn from peer collaboration. Hence, findings across the companies illustrate that CD in daily operations typically takes place through learning by doing in project work, which involves direct collaboration with colleagues. In other words, learning through what can be termed *interaction in intra-firm relations*, contributes to CD across the four firms. This illustrates that while learning from individual experiences (e.g. Kolb, 1984) is documented in this study, particularly in TEKNA and ENGY, learning from collective social interactions (e.g. Lave & Wenger, 1991) stands out as the primary way to CD in daily operations. Yet, across the firms, learning individually *and* collectively seems highly important to competence development. Thus, an *interplay* between learning from individual experiences (e.g. Dewey, Kolb, 1984) *and* social interactions (e.g. Lave & Wenger, 1991) is suggested to support CD in this study.

On the other hand, across all four companies, high time pressure due to client demands and high client priority reduce the time available for reflection and conscious competence sharing in projects. This supports previous findings that time represents a scarce resource in PSFs (Maister, 1994). Clients are claimed to be increasingly more demanding. For example, at CREO, the trend of high speed in society in general puts increasing pressure on reducing the time between order and delivery. This is particularly the case at INFO, regarding their PR-based services related to rapid shifts of focus in the media. Further, with new technology, it is possible to require higher speed and a higher level of technological complexity in the solutions than before. In particular, this applies to the IT-based services of TEKNA and ENGY. It seems as if high time pressure is especially negative for juniors' learning. This aspect was particularly highlighted in TEKNA and INFO. Simultaneously as the time frames for CD become poorer, the demand for faster and more sophisticated learning is growing. This seems to add to the pressure on young and inexperienced

people to gain competence faster. At the same time, it also increases demands on the seniors who are expected to guide the juniors. In a setting where time is scarce, the project responsables, particularly in CREO and INFO, say they can work much faster and earn more for the firm by working on their own, than when bringing along learners. As a result, the degree to which seniors involve juniors vary from person to person.

Further, the project leaders compose the teams they are responsible for. However, few guidelines for team staffing and resource utilization exist in the four firms. As a result, teams do not seem to be composed with a view to CD. Rather, little systematized people and work distribution make opportunities for learning arbitrary and ad hoc. Yet, in TEKNA, and particularly in ENGY, the division managers have an overall responsibility for balancing the work-load among employees. Still, project leaders are in a position to select co-workers they prefer to work with. It was seen as problematic when teams were composed according to the project leader's personal likings and preferences. The lack of appropriate systems for work delegation also adds to the high work and time pressures on the seniors. Such a situation is described as the underdelegation problem (Maister, 1993). As a result, seniors are left with little time to reflect upon their practice and reduced time for learning through discussions in peer interactions. At the same time, less experienced people get limited opportunities to learn from interaction with more experienced colleagues. When the time available for seniors to guide juniors decreases, the quality of the feedback is also likely to be poorer. Little delegation in terms of task distribution which leads to uneven work pressure seems particularly problematic in INFO. Yet, also CREO and TEKNA show some of the same symptoms of unevenly distributed work loads. Further, a variety of practice opportunities and increased responsibility were identified as positive to CD. However, at CREO, the designers sometimes get too little work, and experience fewer opportunities for CD compared to the consultants, whereas the juniors at TEKNA say they get too little responsibility in projects. In particular, however, an uneven distribution of work tasks appears most problematic in INFO, where a competence gap is claimed to emerge between people in the work force, depending on the degree of involvement in CD activities and the type of practice opportunities they are exposed to.

#### *Project role*

Each project in the case-firms is carried out by a project team consisting of a project leader and project co-workers. A project involves people who perform different activities in order to deliver a client service. At CREO, typically the most experienced consultants work as project leaders, with designers and newly hired consultants as co-workers. Similarly, in TEKNA and ENGY, seniors with and without formal managerial responsibility work

as project leaders. The same goes for INFO. Here, the client responsables are in charge of the projects, and correspond to the ‘project leaders’ in CREO, TEKNA, and ENGY. A project leader of one project can also work on other parallel projects as co-worker. Across the firms, being in charge of a project means that the project leader has the overall responsibility vis-à-vis the client. This includes responsibility for composing the team, planning the project, as well as keeping track of costs and time frames. Senior informants of all four firms claim that they learn the most when they function as project leaders. Hence, seniors develop competence through *the role as project leader*. At CREO, the project leader is particularly concerned about making the process work, whereas at TEKNA, choosing and making the right technical solution is important to the project leader. At ENGY, organizing in order to deliver services on time and within the budgets agreed upon is at the forefront, whereas at INFO the client responsible pays particular attention to client satisfaction.

In contrast, the co-workers do not have extensive contact with clients, or formal economic or functional responsibility. At CREO, the designers and newly hired consultants work as co-workers. The co-workers at TEKNA and ENGY consist of junior employees, typically people with less than five years experience with engineering design. At INFO, the newly educated people who are referred to as ‘project leaders’<sup>51</sup> and the advisors serve as co-workers. Co-workers are involved in the “production work”, which refers to the execution and making of the actual delivery to clients. For example, in CREO, production work includes the making and application of lay out and sound to communication events, or finding material relevant to the client problem by searching for appropriate sources of information. At INFO, co-workers are occupied with activities like “research” work, where the purpose might be to gather data about the client firm, their market and competitors, for example by searching the web, calling experts for their opinion on the given topic and so on. In TEKNA, production activities mainly consist of gathering information and developing measures in order to draw required buildings and structures in CAD. The same is the case in ENGY, where co-workers do the calculations and planning necessary to build or maintain functional cross-roads, power stations, or water turbines. Across the four firms, juniors and newly hired people claim that they develop competence while working as co-workers in projects. This illustrates that particularly newly hired and less experienced people develop competence through *the role as project co-worker*.

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<sup>51</sup> The emphasis is used to distinguish the ‘project leader’ type of worker in INFO from project leaders in charge of the projects at CREO, TEKNA, and ENGY (who are called client responsables at INFO).

The project leader and project co-worker roles further impact which phases of project work people are exposed to.

*Project phase*

In all four firms, projects run through different sequences or phases. The within-case analyses show that the phases people are involved in during project work influence CD among project leaders and co-workers. The project leader follows the project from start up through the execution and production phases, and to the closure, including potential follow up after project completion. This way, they gain competence connected to the *totality* of a project, and how different elements of a project fit together. To project leaders, being involved in the pre-phases of project work facilitates CD because they often involve high degrees of innovation. This is where the frames are set and critical decisions made. At CREO, such pre-phases take place in collaboration with clients. During the pre-phases, the project is defined and alternative suggestions for approaching the problem in order to enable the client to face their strategic communication challenges are discussed. In a similar vein, seniors of TEKNA and ENGY point to the innovative work in the pre-phases of projects as important to learning. Likewise, in INFO the pre-phases constitute the foundation for establishing the other building blocks of the assignment. Then, creativity and experience are needed in order to see and predict what solutions will potentially lead to the best client result regarding effect, be it in terms of publicity or increased sale.

On the other hand, junior/newly hired co-workers in the four firms handle specific areas of the project and develop competence in particular, restricted *parts* of it. Co-workers are typically mid- or late phase entrants. They enter the project after the frames have been set and “production” is about to start, or has already begun. They work not only in certain project phases, but also in phases which according to the seniors usually involve more routine than creativity, in order to gain competence in basic service delivery. In all four companies, all informants further claim that they learn from conducting activities in a variety of phases of project work. In this respect, it is crucial to gain competence on how projects are built up, the content of different sequences, as well as how different parts or steps relate and are supposed to fit together in the totality. However, at TEKNA and ENGY, the different project phases are emphasized to a larger extent than at CREO and INFO. This seems to relate to the relatively larger sizes of the projects at TEKNA and ENGY in terms of people involved, the time frames and the costs, and not least, the dependencies in a project.

### *Project size*

The within-case analyses of the four firms show that CD is influenced by the size of the project, and that the difference between the project leader and the project co-worker roles is most notable in large projects compared to small. However, “large” and “small” have different meanings in the different PSFs. Large in TEKNA and ENGY refers to projects that run for several years. The largest project mentioned lasted for ten years, whereas the smallest assignment mentioned was completed within a couple of days. On average, large projects last for at least three years, whereas small projects last for about one year or less. With these references, many projects in TEKNA and ENGY are small. In contrast, large projects in CREO and INFO refer to projects which run for a year or so. These are, however, quite rare. Small projects are mainly completed within a couple of weeks or months. From time to time, INFO has assignments lasting for less than a day, for example when a client only requires the writing of a press release. However, retainer agreements are common at INFO, and these can be renewed and run for several years. Notwithstanding these differences, the findings show that the impact and importance of large and small projects, in the context of each of the firms, are surprisingly similar.

Typically, *large projects* are seen as more developing because they usually involve more people, resources, and longer periods of client interaction than smaller projects. Further, compared to small projects, large projects involve more time on each project phase, which increases familiarity with different parts of the project. In addition, large projects seem to contain more written, “codified” material, which makes it easier to share competence among members of the team. At the four firms, there seems to be a connection between activities in large projects and high degrees of senior CD. In particular, being project leader of large projects is claimed to bring about CD. A difference is that TEKNA, and particularly ENGY, emphasize large, multi-disciplinary projects as crucial for learning because such projects promote broad competence across engineering fields. In contrast, CREO and INFO do not distinguish between uni- and multi-disciplinary projects. At CREO, all project teams are heterogeneous with regard to team members’ educational background. Also for less experienced people, being involved in large projects promotes CD. Yet, *small projects* can also involve a lot of learning, but often for other reasons than large projects. Whereas interviewees in all four firms mentioned activities in large sized projects as important for CD, some juniors of TEKNA and ENGY also emphasized small projects in which they were given responsibility as project leaders. In particular, it seems as if practice opportunities in small projects represent important learning especially for people with a few years of experience. The reason for this seems to be that they gain increased responsibility for a variety of tasks, as the division of labor between project leader and project



co-worker is not as distinct as in large projects. In addition, they also get a better overview of the totality.

*Meeting clients face-to-face*

Another similarity across the firms is the importance of the client to CD. First hand learning from clients requires face-to-face meetings. This means that CD emerges through collaboration between client and supplier, which promotes learning that goes both ways. However, differences also occur. At CREO, meeting the client together with colleagues facilitates CD. CREO and INFO prefer competent clients with open-ended requirements. Contact with public sector clients with engineering background supports CD at TEKNA and ENGY. In contrast to CREO and INFO, ENGY wants clients with specified requirements. Yet, overall, there is a strong connection between the degree of problem specification and the strength of the client relationship. High degrees of freedom in service delivery are typically provided by clients based on trust developed from long-term client-supplier relationships. This pattern is especially strong at INFO and CREO. For seniors, discussions with a variety of clients, including new and untraditional, support CD. For juniors, active participation in client meetings, as well as just being an observer and listener, promote learning. Hence, based on these comparisons across the four firms, competence is developed through *interaction in client relations*. This shows that external sources of competence are critical to the CD process of the PSFs studied, and particularly regarding the seniors. This finding also challenges the typical intra-firm perspective applied to studies of PSFs from a resource based approach (e.g. Løwendahl, 1997; Morris & Empson, 1998). This study suggests that an extension beyond the limits of the single firm seems required when studying CD in PSFs.

However, in the firms studied, direct access to clients is closely linked to the role as project leader, and there are limited resources to bring co-workers to client meetings because each person needs to bill a certain number of hours per day. As a result, costs related to presence in client meetings often prevent co-workers from frequent client contact. In all four firms, the decision of whether to bring designers (CREO), juniors (TEKNA and ENGY), or 'project leaders' (INFO) to client meetings is seen as a big dilemma for the project leaders/client responsables in general. A lot of projects are small, and tight budgets make it problematic to bring in little experienced people "only" for the sake of learning. As a result, the degree to which co-workers interact in client-relations is restricted, and it typically occurs at an ad-hoc basis.

Another external source of importance to CD is collaboration in networks.

### *Collaboration with networks*

Networks typically include external contacts beyond clients. All the case-firms are connected to regular partners and partner firms that they collaborate with in certain areas, e.g. other consulting firms at CREO, research institutes at TEKNA, acoustics firms at ENGY, and advertising agencies at INFO. The networks can be found nationally as well as internationally, they can be based on project budgets or pure development, and the frequency and intensity of the collaboration vary. In CREO, the designers often contact external experts on e.g. web design. Similarly, at INFO, the newly educated 'project leaders' and the advisors collaborate closely with so-called event bureaus in e.g. the planning of large happenings aiming at attracting media interest. Particularly the juniors in TEKNA and ENGY maintain good connections with people they studied with at university. However, network relations may also involve more systematized collaboration with external contacts such as the hiring of an external expert on an hourly basis in ENGY. Hence, for co-workers, network relations are particularly important in problem solving activities where intra-firm colleagues are unable to assist. In contrast, the network activities in which more experienced people interact often relate to the gaining of projects in the first place. In this respect, such network collaboration indirectly influences CD in projects. Particularly ENGY emphasizes the importance of networking in order to get assignments. As a result, the case-firm comparisons suggest that *interaction in network relations* both directly and indirectly contributes to CD across the four PSFs. This finding further encourages the notion that an intra-firm approach to CD in PSFs is too crude.

The main similarities and differences between the firms with respect to CD through daily operations are summarized in table 26.

Table 26. CD through daily operations compared

	CREO	TEKNA	ENGY	INFO
<b>Interaction in intra-firm relations</b>	-Learning by doing while working together -Designers experience fewer opportunities for CD relative to consultants	-Learning by doing while working individually on the computer and together with others	-Learning by doing while working individually on the computer and together with others	-Learning by doing through an interplay of working alone and together with colleagues -Competence gap emerges between employees
<b>Project role, phase, and size</b>	-Project leader (consultant) learns from totality, large projects -Co-worker (designer/newly hired consultant) learns from parts and large projects	-Project leader (senior) learns from totality, large, multi-engineering projects, and peers -Co-worker (junior) learns from parts, mid/late phase, large and small projects, individually on the computer, and with seniors	-Project leader (senior) learns from totality including pre-phases, large projects, and peers -Co-worker (junior) learns from parts, large and small projects, senior colleagues, and external project collaborators	-Project leader (client responsible) learns from totality, large projects -Co-worker ('project leader'/advisor) learns from client responsables, parts, and large projects
<b>Interaction in client relations</b>	-Project leader meets the client together with colleagues -Costs prevent designers from frequent client contact -Prefers competent clients with open-ended requirements	-Project leader meets the client -Costs prevent juniors from frequent client contact -Prefers functionally competent clients with engineering background	-Project leader meets the client -Costs prevent juniors from frequent client contact -Prefers repeat builders with engineering competence and specified requirements	-Client responsible meets the client -Costs prevent 'project leaders'/advisors from frequent client contact -Prefers competent clients with open ended demands and experience with use of consultancies
<b>Interaction in network relations</b>	-e.g. other consulting firms	-e.g. research institutions	-e.g. key individuals and firms specialized in functional disciplines beyond those offered by ENGY	-e.g. journalists and other media people, event bureaus -Client responsables involve 'project leaders'/advisors to varying degree
<b>High time pressure</b>	-Yes	-Yes	-Yes	-Yes
<b>Team composition</b>	-Few guidelines for team composition	-Ad hoc project staffing and practice opportunities	-Resource utilization with a view to CD is generally neglected	-Lack of systematized people and work distribution -Little delegation leads to uneven work-load

### *Summary*

In terms of CD through daily operations, there are many similarities across the firms. In answer to the third research sub question, at all four PSFs, professionals typically develop competence through learning by doing in project work. This supports Itami's (1987) suggestion that CD through daily operations represent a vital way to asset accumulation. The analyses show that this is the by far most important route to CD. The kind of competence developed varies according to project role, phase, and size. Project leaders (typically experienced seniors) gain the overall view and the totality of the projects, whereas co-workers (typically the juniors/newly hired) work on specific parts of the project and develop competence in particular areas constituting the project as a whole. Typically, CD takes place through interaction in three different relations: intra-firm relations, client relations, and network relations. This illustrates that learning collectively stands out relative to learning individually. However, learning individually is very important in TEKNA and ENGY related to individual workers' extensive use of and learning from working on the computer, e.g. with CAD. Across the firms, it seems as if learning individually *and* collectively is highly important to people's competence development. This suggests that an *interplay* between learning from individual experiences on the one hand (e.g. Dewey, Kolb, 1984) *and* social interactions on the other (e.g. Lave & Wenger, 1991) supports CD in the four PSFs studied. The findings further show that an intra-firm approach, which is typically applied to PSF and RBV research, seems too crude when it comes to understand CD in PSFs. The study also confirms Maister's (1993) underdelegation problem as well as the view on PSFs as work environments of high time pressure, where time is a scarce resource.

The next section brings the two routes to CD together by comparing the aspects identified to facilitate and constrain CD across the four PSFs.

#### **8.1.4. CD facilitators and constraints**

What facilitates and constrains competence development? When it comes to CD facilitators and constraints, the companies are strikingly more similar than different. Across the four firms, 'daily operations' stand out as the by far most important arena for CD compared to 'investments in CD'. In *daily operations*, learning by doing in project work for clients represents the primary CD facilitator. Learning in projects takes place through different 'project roles', 'project phases', and 'project sizes', facilitated by 'interaction in intra-firm relations', 'interaction in client relations', and 'interaction in network relations'. On the other hand, 'high time pressure', and 'ad hoc team composition' which neglects a view to CD, are highlighted as major constraints. In this respect, the data indicates that there is insufficient coordination of team staffing with regard to learning and

individual needs for CD. In other words, there appears to be a lack of what can be called coordination for CD, or 'CD coordination', related to team staffing and practice opportunities in the four firms studied. Regarding *investments in CD*, 'internal courses', 'external courses', and 'individual initiatives' facilitate CD. On the other hand, 'lack of time' and 'efforts which do not fulfill intentions', are emphasized as constraints. This shows that the facilitators and constraints are not simply opposite "mirrors" of each other. The CD facilitators are primarily found in the day-to-day doing of work in real client projects, whereas the CD constraints primarily seem to relate to organizational and managerial issues beyond actual assignments.

These findings support Itami (1987) in that learning through daily operations and learning through investments represent two routes to CD in firms. However, this study of CD in PSFs further shows that CD in daily operations is clearly seen as by far more important than the investment route to CD. According to Itami (1987), there are clear distinctions between the two routes to CD. In the PSFs studied, learning by doing in projects is billable, whereas investments in CD are not directly billable to clients but serve as support for the projects. Yet, the findings also indicate that there are not always clear boundaries between learning in projects and training through support activities. In particular, this was the case in CREO. This suggests that the division between learning in projects and support activities can be more or less distinct, at least in PSFs.

In the four PSFs, the workers are supposed to, and claim to develop competence through project work. Yet, the informants, and particularly junior workers, ask for more planned CD beyond the projects through more formalized and systematic training. When working in a hectic environment where time is a scarce resource, there also appears to be an insufficient reflective attention given to learning by doing in projects. In addition, there is a lack of routines and systems supporting the beneficial learning by doing. As a result, more formal systems and structures are called for, as these are easier to take notice of. On the other hand, since time is primarily spent on prioritizing clients, there is little room for CD beyond assignments. In such a context of high time pressure, high client focus, and insufficient orchestration of the informal CD, people find themselves squeezed on time between serving the clients *and* keeping up in terms of developing competence in relevant areas of work. Hence, CD can be portrayed as a dilemma between (i) billable hours in project work on the one hand, and (ii) non-billable training and development through support activities on the other.

Moreover, the aspects facilitating and constraining CD through both routes differ with regard to different groupings of individuals. These within-case

differences are consistent across the firms. At CREO, there are distinctions between consultants on the one hand, and designers and newly hired consultants on the other. TEKNA and ENGY distinguish between juniors and seniors, whereas INFO distinguishes between 'project leaders' and advisors in contrast to client responsables. However, disagreements in responses in CREO are relatively less prominent than in TEKNA. This may stem from the fact that CREO only employs seniors. Further, CREO is a small firm with few employees, which probably makes it more transparent and easier to keep a uniform perspective on work and procedures compared to a large firm which has grown through several acquisitions of firms with specific work procedures and organization cultures. On the other hand, the distinctions between seniors and juniors are the same across different divisions in TEKNA. This implies that these discrepancies seem tied to a more general organization culture. This notion is supported by the image given of the firm as a highly recognized consultancy with many senior experts, perfectly aware of their own and the firm's position in the market. As a result, in terms of the major discrepancy between juniors and seniors regarding access to CD, the seniors may direct too little concern to the CD of junior employees in order to maintain a high level of competence throughout the firm.

The differences in opinions between seniors and juniors in ENGY are also relatively less distinct than in TEKNA. It seems as if the organizational culture in ENGY countervails and stabilizes differences stemming from mergers and acquisitions in a positive way. The uniform systems across all offices appear to contribute in this respect. Further, ENGY has a shorter history in Norway, and has traditionally been less well-known than TEKNA. TEKNA is also more concerned about attracting the very best candidates compared to ENGY. This may increase internal competition among employees, thereby making access to practice opportunities a crucial issue for the juniors. Also, the employees' average age is higher in TEKNA than in ENGY, which has a more balanced mix of seniors and juniors. In addition, access to external courses is less restricted in ENGY than in TEKNA. These are all aspects which may help explain contrasts between TEKNA and ENGY in terms of degree of variation in responses between groups of workers. At INFO, such a disagreement pattern is further strengthened. The distinctions between 'project leaders'/advisors versus client responsables seem to stem from large individual autonomy for the seniors combined with little collective responsibility.

Notwithstanding these variations, still, the similarities seem overriding. In this respect, tenure in the case-firm appears central. This is regardless of e.g. educational background, age, and gender. At CREO, a main distinction is particularly notable between workers employed for three years or less,

compared to individuals employed for a longer period of time. At TEKNA, there is a distinction between people who have worked in the firm for five years or less, and those with longer periods of employment, particularly people with managerial responsibility. The same distinction as in TEKNA appears in ENGY, whereas INFO shows the same pattern as CREO. This division resembles to some degree Maister's (1993) distinction between juniors and seniors, and the Guru Associates' requirement of four years for a junior to acquire the expertise and experience needed to reach a more senior level. The difference between CREO and INFO on the one hand, and TEKNA and ENGY on the other, may relate to differences regarding type of work, specialization within different engineering areas, complexity of multi-disciplinary engineering fields, and the size and diversity of projects. Since CREO only employs experienced seniors, this seems to speed up the learning process and make it easier to gain required competence faster. However, the time spent on acquiring competence in a particular area may be shorter because the pool to learn from is smaller. The similarity between CREO and INFO may relate to the types of services they deliver. Relative to INFO, CREO seems to be more process oriented, providing clients with fundamentally unique and customized deliverables to a larger extent than INFO. This may indicate why there is a distinction around three years of employment in both firms, i.e. for newly educated people at INFO as well as for experienced hires at CREO.

As a result, the four firms show remarkably similar patterns in terms of one emergent dimension, namely juniors on the one hand and seniors on the other. However, only TEKNA and ENGY use the terms senior and junior. Since CREO only recruits experienced seniors, the terms juniors and seniors do not fit very well for this firm. Instead the terms *newcomer* and *old-timer*, borrowed from Lave and Wenger (1991), seem more suitable, as these concepts allow for more flexibility. Newcomers need not only include juniors in terms of newly educated people, but also newly hired senior people as well as people who are newcomers to a particular field or way of working. This means that a person can be an old-timer in one situation and a newcomer in another. Table 27 summarizes the CD facilitators and constraints across the four firms with regard to newcomers on the one hand, and old-timers on the other. These findings suggest that resource base enhancements in the studied firms include competence development which typically relate to two types of workers, namely newcomers and old-timers. Hence, the findings support Tsoukas (1996) in terms of the importance of investigating a variety of actors in an organization, rather than restricting the study to managers as representatives of the firm as a whole. Further, in light of Lave and Wenger (1991) and Maister (1993), who primarily focus on the learning of newcomers/juniors, this study identifies CD facilitators and constraints with regard to both newcomers *and* old-timers.

Table 27. CD facilitators and constraints compared

	Newcomers	Old-timers
<b>CD through daily operations</b>	<b>Facilitators</b>	<b>Facilitators</b>
Project work for clients	-Learning by doing	-Learning by doing
Project role	-Co-worker	-Project leader
Project phase	-Parts	-Totality
Project size	-Large and small	-Mainly large
Interaction in intra-firm relations	-Collaboration with old-timers, feedback from old-timers	-Collaboration with peers, competence diversity
Interaction in client relations	-Participation in client meetings as active participant, observer, and listener	-Different and competent clients providing high degrees of freedom in service delivery solutions
Interaction in network relations	-Project solving	-Project gaining. Interaction with experts
	<b>Constraints</b>	<b>Constraints</b>
High time pressure	-Little time for guidance and feedback from old-timers	-High time pressure
Ad hoc team composition	-Lack of CD coordination	-Lack of CD coordination
	-Ad hoc practice opportunities	-Uneven work-load
Tight budgets	-Costs prevent client contact	-Routine tasks
<b>Investments in CD</b>	<b>Facilitators</b>	<b>Facilitators</b>
Internal efforts	-Participation	-Responsibility
External efforts	-Participation	-Participation/Responsibility
Individual initiatives	-Internally	-Externally and internally
	<b>Constraints</b>	<b>Constraints</b>
Existing efforts	-Under-utilization of existing efforts	-Under-utilization of existing efforts
	-Efforts which do not fulfill intentions	-Efforts which do not fulfill intentions
	-Lack of time due to project priority	-Lack of time due to project priority

*Summary*

When it comes to CD facilitators and constraints, these are very similar across the firms. The case-firm comparisons suggest that CD takes place at two different arenas (i) in project work for clients and (ii) in support activities for projects. This supports Itami (1987) in that both routes lead to CD. However, extensions of Itami's (1987) framework are also suggested. In answer to the fourth research sub question, thus, CD through daily operations is by far more important relative to CD through investments.



Regarding daily operations, learning by doing in projects facilitates CD, whereas lack of coordination for CD constrains learning. Regarding investments in CD, internal seminars and external courses facilitate CD, whereas high time pressure constrains CD. This shows that the CD facilitators and constraints are not merely opposite mirrors of each other. Within and across the firms, there is a strong pattern showing that CD facilitators and constraints differ between two groupings of workers, namely newcomers on the one hand and old-timers on the other. Because people view CD facilitators and constraints differently, this emphasizes the importance of investigating employees with different experience and tenure, because no single individual has the complete overview of the CD activities in a firm (Tsoukas, 1996).

The following section makes cross-case comparisons of the types of competences developed in each firm.

#### **8.1.5. Type of competence developed**

What type of competence is being developed? Based on the within firm analyses, different types of competence are identified within each company. People in CREO seem to develop 'firm specific competence', which particularly relates to 'creativity competence', 'project competence', 'process competence', and 'client competence'. At TEKNA, people develop 'functional competence' based on a combination of 'technical trade competence' and 'person specific competence'. In addition, 'relational competence', 'project competence', and 'organization competence' are highlighted. Competence developed in ENGY seems to consist of functional 'multi-disciplinary competence' and 'uni-disciplinary competence'. Other competences emphasized are 'system competence', 'project competence', 'client competence', and 'networking competence'. At INFO, 'client interaction competence', 'communication functional competence' of a technical trade nature, and firm specific 'project competence' are developed. Overall, the development of the following competences stand out as primary in each firm: 'creativity competence' in CREO, 'functional engineering competence' in TEKNA, 'multi-disciplinary and efficiency competence' in ENGY, and 'client interaction competence' in INFO. This shows that the dominant type of competence developed differs across the firms. This is further emphasized through the following relative importance: Process competence was particularly important in CREO. System competence was emphasized in the efficiency based ENGY, organization competence in the large firm of TEKNA, and trust in the client relation based INFO. In addition, in terms of resource ownership and control (Løwendahl, 1992; 1997), the competences developed in CREO are primarily collectively and individually controlled. In TEKNA, competences are also collectively and individually controlled, however, with a predominant emphasis on

individually controlled competence. At ENGY, competences are typically organizationally controlled, whereas at INFO they are primarily individually controlled. These distinctions seem to relate closely to each firm's type of generic strategy. A further discussion of these relationships are reverted to in section 8.2.

Notwithstanding these differences, similarities are also identified. Across the four firms, it seems as if 'functional competence', 'relational competence', 'project competence', and 'client competence' stand out as important. However, the content differs. With regard to 'functional competence', for example, such competence in CREO is highly heterogeneous, including professions as diverse as business, psychology, and theology. However, together, such heterogeneity constitutes a foundation for developing creative tools and processes in order to implement practical communication strategies. At TEKNA, functional competence refers to technical engineering competence, often of a sophisticated nature which requires special expertise. At ENGY, a distinction was made between functional engineering competence related to uni- and multi-disciplinary projects. In particular, the development of multi-disciplinary competence was emphasized. At INFO, functional competence refers to the communication functional aspects of service delivery.

Hence, people in TEKNA and ENGY see functional competence as 'technical-functional' engineering competence, whereas professionals in CREO and INFO view functional competence as 'communication-functional' competence. Among newly educated engineers, technical-functional engineering includes drawings, estimates and calculations. For old-timer engineers, it typically means engineering advice in terms of deep and specific competence within a restricted area, or advice concerning the interplay between different fields of engineering. Functional competence in communication is closely connected to the generation of ideas, e.g. in order to visualize communication strategies. For example, newcomers' functional competence relates to the understanding and analysis of communication information in CREO, and to the writing of press releases at INFO. In comparison, old-timers' functional competence moves deeper and broader into knowing how communication strategies work, which ones to choose, when, where, and how. Thus, functional competence can appear quite task specific, i.e. related to certain workers and work tasks. These findings correspond closely to what Løwendahl and Nordhaug (1994) term task related competence. However, whereas functional competence was the foundation for the services provided in TEKNA and ENGY, creativity and process were emphasized in CREO, and trust and good client relations in INFO. While what functional competence is in communication can be vague, this is very clear in engineering. This may relate to the maturity of the

two industries. Engineering design is an old and well established industry with highly recognized science based education programs as well as professional organizations. In contrast, communication consulting is a rather new industry with few established educational or professional standards. In addition, the differences relate to the type of services the firms provide. TEKNA and ENGY offer advice related to e.g. the construction of real estates, which builds on mathematical principles in order to plan their shape and size. CREO and INFO rely much more on personal persuasion based on trust and intervention through words.

‘Relational competence’ is developed through interactions with other people, be it in intra-firm, client, or network relations. Newcomers’ relational CD is primarily facilitated through intra-firm relations in project work. Old-timers, on the other hand, enjoy a wider spectrum of relations from which to facilitate relational competence, including client relations. In addition, some old-timers spend much of their time nurturing network relations, primarily for the purposes of generating client projects. For example, at ENGY, networking competence was highlighted. At INFO, keeping good relations with e.g. journalists was vital, as PR-advisory firms are often hired for their networks of connections to the media. Further, relational competence seems closely connected to functional competence. Functional competence is developed through informal learning by doing, where interaction with and feedback from old-timers play crucial roles to the functional competence of newcomers. To old-timers, functional competence is primarily developed in interaction with peers as well as with competent clients. And, experts are dependent on interaction with external collaborators in order to further enhance their functional competence. In project-based firms like PSFs, team work is their way of working, which inherently involves collaboration among the team members. This again is likely to spur learning between colleagues, particularly when the teams are composed of people with diverse educational backgrounds (like in CREO) or with various degrees of experience (like the mix of juniors and seniors in TEKNA, ENGY, and INFO). Further, given the value creation logic of PSFs to deliver appropriate services that satisfy and match client needs, it seems natural that close interaction with clients also leads to learning, relational as well as functional. Nonetheless, research on consultants learning from clients seems very scarce. On the other hand, learning from network collaboration has been well documented (e.g. Wenger & Snyder, 2000). Overall, the relational competence identified in this study corresponds to what Løwendahl and Nordhaug (1994) term competence related to interpersonal relationships (e.g. ability to communicate, collaborate, establish trust). Thus, this study strengthens the relational aspect of competence in firms.

The within-case analyses further identified 'project competence' as essential. Project competence is necessary in order to understand how projects function, because project work is the foundation for the income and existence of the PSFs. In general, a project is seen as a time-limited task with a goal, which involves many activities, and collaboration between several actors in order to realize the goal and make the client happy. In this process, understanding what is expected from the various team members, as well as to keep track of the costs and deadlines, is emphasized. Particularly people in TEKNA and ENGY highlight the importance of staying within the time and economic frames for the projects, whereas people in the communication firms highlight the project process and team composition. This seems natural due to the relatively larger projects these firms conduct compared to those of CREO and INFO. Organizing grows in importance the larger the project, whereas team composition seems to be of crucial importance in smaller projects due to the fewer people involved. Project competence also relates to methods and the accomplishing of an assignment. Project competence is claimed developed by working on different types of projects, in different phases, and by performing different roles. Newcomers develop project competence as co-workers, in the mid- or late phases of large projects. Old-timers primarily develop project competence through their work as project leaders of large, (multi-disciplinary) projects. In the PSF literature, research with specific regard to project characteristics seems neglected. There is also little cross fertilization with the project literature. Hence, it is suggested that 'project competence' can be seen as a type of competence in PSFs.

Since a vital part of project work is to satisfy the client, competence about the client becomes important. The PSF worker's understanding of the client, including client industries, was highlighted in the interviews. Therefore, what is referred to as 'client competence' does not refer to the client's competence, but to the professionals' competence of the client. In all four firms, this involves getting to know the client, and comprehending the client's demands and concerns in order to be able to deliver services that are useful to the client. Here, old-timers often develop client competence directly through face-to-face interactions. Newcomers, on the other hand, are less directly involved with clients, and often gain client competence indirectly based on second hand information communicated through old-timers who have met with the client. The study of Løwendahl and Nordhaug (1994) identified competence related to the organization's external environment. This includes knowledge of the industry, collaborators, suppliers, competitors, and media. However, their type of competence does not seem to fully correspond to the client competence identified in this study. The type of competence related to the firm's external environment seems to build on Nordhaug's (1993) discussion of industry competence, which refers to familiarity with the industry, ability to analyze operations and strategies of

competitors, knowledge about key persons, networks, and alliances in the industry, and capability to form cooperative ventures and alliances with other companies in the industry. Based on this information, the notion of client competence as something different than “competence related to the organization’s external environment” and “industry competence” is strengthened. This suggests ‘client competence’ as yet another type of competence identified as important in PSFs.

In addition, in order to assist clients in efficient and effective ways, competence of one’s own organization was mentioned. Examples of ‘organizational competence’, e.g. knowing the culture of the firm, organizing principles, informal processes, etc., came to be clearly expressed in TEKNA in terms of the sharp division between juniors and seniors. The reason for the emphasis on organizational competence in TEKNA seems to relate to the large size of the firm and the many employees. Compared to the other firms, TEKNA is by far the largest in terms of number of employees. Also, organizational competence relates closely to the system and efficiency competence in ENGY, the second largest firm in the study, in terms of e.g. quickly finding out “who knows what” when experience and expertise on previous projects are sought after. Also, aspects of organizational competence were indirectly frequently mentioned both in CREO (e.g. regarding the tough critique and quality demands) and INFO (e.g. knowing who is among “the chosen ones”, as well as who among the client responsables is a good mentor). In general, especially newcomers seem to benefit from an understanding of the informal processes in order to understand the culture and how relations work in their particular company, e.g. in terms of gaining relevant practice opportunities. This finding resembles and supports what Nordhaug (1993) and Løwendahl and Nordhaug (1994) refer to as competence related to intra-organizational circumstances.

As a result, similar as well as different types of competences are identified as important across the four PSFs. Table 28 summarizes the comparisons of the types of competences developed.

Table 28. Types of competences compared

	CREO	TEKNA	ENGY	INFO
<b>Primary type of competence developed</b>	Organizationally and individually controlled firm specific competence of 'creativity competence' related to highly customized and process based services	Individually and organizationally controlled 'functional competence' of a technical trade and person specific nature, related to expertise and technically demanding and exploration based services	Organizationally controlled 'multi-disciplinary and efficiency competence' of a technical trade and collective specific nature, related to unitary work systems for efficient execution of services	Individually controlled and client related 'client interaction competence', where unique relationships with clients and effect based services are highlighted
<b>Functional competence</b>	Internal communication functional competence	Technical engineering expertise	Technical multi-disciplinary engineering competence	External communication functional competence
<b>Project competence</b>	Project role, phase, and size. Process	Project role, phase, and size. Innovation and customization	Project role, phase, and size. Efficiency and economy	Project role, phase, and size. Client satisfaction
<b>Relational competence</b>	Interaction in intra-firm, client, and network relations	Interaction in intra-firm, client, and network relations	Interaction in intra-firm, client, and network relations	Interaction in intra-firm, client, and network relations
<b>Client competence</b>	Understanding client concerns and demands in order to provide services that result in intended changes	Understanding client concerns and demands in order to provide services of appropriate customization and innovation	Understanding client concerns and demands in order to efficiently provide appropriate services	Understanding client concerns and demands to provide services that achieve intended effects
<b>Organizational competence</b>	Knowing the culture of the firm, values, organizing principles, informal processes, etc. E.g. high pace, tough critique, high quality	Knowing the culture of the firm, values, organizing principles, informal processes, etc. E.g. high self esteem, how to access learning	Knowing the culture of the firm, values, organizing principles, informal processes, etc. E.g. three client values, ENGY-system, K3	Knowing the culture of the firm, values, organizing principles, informal processes, etc. E.g. client 'responsibles' individual

	demands	arenas		autonomy, who to learn from
<b>Collective competence</b>	Firm specific collective competence. Way of working with regard to diversity, models, process approach, and methods	Databases. Way of working with regard to ISO 9001, tender proposals, handbooks, and routines for carrying out projects	The ENG Y system. Functional coordinators. Way of working with regard to efficiency and total costs, supported by unitary procedures, quality control, ISO 9001, and collective culture within and across functional disciplines and geographic areas	Three core values for service delivery

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### *Summary*

This study identifies different types of competences in PSFs. In answer to the fifth research sub question, there are large differences across the firms with regard to the dominant types of competence developed. Typically, ‘creativity competence’ is developed in CREO, whereas ‘functional engineering competence’ is developed in TEKNA. ‘Multi-disciplinary and efficiency competence’ is developed in ENG Y and ‘client interaction competence’ is developed at INFO. However, some overall similarities also exist. In particular, ‘functional competence’, ‘relational competence’, ‘organizational competence’, ‘project competence’, and ‘client competence’ stand out as important across the four firms. Yet, the contents vary. The three first mentioned competences correspond closely to the task related competence, the competence related to interpersonal relationships, and the competence related to the intra-organizational circumstances identified by Løwendahl and Nordhaug (1994). However, in contrast, in this study of CD in PSFs, the two latter, project competence and competence about clients, are seen as distinct competences. These findings can be explained by the vital importance of understanding client problems and the emphasis on project work as contextual characteristics of PSF service delivery. Hence, the competence types of Nordhaug (1993) and Løwendahl and Nordhaug (1994) are, based on this study of PSFs, suggested extended to include ‘project competence’ and ‘client competence’. Finally, this study also illustrates the difficulty of dividing the competence aspects into separate elements. In practice, they are interwoven, however, with some aspects more

*and* less prominent depending on, as well as varying with, particular circumstances.

Based on the above comparisons of the elements of the CD processes identified, the next section summarizes the findings of these analyses.

#### **8.1.6. Summary of the comparison of CD processes**

The cross-case analyses show that processes of competence development in the PSFs studied contains similarities and differences. In terms of *similarities*, despite selecting industries, firms, and informants with a view to generating contrasts, the data shows remarkably similar patterns within and across all four PSFs. The case-firm comparisons identify CD policies of a ‘person-to-person approach’. Further, it is suggested that CD takes place at two main arenas (i) in ‘billable project work for clients’ and (ii) in ‘non-billable support activities for projects’. However, CD in daily operations is by far more important relative to CD through investments. Further, CD differs between ‘newcomers’ and ‘old-timers’ due to experience from tenure in current firm. Both types of workers develop competence through interaction in three sets of relations termed ‘intra-firm relations’, ‘client relations’, and ‘network relations’, based on various ‘project ‘roles’, ‘ project phases’, and ‘project sizes’. Yet, the impact differs: Newcomers primarily develop competence through interaction with and feedback from old-timers in intra-firm relations when working as co-workers in the mid- or late phases of both large and small projects. In contrast, old-timers typically develop competence through interaction with sophisticated clients, network collaborators, and peer colleagues while working as project leaders of large, multi-disciplinary projects, including the innovative pre-phases. To newcomers, unsystematic delegation of work tasks and team staffing constrain CD, whereas heavy workload and high time pressure is negative to old-timer CD. Hence, what facilitates and constrains CD does not simply represent opposite mirrors of each other. Typically, CD facilitators relate to the actual doing of project work, whereas CD constraints adhere to issues of organizational and managerial orchestration. The following types of competences were developed across the firms: ‘functional competence’, ‘relational competence’, ‘organizational competence’, ‘project competence’, and ‘client competence’.

Many of these similarities, such as learning by doing through project work and learning through interaction with clients, can be explained through PSF contextual conditions. In particular, these seem to relate to the project based way of organizing, the service delivery to clients with tasks/challenges to be taken care of, as well as the fee structure and billable hours which characterize PSFs.



Notwithstanding the many similarities, there are also major *differences*. Naturally, the differences are noticeable when moving beyond the overall similarities and deeper into the details. Yet, more strikingly, clear and consistent differences relate in particular to the primary types of competences developed and the firms' strategic choices. For example, creativity competence is vital in CREO, which is argued to rely on a creative problem solving based generic strategy. The development of functional expertise is crucial in TEKNA, which is also argued to pursue a creative problem solving based generic strategy. Competence related to multi-disciplinarity and efficiency is highlighted in ENGY, which is argued to resemble an output based generic strategy. Client interaction competence stands out in INFO, which is argued to follow a client relation based generic strategy. As a result, four different CD processes emerged based on the variations between what is dominantly emphasized in each firm: A creativity dominant CD process in CREO, a functional expert dominant CD process in TEKNA, a multi-disciplinary and efficiency dominant CD process in ENGY, and a client interaction dominant CD process in INFO. The characteristics of the different CD processes seem to relate to the companies' value creation logic and strategic choices. Hence, the differences between these processes can be better understood when analyzed in relation to the type of generic strategy that is associated with each firm. Therefore, the next section addresses the relationship between CD process and type of generic strategy.

## **8.2. CD processes for the generic types of PSFs**

Based on the within-case analyses, the following combinations of CD processes and generic strategies are identified: A creativity dominant CD process for the creative problem solving based CREO, a functional expert dominant CD process for the creative problem solving based TEKNA, a multi-disciplinary and efficiency dominant CD process for the output based ENGY, and a client interaction dominant CD process for the client relation based INFO. A comparison of these CD processes analyzed in light of the types of generic strategies resulted in the following suggestions which are addressed below: An expert or creativity dominant CD process for the creative problem solving based PSF, an efficiency dominant CD process for the output based PSF, and a client interaction dominant CD process for the client relation based PSF.

### **8.2.1. Expert or creativity dominant CD process for the creative problem solving based PSF**

The analysis of generic strategy in CREO shows that the firm deliberately seeks challenging projects with a substantial potential for innovation and creative service delivery processes as these also provide opportunities for

learning. In a similar vein, TEKNA seeks challenging projects, typically with their own unique requirements and with a substantial potential for innovation and functional learning. In contrast, ENGY typically seeks multidisciplinary projects where common procedures, efficiency, and best total cost are central values. In comparison, INFO offers services for and with clients in response to all client demands in order to make the client happy. These statements clearly address different priorities in terms of domain choice and service delivery. The firms' CD processes seem to reflect these strategic choices in relatively consistent ways. In line with its generic strategy, the analysis of competence development in CREO showed that the firm relies on a creativity dominant CD process. In this process, teams of highly diverse people work in close collaboration in order to develop creative services. The type of people employed support the firm's domain choice, i.e. experienced people who are able to cope with the uncertainty of process work, and who represent very different educational and professional backgrounds. TEKNA seeks to maintain its position in the industry in terms of being the best provider of sophisticated engineering expertise. In line with this aim, the firm pursues a functional dominant CD process in order to build engineering expertise. The recruitment policy also seems to be in accordance with this goal, as only 'civil engineers', experienced or newly graduates, with top academic results are hired. The firm also employs people with doctoral degrees in engineering. Both TEKNA and CREO rely on individual as well as collective competence, but TEKNA is more individually oriented than CREO. This difference may relate to the large proportion of individual work on the computer (CAD) at TEKNA compared to CREO, the different company cultures, and not least, TEKNA's broad domain choice with many small areas of functional experts.

Thus, while focus in CREO is on creativity related to internal communication processes and also development of "tools" that can be tailored for "reuse" in later projects, TEKNA emphasizes competence of functional engineering as imperative. However, since both firms rely on their ability to utilize the professional inputs for the development of creative and unique solutions to the particular problems presented (Løwendahl, 1997), they are argued to correspond to a creative problem solving based generic strategy. Due to the emphasis on expertise and creativity, the CD process in both firms can be referred to as an 'expert or creativity dominant CD process'. On the other hand, the differences between CREO and TEKNA in terms of type of industry, firm size, services offered etc. seem to indicate that the type C) position developed by Løwendahl (1992; 1997) (see e.g. figure 1) can be quite broad and include a variety of PSFs, which differ on a number of other dimensions beyond strategic focus and resource base. As a result, the findings of this study suggest that TEKNA and CREO represent two alternative approaches to CD in type C) firms. Overall, then, an expert

or creativity dominant CD process is suggested as an example of how competence development takes place in a creative problem solving based PSF.

### **8.2.2. Efficiency dominant CD process for the output based PSF**

In comparison, at ENGY, efficiency and multi-disciplinary engineering competence are particularly emphasized. Both engineering firms promote themselves as multi-disciplinary companies. However, whereas ENGY has systematized efforts to utilize resources between divisions as well as across geographical offices, a constraint in TEKNA was little coordination across parallel divisions. At TEKNA, the largest office represents the headquarter, also competence wise. Hence, it seems as if ENGY better utilizes the mix of resources across divisions. This is important given the high emphasis on learning from multi-disciplinarity. However, ENGY's domain choice is much more narrow than that of TEKNA. This means that ENGY is in a better position to standardize its services than TEKNA, which pursues a quite opposite value creation logic. Further, whereas multi-disciplinary engineering competence specifically relates to the engineering industry, the efficiency element can be non industry specific.

In order to facilitate efficiency, ENGY relies to the largest extent on IT compared to the other firms. This supports its emphasis on organizationally controlled competence. ENGY has an IT platform which is both more comprehensive and mature than the system of TEKNA. Compared to CREO and INFO, ENGY relies extensively on technology both in its service delivery process as well as in its efforts designed to directly improve the resource base. In this respect, system competence is important in order to support unitary systems and common work procedures. Thus, ENGY invests in coordination across divisions and offices. According to Starbuck (1992), large firms are more inclined to bureaucratize than small firms. However, the emphasis on IT seems to be well in line with ENGY's generic strategy as an output based firm. On the other hand, TEKNA is also a large sized firm in terms of number of employees. The difference between these two firms' emphasis on IT seems to relate to their generic strategies. While ENGY develops and maintains routines and procedures that allow replicated solutions, TEKNA seeks to a larger extent to work with relatively more innovative types of problems that require a higher degree of customization. This does not mean that ENGY does not rely on functional expertise. It is only emphasized that efficiency is predominantly in focus. The strategic choices of ENGY further imply that the firm becomes less dependent on individual experts than TEKNA. According to Løwendahl (1992; 1997:123), *“the problem-solving firm cannot avoid dependence on key individuals. It can develop organizational competence assets such that the firm's survival does not depend on a few key professionals, but it cannot develop*

*competitive advantage without central individuals unless it alters strategy*". In contrast, ENGY operates with clear organizationally based goals, where collectivity is important.

Another characteristic which seems consistent with the output based strategy is ENGY's degree of external to internal training. Whereas CREO and TEKNA primarily rely on internal training, ENGY uses a more balanced mix of internal and external training. At ENGY, the internal training primarily relates to efficiency, while the external training primarily relates to functional competence. Following Nordhaug (1993), external training implies low firm specificity. This indicates learning connected to a more general functional competence. The emphasis on external training may also be due to ENGY's consciousness regarding relations with external networks. It seems as if ENGY is more oriented towards the external environment than TEKNA, which appears highly focused on in-house competence and expertise. These ENGY characteristics are in line with an output based strategy. ENGY seeks competent people, yet, not the very best in terms of academic grades and expertise. In comparison, CREO seeks senior employees with rather specified qualifications within highly different areas and TEKNA is concerned about attracting the top candidates. ENGY focuses less on university results and more on how the person will fit into the organization. Again, collectivity is important due to ENGY's emphasis on collaboration as a means to achieve company goals. The workers of ENGY are replaceable to a higher degree than workers of TEKNA and CREO. This is because the degree of individual autonomy is of less importance in an output based firm compared to a creative problem solving based one, as the former relies on a higher degree of organizational control (Løwendahl, 1992; 1997). At ENGY, this aspect is further emphasized as it is the only firm with external ownership. As a result, an efficiency dominant CD process is suggested as an example of how competence development takes place in an output based PSF.

### **8.2.3. Client interaction dominant CD process for the client relation based PSF**

The value creation process of INFO corresponds closely to Løwendahl's (1992; 1997) characteristics of a client relation based firm, for example: INFO combines individual competences and relationships with responsiveness to all client demands. In comparison, CREO, TEKNA, and ENGY pursue more defined target projects and target markets. INFO is highly focused on clients and less focused on professional competences and the scope of services offered. Relative to ENGY, TEKNA, and CREO, INFO pays the least attention to CD and lacks plans and goals for such processes. Whereas recruitment at INFO is based on a gut feeling with regard to ability to build strong relations with clients, the other three firms focus on formal

qualifications in terms of type of education. This is in line with INFO's high emphasis on client relations. Senior professionals such as the client responsables and the CEO spend most of their time with clients. According to Løwendahl (1992; 1997), in client relation based firms, internal issues are only taken care of to the extent that they are absolutely necessary. In comparison, the development of the firm, its people, and its strategy are not highly emphasized in INFO, and working with internal organizational issues does not lead to an increased respect among the professionals. In contrast, CREO makes substantial investments in CD, and both TEKNA and ENGY operate with especially appointed people to take care of organizational development as well as individual CD.

At all four firms, people learn from client interaction. However, INFO is the most individually oriented firm, where the competence developed is also the most client related. The senior professionals enjoy high autonomy in client relations and each has his own portfolio of clients. In comparison, competence seems collectively controlled in ENGY, team based in CREO, and individually as well as collectively based in TEKNA. The characteristics of INFO seem to relate to the focus on client satisfaction. The services are evaluated by the clients, whereas academe/peers represent the primary reference groups in TEKNA and ENGY. In line with these findings, client interaction competence stands out as particularly important at INFO. A client relation based PSF can develop competence through clear priorities of client groups that allow the firm to build its competence cumulatively (Løwendahl, 1992; 1997). Further, knowledge about clients can be shared through internal training programs. At INFO, attempts of the latter were made at the Monday meetings, yet, with various degree of success. Still, the client interaction dominant CD process of INFO appears to be in accordance with a client relation based strategy (Løwendahl, 1992; 1997). Hence, a client interaction dominant CD process is suggested as an example of how competence development takes place in a client relation based PSF.

The next section summarizes the comparisons of the CD processes and the types of generic strategies.

#### **8.2.4. Summary of the comparison of CD processes and generic strategies**

As a result of the above analyses, this study has identified ways in which competence development takes place in professional service firms. In answer to the overall research question, thus, these are suggested to illustrate examples of CD processes that relate to the generic types of PSFs as follows: An expert or creativity dominant CD process for the creative problem solving based PSF; An efficiency dominant CD process for the output based PSF; A client interaction dominant CD process for the client relation based

PSF. Table 29 gives an overview of some characteristics of each mode. The identification of the CD processes and the coupling between CD process and generic strategy are suggested to extend the framework on generic strategies developed by Løwendahl (1992; 1997) by providing examples of CD processes to each type of generic strategy. However, it is also important to point out that due to e.g. the constraints identified, these CD processes are not optimal in terms of constituting “ideal” examples. Moreover, according to Løwendahl (1997), the three generic strategies seem to coexist regardless of PSF industry. Thus, the CD processes may also be industry independent. It is left for further research to probe into these issues.

Table 29. CD processes for the generic types of PSFs

<b>GENERIC STRATEGY</b>			
	<b>Creative problem solving based PSF</b>	<b>Output based PSF</b>	<b>Client relation based PSF</b>
<b>Domain choice</b>	Target projects/problems	Target markets	Target clients
<b>Service delivery</b>	Based on a high degree of customization and innovation	Based on superior collective capabilities or solutions with a core portfolio of services, methods, or solutions	Based on the firm's unique ability to understand and help particular client groups
<b>Resource base</b>	Team-based Individual + collective	Organizationally controlled resources	Individually controlled resources
<b>CD PROCESS</b>			
	<b>Expert or creativity dominant</b>	<b>Efficiency dominant</b>	<b>Client interaction dominant</b>
<b>CD policy</b>	People-to-people approach (with IT support in large firms)	People-to-people approach with extensive IT support	People-to-people approach
<b>Investments in CD</b>	Internal training beyond external training enhance firm specific expertise/creativity	External training and internal training to enhance efficiency	Internal and external training to enhance ability to build and strengthen relationships with clients
<b>CD through daily operations</b>	Learning from personal experiences and interaction with experts / Learning from diversity and interaction with creative people	Learning based on similar assignments	Learning through interaction with clients
<b>Competence</b>	Functional competence Creativity competence	System competence	Client interaction competence
<b>Examples</b>	TEKNA, CREO	ENGY	INFO

As mentioned, the CD processes identified do not represent ideal examples of CD processes, which clearly corresponds to one ideal type of generic strategy. The interpretation of the relationship between CD process and type of generic strategy, at least the degree to which they are at unity with each other, can to some extent be questioned. Since people primarily learn from

doing their work and since the firm has a certain overall direction in terms of strategic choices, the company strategy and the CD policy become similar. This may well be the case. On the other hand, it may not be difficult to envision firms without a relatively clear coherence between strategic direction and CD process. According to strategy literature, it is easy to understand the importance of making strategic choices and to position the firm accordingly, however, in practice, this is not very easy to accomplish. In fact, this seems to be among the most challenging of managerial tasks, and references are many to firms that have failed to pull their resources in the same overall direction (e.g. Matta & Ashkenas, 2003; Stewart, 2004; Bazerman & Chugh, 2006). As illustrated in this study, some employees do not seem to be very aware of CD issues. Hence, such processes can even relate to pure coincidence. Anyhow, this study firmly argues that there are differences between the firms which are consistent internally in each firm as well as in line with different generic strategies across the firms. The firms are not entirely different, they all resemble pieces of each of the three generic strategies, but there is a *predominant* direction in each firm which comes forward and which sorts consistently into the generic categories developed by Løwendahl (1992; 1997). These categories are, however, broad, and the span between type C category firms as illustrated by CREO and TEKNA points in the direction that more fine grained sortings may indeed be possible.

What is less debatable is that all of the firms studied have a large under-utilized potential in terms of orchestrating and bringing about CD processes. There are many constraints to CD, and even their interest in CD can be questioned (see chapters 4.4, 5.4, 6.4, and 7.4 in particular). A timely question to ask next, then, is: How good are these firms *really* at competence development? And why is there such a low priority of CD? A further probing into these issues from a more sceptical angle is addressed below.

### **8.3. How good are the firms *really* at competence development?**

Even though the firms pursue different types of strategies and CD processes, there is also a fundamental similarity across the firms. As stated previously, the firms do not represent ideal examples of CD processes. A lot of constraints to CD are identified along with activities (or more appropriately, lack of activities) that do not seem to contribute very substantially to the realization of overall strategic goals. For example, TEKNA is not very good at prioritizing the development of functional competence beyond project work, multi-disciplinary competence, project leader competence (for younger employees), or international experience (for younger employees). ENGY may enhance KM for efficiency rather than CD. Although these are



closely connected, given the firm's emphasis on efficiency, long term CD in PSFs means more than becoming better (faster) at doing things the firm already masters. This is useful in massproduction of standardized products, but less useful given the relatively high degree of customization involved in professional services (Løwendahl, 1997). INFO is almost entirely focused on short term profit. Generally, very little attention, resources, and effort are put into the development of competence, at both individual and collective levels. CREO seems to be the best of the firms studied in terms of prioritizing CD. However, even in this firm, carefully planned CD efforts must give way when in direct competition with client projects for time. The employees see this as a painful dilemma. The finding that people in CREO experience such situations as more arduous than people in the other firms, may have to do precisely with the higher focus on CD in this firm. Therefore, giving CD low priority is likely perceived as more problematic than in firms where CD is not that high up on the agenda. On the other hand, there are also mechanisms in CREO with a destructive impact on CD, such as the strong correction and the control culture on what one is "allowed to do", which ties up creativity, learning, and further competence development. In other words, billable hours and client demands tend to crowd out long term investments in CD for all of the four firms.

Hence, the firms have a large potential for improvements, and seem far from ideal examples of how to orchestrate and develop competence. As a result, it is argued that the firms are not particularly sophisticated at CD. In practice, CD issues get relatively little operational interest, and are partly treated as quite unimportant. In fact, "laissez faire" seems to dominate to a quite large extent. These findings clearly apply to TEKNA, ENGY, and particularly INFO. CREO seems relatively better than the other firms at CD, yet, there is also in this firm a large potential for improvements. Why, then, is there such a big discrepancy between intended and realized CD? Or, in other words, why is there so low priority of CD?

### **8.3.1. Why such a low priority of CD?**

There may be many explanations for this finding. Perhaps are managers not good enough to prioritize and gain accept for their goals, perhaps is there a lack of organizational structures to support these goals, perhaps are senior workers too autonomous to take managerial instructions into account, perhaps do managers and employees accept laissez faire as good enough, perhaps do partners/owners/employees want higher profit/salary now (rather than later *if* investments in CD pay off), or, perhaps is it sufficient to create an image of CD as ongoing and seriously accounted for in order to maintain a good reputation – at least in a short term perspective? The main reason emphasized by the informants is lack of time, due to high time pressure caused by high client priority and tight delivery deadlines. However, as

discussed previously, lack of time (to do other activities such as e.g. training) may also result from a desire, perhaps greed, to try to maximize profit to owners/partners. It is lucrative to have juniors do “routine” tasks and bill as much as possible for the firm, rather than spend time on courses or just be present at client meetings. In the communication consulting firms, being short on money does not seem to be the case. The engineering companies, in contrast, operate in a different competitive landscape with many competitors (at least on single disciplinary fields), small margins, and tough bidding competition.

In any event, for firms which make business from developing relatively customized services and which bill the client for the hours it takes to deliver these services, a decrease in billable hours will quickly be economically noticeable, particularly in small firms. In the end, it *is* often a matter of money. For example, large oil and energy companies like Statoil and Hydro have the means to develop new knowledge and technology. At Ormen Lange, it is easy to justify the use of 10 MNOK for development purposes in order to earn another 500 MNOK. In PSFs, it is easy to show the costs of CD, but harder to show the gains – as these are much more uncertain and future-oriented. In addition, PSF services are more ambiguous (Alvesson, 1993; 2001). This relates to the idiosyncrasy of resources, the opaqueness of work practices, and the lack of clear quality criteria of output (Carlsen et al., 2004). PSFs are also very vulnerable for market fluctuations. In good times, when projects line up and firms are short-staffed, there is little time for CD. In bad times, when hours to fill are plenty, memories from the previous period of recession are forgotten and there is an extra focus on costs. These issues may prevent people from making initiatives and setting CD efforts into action. What happens is typically cost cutting in terms of workforce reduction, as salaries constitute the largest expense in PSFs. Thus, to prioritize CD in such situations requires management, a high degree of attention to the matter, resources set aside for the particular purpose, and, not least, dedication.

In general, large firms often have departments in charge of personnel development. In terms of PSFs, particularly the large management consulting companies include such departments, whereas in other PSF industries such as law firms, engineering design firms, and communication consulting companies examples of such are few.<sup>52</sup> Previous research has

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<sup>52</sup> ENGY has after the merger with Rambøll recently established a new position - President of HR. The company has also established a new “Rambøll Academy”, where they among other things try to systematize individual development plans. A major challenge is to attract talented engineers, as the number of graduates each year is very low. Another main challenge is to retain competent people, as many people -

shown that firms with personnel departments, to a greater extent than firms without, conduct systematic competence work. These departments are typically more “sheltered” from the daily operations and can concentrate on long term development work (Nordhaug et al., 2006). There is reason to assume that personnel departments to a larger extent than others in the firm have competence on methods for systematic competence mapping and other competence related issues (Nordhaug & Gooderham, 1995). On the other hand, it cannot be disregarded that personnel departments initiate activities for competence mapping and development in order to strengthen their own professional legitimacy and position in the firm (Dobbin, Sutton, Meyer & Scott, 1993). Further, firms with highly educated people spend more resources on CD, as these people ask for and participate to a much larger degree in courses and further education than less educated people (Nordhaug et al., 2006). CREO and INFO do not have special personnel departments responsible for CD. TEKNA and ENGY have a few people appointed to take care of recruiting and general organizational and personnel development in the firm. However, this relates to a large degree to administration and formalities, such as e.g. the handling of employment contracts and the like. To a large extent, CD is the responsibility of each single professional. Whether the interest in CD in the studied firms would be greater with well functioning personnel departments assigned to CD efforts is difficult to ascertain. But, in line with previous research, it is not unlikely that at least improved consciousness and a better ability to implement competence aims would result.

The “lack of time” claims may also represent an ulterior motive. What if lack of time only represents an excuse for avoiding talking about something they (or some) do not want to talk about? Dialogues are generally looked upon as something positive, but they may also open up for “dangerous” or unpleasant discussions. Reflection on current practice may lead to the conclusion that “something has to be done”, which again may create defense mechanisms against change. For example, what if lack of competence is revealed. What, then, should the firm do? To develop competence is seen as costly. In addition, it is far from certain that such investments will actually provide an advantage vis-à-vis competitors. The clients are not interested in paying for the training of consultants (even though, in practice, this is frequently the case). Further, whereas some seniors include (younger) colleagues, others are neither able to nor willing to do so, saying they do not have time to provide “adult education”. Besides, there is internal competition regarding access to interesting projects. Thus, it may be in their own best

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in line with the current trend - change jobs after 2-3 years. Compared to other engineering design firms, and also several other types of PSF industries, the creation of the Rambøll Academy seems to be quite innovative.

interest to keep attractive competence to themselves. Particularly as this connects to salary and competitive advantage relative to colleagues, which again may relate closely to the amount of sales contracts each partner/senior is able to close with clients. In addition, too much reflection, especially on topics the firm does not directly make money on, takes focus away from the daily operations of project work. Hence, it can be for the better, at least in the short run, that some issues continue to be kept silent.

This leads to another question, whose interest is being realized? There may be many different agendas among people in a firm. When professionals in client relations based firms are asked to develop procedures, train juniors, or (even worse) repeat the same solution several times with different clients, they typically protest (Løwendahl, 1997). This is the case at INFO, in light of the high autonomy of each client responsible. Still, professionals may be tempted to do as asked, as the profit potential is often substantial (Løwendahl, 1997). At INFO, however, the profit potential seems to further increase individuality, as each client responsible enjoys the possibility to “run his own business within the company”. A tension in the solution based firm is the firm’s need for procedures and subordination versus the professionals’ need for freedom to choose and develop individually controlled expertise. For example, at ENGY one manager expressed difficulty in terms of persuading people to take courses in order to meet company demands. Rather, employees wanted to learn more within their particular field of interest and expertise. The problem solving based firms face all these pressures simultaneously. In such firms, with a mix of individually and collectively controlled resources, conflicts of interest may become very visible, as illustrated in TEKNA.

For example, the juniors want to work with certain seniors. These include seniors who are good advisors and who give them access to the “right” and most interesting projects. Being seen by the right seniors and working on the right projects can bring their career forward through possibilities for faster promotion, increased autonomy, and higher salary. Hence, being “in” or “out” of certain communities of practice can make a huge difference with regard to their current and future professional career. The seniors, however, may have other interests. Many seniors prefer to work independently as functional experts with high degree of autonomy. They want to work primarily on projects which satisfy their personal interests, and many do not want to be “interrupted” by “duties” such as coaching new and less experienced people. Rather, they may want to spend time on nurturing their personal networks and client relations in order to develop, or protect, an attractive position in the company. Because in PSFs, the professionals with the best client relations typically become the “rainmakers” in the firm. And with such a position comes certain privileges, such as high status, power,

prestige, and higher pay, elements that are typically highly valued in firms with strong internal competition on individual expertise (e.g. Rosen, 1985). Thus, with such interests at the forefront, CD issues become very individualized, i.e. you try to develop your own competence, but not that of others.

Finally, what does the market demand? Highly innovative and cutting edge expertise or standardized solutions? Even though a polarization seems to exist, there are also examples, at least in terms of engineering design, that indicate that the whole industry seems to move towards increased standardization of solutions. This notion is based on data from the informants as well as the many standards and minimum requirements (required by law) that set the frames for much of the work. It also seems as if the market to a very large degree asks for more or less standardized solutions. Many contractors want solutions that they know will work and which are already tested out by others. In general, efficiency efforts are many, whereas CD efforts are few. Even so, PSFs must communicate to the outside world that they *are* knowledge-intensive and that they *do* prioritize the development of competence and professional expertise. In this respect, the sales competence of the senior professionals becomes critical. Hence, PSFs must appear as competent firms and sell themselves as knowledge-intensive and expert based companies in order to gain projects in the first place (Alvesson, 2004). Also in this study of CD in PSFs, interest in CD seems to some extent to be limited to looking neat on paper in order to give the impression to both markets for employees and clients that competence issues are taken seriously. Whereas the firms' real interest in and effort to actually enhance CD can very well be questioned.

As a result, it can be difficult to precisely ascertain why there is low priority of CD. Many elements seem to be involved and there are probably several explanations and combinations of them, also beyond those discussed here. However, what is well founded and can be said based on this study is that a cost and profit focus drives most activities in the four PSFs. The firms' economic assessments in terms of billable hours and income generation form the basis for management and work practices, making the firms steered by economic incentives with very little attention to explicit CD based concerns. These findings can be seen as quite surprising compared to the notion at the outset of the study, as further discussed below.

### **8.3.2. Some surprising results**

In light of the tremendous interest in competence as the principal source of value creation and economic rent in society in general, and the assumption of PSFs as role models of good CD practices in particular, this study presents some surprising results compared to the commonly held notions set forth at

the beginning of this doctoral project. First, the firms do not appear to be particularly sophisticated in terms of CD orchestration. Rather to the contrary, there is in general quite low priority of CD and laissez faire dominates to a large degree. Short term income generation through billable hours, and to some extent profit concerns, steer the activities, whereas CD comes far down on the firms' priority lists. This is surprising given the weight put on knowledge among researchers and managers alike as the foundation for competitiveness in PSFs. Secondly, in contrast, this study shows that the firms are well off without spending much resources or paying particular attention to CD. How come? Maybe the competitors are not that good at CD either? Or, perhaps there are other elements which are more important to their competitive ability than competence and its development? Perhaps it is as important that PSFs give the impression of being very knowledge-intensive and up to date on the latest within their working areas, and that they are good at marketing, rhetoric, and knowing the right people in terms of client and network relations? As long as they get client assignments, are able to please clients, and make money on these virtues, then, why bother with CD? This seems to be the recurring attitude in the PSFs studied.

On the other hand, what the firms *are* good at is learning by doing through client projects. This finding can be ascribed to the project based organizing and activities, including team collaboration, relatively wide project variation, and customization of each individual assignment. Perhaps is this a very important element in explaining why the firms are doing quite well after all. Yet, there is very little (if at all) systematization of or reflection on learning through daily operations. But, maybe it suits itself? If that is the case, then how do we know? Maybe perspectives on symbolism and culture aspects of the way things are done in the firm can help shed light on this issue? In this respect, Alvesson and Kärreman (2007) show that organizational symbolism can account for the role of HRM systems and practices in a large multinational management consultancy company. Another study shows that the construction of elite identities in consulting firms promotes self-discipline, which sustains a want to accomplish high standards of performance, as well as a relatively secure sense of self that enables consultants to function effectively in high-ambiguity work contexts (Alvesson & Robertson, 2006). Further, identity regulation can, more or less intentionally and in/effectively, function as organizational control in order to produce the appropriate individual (Alvesson & Willmott, 2002). Alvesson and Kärreman (2004) have also addressed management control in a large management consulting company. With particular emphasis on a.o. human resources, they conclude by arguing for a more symbolic, meaning-focusing view on bureaucratic and output based measurement control. Hence, it seems possible to imagine that strong organizational culture, identity, and

symbolism on how to do things in a firm may counterbalance little explicit attention and systematization also with regard to CD. In particular, this may apply to the subtle processes of learning by doing in client projects. It is, however, left for future studies to look further into these questions.

Next, the main findings of the comparative analyses are summarized.

#### **8.4. Summary of findings**

This chapter has presented the comparative analyses of the four case-firms, in which similarities and differences are pointed out.

The findings show that the firms' CD policies adhere to a person-to-person approach, with various support from an IT based people-to-documents approach. People in all four firms learn from a mix of internal and external training. However, the internal training is often conducted in collaboration with people external to the firms. Across the firms, CD typically takes place through learning by doing in project work for clients, which represents the by far most important path to CD. Even though learning through daily operations happens ad hoc and is associated with little systematization in terms of competence sharing and reflection on the learning taking place, it still seems as if these processes function quite well in terms of actually contributing to relevant CD. People learn from individual experiences *and* social interactions. CD differs between 'newcomers' and 'old-timers' due to experience in the current firm. Both types of professionals develop competence through interaction in three sets of relations termed 'intra-firm relations', 'client relations', and 'network relations', based on various 'project roles', 'project phases', and 'project sizes'. Hence, clients and networks are identified as important to the professionals' CD processes. Within and across the firms, CD facilitators and constraints differ between newcomers on the one hand and old-timers on the other. Newcomer CD is facilitated through interaction with and feedback from old-timers in intra-firm relations when working as co-workers in the mid- or late phases of both large and small projects. Old-timer CD is facilitated through interaction with sophisticated clients, network collaborators, and peer colleagues while working as project leaders of large, multi-disciplinary projects, including the innovative pre-phases. To newcomers, unsystematic delegation of work tasks and team staffing constrain CD, whereas heavy workload and high time pressure is negative to old-timer CD.

Typically, CD facilitators relate to the actual doing of project work, whereas CD constraints relate to issues of organizational and managerial orchestration. There are major differences across the firms with regard to the

dominant types of competences developed. 'Creativity competence' is the primary competence developed in CREO, 'functional engineering competence' in TEKNA, 'multi-disciplinary and efficiency competence' in ENGY, and 'client interaction competence' at INFO. Across the firms, 'functional competence', 'relational competence', 'organizational competence', 'project competence', and 'client competence' stand out as important.

Whereas many of the similarities typically relate to the PSF contextual conditions, the differences relate to the firms' strategic choices and resource bases. Based on analyzes of the relationship between CD processes and type of PSF generic strategy, descriptions of CD processes which relate to the generic strategies are suggested as follows: An expert or creativity dominant CD process for the creative problem solving based PSF; An efficiency dominant CD process for the output based PSF; A client interaction dominant CD process for the client relation based PSF.

Even though the firms are different in terms of dominant CD processes, they share the commonality of not being very sophisticated at orchestrating and managing CD. There is generally a low priority of CD, and laissez faire dominates to a quite large extent. These findings are quite surprising compared to the widespread opinion at the outset of the study, namely that CD is crucial to the competitive ability of PSFs and that PSFs represent role models with regard to competence orchestration and development. Based on the results from four PSFs, however cautious regarding generalization beyond these firms, questions can be raised as to what elements *are* particularly important to PSF operation and value creation.

Based on these main findings, the next and final chapter of this dissertation presents the concluding discussion and the implications of the study.



## 9. Concluding discussion and implications

This chapter consists of a concluding discussion of the findings of this study, with an emphasis on contributions and implications. First, findings and implications for theory are addressed. Second, findings and implications for research design are attended to. Third, findings and implications for practice are suggested. Fourth, the main contributions of this research are summarized, before limitations of the study are pointed out. Finally, the dissertation is brought to an end by providing suggestions for further research.

### 9.1. Discussion of findings and implications for theory

In this section, the empirical findings are further compared to literature. The discussion is steered by the findings and structured with reference to the theoretical background, i.e. it addresses literature on PSFs, strategic resources, and competence and learning.

#### 9.1.1. Professional service firms

Based on the empirical analyses, the following findings are emphasized as central to PSF literature: ‘the low priority of CD’, ‘CD processes for the generic types of PSFs’, ‘CD policy based on a person-to-person approach’, ‘CD through learning by doing in client projects as more important than training investments’, ‘CD facilitators are not the flip side of CD constraints’, ‘newcomers and old-timers’, ‘the role of the client in CD processes’, ‘the role of external networks in CD processes’, ‘learning through different project roles, project phases, and project sizes’, and ‘learning from multi- and uni-disciplinary projects’. Each of these is discussed below.

##### *The low priority of CD*

This study provides some surprising results. Whereas PSF literature (e.g. Sveiby & Risling, 1986; Maister, 1993; Løwendahl, 1997/2005; Morris & Empson, 1998; Empson, 2001a; Løwendahl et al., 2001; Newell et al., 2002; Robertson et al., 2003; Carlsen et al., 2004; Chang & Birkett, 2004; Faulconbridge, 2006) show a huge interest in competence, as vital to PSF value creation and competitive ability, people in the four PSFs studied show remarkably little interest in the development of competence. Both formal and informal CD comes far down on the firms’ agendas and laissez faire seems to dominate. This finding is also quite surprising in light of an investigation by Nordhaug et al. (2006), which shows that the focus on competence and competence development in firms has grown more prominent during the last

decade. In 2003, nine of ten firms said that competence needs would strongly increase the next four to five years. In 1995, the number was six to ten.

Instead of making substantial active effort to enhance CD, the firms mainly rely on CD to take place as a by-product of daily operations. Rather than trying to facilitate these processes, they hope, it seems, that somehow “it suits itself”. As a result, learning by doing happens ad hoc, by chance, by luck, and to the degree that (some) professionals actively seek and make access to important learning sources/arenas. Nevertheless, people claim to learn a lot simply from working in client projects. This supports previous studies within project based literature (e.g. Keegan & Turner, 2001) that project work promotes learning. The data also shows that several people from the same firm often work together over time (as project leaders can pick and choose the co-workers on the team). Hence, what can be termed “informal regular teams”, emerge. These constellations resemble to some extent a community of practice. CoP are recently valued not only based on a genuine interest in a subject for its own sake (e.g. Brown & Duguid, 1991; Lave & Wenger, 1991; Wenger, 1998), but for the purposes of strengthening firms’ innovative capacity, human capital, and competitive ability (e.g. Wenger & Snyder, 2000; Lesser & Everest, 2001; Swan et al., 2002; Jones, 2006; Hildrum & Fosstenlökken, 2007), as valuable knowledge is developed in such relationships. Hence, this study supports the notion of CoP as beneficial for CD in PSFs. Such constellations seem particularly important to the junior employees in the PSFs studied, because their learning and access to learning arenas depend to a high degree on who of the seniors they (get to) work with. However, competence developed in one community of practice in a firm may not be easily shared throughout the organization. Further, CoP can over time become increasingly introvert (Jones, 2006). To reduce the latter effects, learning through client relations and network relations is important. In particular, it seems as if the variety of clients, and the particular needs and requirements of each project, facilitate learning. As a result, the project based organizing of the PSF work, combined with a variety of clients with particular demands, seem to some extent to counterbalance the little interest in and the limited focus on CD.

Whereas *laissez faire* applies to CD orchestration, billable hours and short term income generation steer the firms’ day to day activities. And as long as income demands are met, why bother with CD? In this respect, it is interesting to understand the basis from which the firms make their income, as the PSFs have different strategies for this: CREO relies on its unique processes and composition of competences, TEKNA relies on expertise and to a large extent its good (old) reputation, ENGY relies on engineering efficiency, whereas INFO relies on developing unique client relationships

through communication. These directions depend on competence, often in terms of functional competence. But the processes through which the firms gain an assignment in the first place, do not depend on functional competence alone. What kind of competence, then, is particularly important? In this respect, what can in overall terms be referred to as sales- and marketing competence can be important. This may include as well as relate to communication skills, reputation based on previous work, client relations, networks, functional competence, etc. In this study of CD in PSFs, managers and other senior professionals spend substantial time on marketing (e.g. nurturing existing and potential client relations, being board members, being leaders of professional work associations, nurturing relations with university professors, teaching at universities, arranging company presentations for graduate students, etc.). In studies of large management consulting companies, sales ability is seen as the most important in order to become partner (e.g. Alvesson & Kärreman, 2004). According to these authors, thus, marketing and sales ability may be one of the most important competences in PSFs.

Hence, PSFs may not be all that good when it comes to competence development - as shown in this study. Rather, such types of firms may be hired because of their flexibility, supply of extra resources, and because they are good at marketing and rhetoric (Alvesson, 1993; 1994; 2001; 2004; Alvesson & Kärreman, 2004; Alvesson & Kärreman, 2007).<sup>53</sup> The results of this study, however, do not provide evidence to say that competence is not important. Only the very *centrality* of competence development in PSFs, and the extent to which this takes place, can be questioned. At least, the existence of knowledge intensiveness and competence development cannot be taken for granted in such firms, as seems to be the case in most PSF literature. Although careful about generalizing from the results of four PSFs, questions can still be raised, such as: How much CD goes on in PSFs - really? How important is CD to their value creation and competitive ability? In addition, PSFs as role models in terms of CD can be questioned. The PSFs studied seem to be far behind many large companies from other industries such as oil and gas. However, several of the big global management consulting companies, and perhaps also some of the large auditing firms, appear more advanced in terms of CD than the firms included

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<sup>53</sup> In terms of the two latter, Alvesson has found these skills to apply in particular to large management consultancies and to advertising agencies. On the other hand, engineering design firms, and engineers in general, are not well-known for their sales abilities. Rather to the contrary, the general opinion both among themselves (as firmly stated by several of the informants in this study) and others seems to be that they are quite bad at sales.

in this study. Whether these consultancies match best practice from other industries, remains to be seen. Since the studied firms are not particularly sophisticated regarding CD, another interesting question is: if the firms were better at CD would they also perform better? Perhaps does type of ownership influence investments in CD? For example, do internally owned firms get more “greedy” and thereby invest less in CD than externally owned firms? Or, is it perhaps the other way around? Overall, thus, maybe a reconsideration of the centrality of CD in PSFs is required? Only future research can provide better insight into these questions.

#### *CD processes for the generic types of PSFs*

Further, this study has identified different CD processes for PSFs with different types of generic strategies. This finding is enabled by building on previous research by Løwendahl (1992; 1997). She proposes that PSFs can be classified according to one of three different types of generic strategies, a client relation based generic strategy, a creative problem solving based generic strategy, and an output based generic strategy. This present study supports these three generic modes as fruitful categorizations of PSFs. In addition, the study has identified different CD processes for each type of PSF: an expert or creativity dominant CD process for the creative problem solving based PSF, an efficiency dominant CD process for the output based PSF, and a client interaction dominant CD process for the client relation based PSF. In this respect, it is important to point out that the focus on generic strategy emerged through the empirical analysis of the data. An emphasis on generic strategy was not included in the research design at the outset of the study, nor were the firms deliberately chosen to represent all three generic strategies.

Given the importance of CD to the long term competitive ability of a PSF, this requires CD processes that are coherent with the overall strategy. Based on the consistent, although far from ideal, relationship between CD process and type of generic strategy identified in this study, it is proposed that this research adds to the framework on generic strategies developed by Løwendahl (1992; 1997) by providing some initial descriptions of CD processes for firms argued to represent different generic types of PSFs, as set forth in table 30. The different CD processes within the two C type of firms, the creative problem solving based PSFs, indicate that there can be a variety of alternatives within the main categories of PSFs. Therefore, caution needs to be shown with regard to generalization based on a study of four firms. It is, of course, impossible to state whether the CD processes are generic. In particular, based on the identification of the two different CD processes within the C type of PSF, other types of CD processes might exist with regard to C firms as well as A and B type of firms. Maybe there are even other types of PSFs and CD processes beyond the categories addressed in

this study? Hence, further research is required in order to investigate whether the characteristics of the CD processes of this study are relevant also in other PSFs.

Table 30. Generic strategy and CD process

Generic strategy and CD process		
Client relation based PSF	Creative problem solving based PSF	Output based PSF
Client interaction dominant CD process	Expert or creativity dominant CD process	Efficiency dominant CD process

*CD policy based on a person-to-person approach*

The findings of this study show that the firms' CD policies are based on a person-to-person approach. However, within this approach, the use of IT and databases varies considerably. According to Hansen et al. (1999), PSFs which rely on "reuse economics" are particularly concerned about developing computer support systems, databases, and routines, whereas firms relying on "expert economics" invest heavily in individual professionals as well as team building and communication. Starbuck (1992) emphasizes that large firms rely more on the sharing of codified competence stored in databases than small firms which are expected to rely much more on a person-to-person competence development. However, this seems to apply only partly to the PSFs in this study, as all firms rely on a person-to-person approach regardless of firm size, though, with varying degrees of IT support. Particularly the two smallest firms rely very little on IT. Hence, the findings of this study call for a further refinement of the dichotomization of Hansen et al. (1999), as the PSFs relate to different kinds of "mixed modes" within the person-to-person category. This suggests that the person-to-person dimension set forth by Hansen et al. (1999) can be further cultivated to address more fine grained forms of variations depending on the degree of IT investments made to support learning in a person-to-person CD policy.

*CD through learning by doing in client projects as more important than training*

Compared to training, learning by doing in project work for clients represents the by far most important path to CD in PSFs. The identification of this relative weight was enabled by the broad approach to CD chosen for this study. As a result, the study not only captures both formal investments in CD and CD as a by-product of daily operations, it also shows the strong relative importance of learning by doing in projects above investments e.g.

in more formal training. The most important source of CD is active involvement in day-to-day project work for clients. Parts of the literature review, however, raises the expectation that CD based on planned formal training plays a crucial role because major emphasis is devoted to training programs (e.g. Starbuck, 1992; Maister, 1993; Nordhaug, 1993). Whereas previous studies have primarily emphasized and captured the planned and easy to measure investments recorded in HR budgets, this study calls attention to the not so easy to control and measure, but rather small “drops” that “just happen,” developed and nourished by and from activities, opportunities, and interactions emerging as people go about doing their work. In PSFs, where focus is on the project to be delivered, it is easy not to take any further notice of processes of learning by doing. The findings of this study indicate a possible under-reporting of formal CD efforts with certain budgets and time set aside for the purpose. In comparison, it seemed even easier to forget and “lose sight” of informal CD activities, particularly when they occur as “small” and embedded in daily operations. As a result, little notice and awareness were typically devoted to informal CD in everyday activities. However, over time, informal CD appeared quite substantial when employees took the time to scrutinize, sense, and reflect on these processes. Closely related to these findings, Marsick and Watkins (1990) emphasize that learning through informal and incidental activities, which are difficult to capture and control, reveal a neglected, but crucial, part of professional practice. For reasons discussed above, it seems easier to invest in courses which are countable, with certain costs and contents attached to them, and which easily show up on budgets.

A crucial element in this discussion is not only the emphasis on learning by doing *or* training, but rather the *match* between these that provides a joint enhancement of CD. It seems that the beneficial balance and combination between individuals’ formal and informal CD activities, supported by customized IT systems, internal development activities, and/or external courses, can provide synergies and long-term value for the firm. This study moves beyond an isolation of either informal or formal CD, to include the relationship and search for an appropriate balance between time and efforts spent on billable *and* non-billable hours. This suggests that this study contributes by showing the importance of applying a broad perspective on CD at work, because it opens up for investigating formal training, as well as the often neglected informal learning by doing as part of daily operations. This is probably the case for all knowledge based value creation, but in PSFs, the latter turns out to be vital.

*CD facilitators are not the flip side of CD constraints*

The study shows that the CD facilitators and constraints are not opposite mirrors of each other. Typically, CD is primarily facilitated through the

informal learning by doing going on in the day-to-day project work for clients, supported by interaction in intra-firm relations, client relations, and network relations. In terms of constraints to CD, these relate to high time pressure, uneven work load, and a lack of routines supporting learning through team composition and relevant practice opportunities. In other words, in this study, CD facilitators relate to the actual doing of project work, whereas CD constraints relate to issues of organizational and managerial orchestration. This implies that the focus of Nordhaug (1993), solely on barriers to learning in firms, may leave out important aspects of a more complete understanding of CD in PSFs. Rather, an approach that opens up for the possibility that CD facilitators and constraints may relate to highly different conditions is suggested based on this study. This notion is further emphasized through the emergent dimension of newcomers and old-timers, as discussed below.

#### *Newcomers and old-timers*

This study identifies different types of actors and differences between these with regard to CD. Newcomer CD is facilitated through interaction with and feedback from old-timers in intra-firm relations when working as co-workers in the mid- or late phases of both large and small projects. Old-timer CD is facilitated through interaction with sophisticated clients, network collaborators, and peer colleagues while working as project leaders of large, multi-disciplinary projects, including the innovative pre-phases. To newcomers, unsystematic delegation of work tasks and team staffing constrain CD, whereas heavy workload and high time pressure is negative to old-timer CD. The analysis showed that the distinction between newcomers and old-timers is based on tenure in the current firm. These differences emphasize the importance of investigating employees with different work experience and tenure, because no single individual has the complete overview of the CD activities in a firm (Tsoukas, 1996). Hence, this study contributes by illustrating that treating the PSF resource base as one single unit may lead to important distinctions being overlooked. These findings also emphasize the importance of *individuals* as a useful and necessary level of analysis in PSF and RBV research. If competence-based value creation in PSFs is to be better understood, it seems obscuring to view the resource base of the firm as one given homogeneous unit. Therefore, it is suggested that the differences and contributions of various groups of actors of the resource base need to be identified and understood in order to effectively manage and improve CD and value creation in a long-term perspective. Further, these findings support Maister (1993), Nordhaug (1993), and Lave and Wenger (1991) regarding the importance of seniors to junior learning. However, whereas these authors focus on the importance of seniors to junior learning, de-emphasizing or neglecting the importance for seniors of maintaining and further developing their competence, this study emphasizes facilitators and

constraints to newcomer *and* old-timer CD. Through the finding that the important settings, relations, and roles in which old-timers develop competence differ from those of newcomers, this study is suggested to extend the above-mentioned literature by providing an investigation with regard to both senior *and* junior CD in PSFs – as well as the relationship between the two.

#### *The role of the client in CD processes*

This study identifies clients as highly important to professionals' CD processes. The role of the client to PSFs' existence is obvious. The role of the client in *CD processes*, however, represents a fresh angle because, overall, the client has been emphasized related to management at a firm level (Maister, 1993; Løwendahl, 1997), whereas the importance of clients to CD has received only very scant attention in existing PSF literature. For example, Mills and Morris (1986) conceptually discuss clients as “partial” members of service organizations in terms of client participation. Bowen (1986) discusses the managing of customers as human resources in service organizations. Bettencourt, Ostrom, Brown, and Roundtree (2002) highlight client co-production management processes in order to promote effective client partnerships. Løwendahl and Revang (2000) emphasize the need to match customers with adequate service provider competences through dynamic, flexible, and fluid organizational forms. However, whereas the two latter authors focus on organizational forms, the former focus on the role of the clients as co-creators in terms of reducing “*costs associated with defining and enacting role behaviors that are required for production of the service*” (Mills & Morris, 1986:726). To the extent that research exists on the relationship between the service provider and the client, the issue is predominantly investigated in a one-way direction, from the service provider in terms of value added to the client (e.g. Dawson, 2000). This current study shows that this interaction also “feeds” competence back to the service provider, particularly when working with highly competent clients. Therefore, it is suggested that this present study extends PSF research by showing *empirically* that clients are also crucial co-contributors in terms of enhancing *competence* among professionals. Hence, CD does not only take place in intra-firm relations, but is also a result of operational activities where clients play crucial roles.<sup>54</sup> This finding seems especially important, because over time, learning processes among individuals in an organization lead to increased homogeneity with respect to learning (March, 1991). In

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<sup>54</sup> The role of the client in knowledge development is published in an article by Fosstenløkken, Løwendahl, and Revang (2003), titled “Knowledge Development through Client Interaction: A Comparative Study”, where the empirical material is based on parts of this doctoral project.



comparison, heterogeneity is particularly important to learning and innovation (see e.g. Argote, 1999).

To further underline this point, interaction in network relations represent another “external” source contributing to CD in PSFs.

#### *The role of external networks in CD processes*

This study shows that external networks are particularly prominent in three different activities, in service delivery, in support development activities, and in generating new assignments. For the same reason as in client relations, professional experts, especially in highly specialized areas, need matching that involves challenges from people beyond that of intra-firm colleagues. Network relations are of less importance in project work relative to intra-firm and client relations. Scant attention, however, has also been given to the role of network contacts related to the development of competence. Compared to the role of the client, even less literature exists on the topic of the role of extra-firm contacts in CD efforts in PSFs. Research on group processes and social networks (e.g. Håkansson, Havila & Pedersen, 1999) argues that the nature of the relationships between individuals influences the degree of learning they gain in a group or network. This is supported in this study through e.g. the influence of the strength of client relationship on the degree of freedom in service delivery. In terms of external network contacts, this implies that several aspects of business relationships cannot be formalized or based on legal criteria (Gadde, Huemer & Håkansson, 2003). Instead, mutual trust and commitment are important aspects of interaction and CD in external network relations.

In an industrial network approach, the basic point of departure is that firms operate in a context of connected business relationships forming networks (Håkansson & Snehota, 1989). Since networks are mainly analyzed at a firm level, this strand of literature is less concerned with specifying the individual actors involved, at what levels they operate, and so on. This study, however, shows that it is primarily *individuals* who gain and maintain network relations with other individuals, and less the PSF that collaborates with other firms (even though this was also the case in the firms studied). Another aspect is that network relations in PSFs may be somewhat different compared to the industrial networks of manufacturing firms, as these firms may keep a larger portion of the network contacts at a firm level, even based on legally binding contracts. In contrast, this current study showed that informal relationships seem more influential in terms of CD than formal ones. In line with this finding, although at a firm level, Cross, Nohria, and Parker (2002) emphasize informal networks as increasingly at the forefront, often with a significant impact on strategy execution, organizational effectiveness, and new product development in manufacturing firms.

In addition, the ways in which informants describe how networks are established, used, and developed, share similarities with communities of practice (CoP) (e.g. Brown & Duguid, 1991; Wenger & Snyder, 2000; Swan et al., 2002; Jones, 2006). CoP are informal social groupings, that are self-selecting and responsible only to themselves. They exist as long as there is a common interest, and are often difficult to identify for management as they can emerge spontaneously and run counter to the established norms of the organization. This further emphasizes people's individual engagement and personal relationships as crucial in this respect. In terms of PSFs, the influence from external network contacts and their potential contributions in service delivery processes suggests a refinement of Løwendahl's (1997) discussion of value creation in PSFs by including potential learning contributions from external network contacts to service delivery processes. This study further suggests that the traditional intra-firm approach is too limited. As discussed previously, the distinction made between what is "internal" or "external" to the organization seems less fruitful when it comes to CD in PSFs, because many professionals interact as much "outside" of the firm as "within". The demonstration of the importance of the client as well as network contacts in PSF competence development, also suggests a refinement of the VCPs of PSFs-framework (Løwendahl, Revang, & Fosstenløykken, 2001) by including client relations, as well as network relations as important sources for PSF resource base improvements.

Next, the findings that CD takes place through various project roles, project phases, and project sizes are discussed.

*Learning through different project roles, project phases, and project sizes*

In the study, 'project role', 'project phase', and 'project size' emerged as essential to CD. PSF research on these matters hardly exists. Therefore, general project literature is brought in. However, also here, little is found with regard to CD in relation to project role, phase, and size. Hence, the few references referred to below typically represent rather different settings compared to this study.

With regard to project *roles*, the management of roles in one large security system project is emphasized in the periodical "Security" (2003). Four major players (the end user team, the consulting engineers, the dealer/integrator, and the manufacturer), and their tasks and responsibilities throughout the project are described. Here, the different actors present in a particular team are identified, but nothing is said about the roles these play in each team and what this means in terms of CD.

Applied to the findings on project *phases*, it is well-known in literature on motivation (e.g. Rand, 1991) that people increase their motivation as well as

the quality of products made if they gain an understanding and involvement of their work as part of a larger totality. Raelin (1997) suggests that project-based learning in the workplace depends on how project participants make sense of their project experience and its meaningfulness. He refers to this as reflective practice. In terms of CD, this means that actors involved in different settings of project work are better able to understand how parts of work fit in and make up the totality. This suggests that it is beneficial for actors to be involved in the various phases that characterize project work. One study investigating skill sets for team selection in multi-phase projects (de Korvin, Shipley & Kleyle, 2002), concludes by the use of an algorithm that projects are managed by a leader through four stages: definition, planning, execution, and delivery. The algorithm further mirrors the typical multi-phase project management structure of definition and planning. The model takes into account the match between the necessary job skills possessed by each individual that will be required to implement the various activities for each project phase, and the costs involved for the salaries of the personnel possessing these skills. Based on mathematics and statistics, the study of de Korvin et al. (2002) measures the end skills needed, and not how these skills are developed ex ante, nor how different phases facilitate different types of CD.

In contrast, PSF projects are not always possible to plan in such a manner. Another study of project phases illustrates leadership activities carried out over the course of a project (Weinkauff & Hoegl, 2002). The study concludes by stating that individual teams change in how strongly they perform various leadership activities over time. The study further concludes that the project leaders prefer training in preparation for projects in favor of ad hoc learning on the job. Applied to CD in PSFs, this may indicate that the relative impact of the project leader may differ relative to different phases of project work. And, ideally, as part of improving preparation and readiness for taking on a role as project leader, training before “real action” seems potentially beneficial. But in PSF practices, with high pressure on billable hours, compromises between several weighty reasons such as e.g. the “ideal” versus operational activities must be made. However, both studies emphasize that CD among project leaders in team-based project organizations is needed.

It seems as if the impact of project *size* on CD has not been emphasized neither in research on projects, nor in literature on learning or resource development. One study from a very different setting claims that the type and size of projects influence the number of bidders (Al-Arjani, 2002). The average number of bidders is found to increase as the project size increases. As a result of few bidders for certain types of projects, projects may be assigned to less qualified contractors because of the low competition. The

study provides information about how project size may influence the quality and competence of bidders, but not how project size also influences CD during the actual carrying out of the project, as seen from the perspective of the project workers, as opposed to the view of the buyer.

Based on the above discussions, it is suggested that the present study contributes to PSF as well as project management literature by identifying learning through different project roles, phases, and sizes as important to CD in PSF project work. Related to newcomers and old-timers, this implies that taking these dimensions further into account may contribute to an enhanced understanding of how e.g. project leaders and project co-workers develop competence throughout different types of projects.

Further, learning from multi- and uni-disciplinary projects was identified in the study.

#### *Learning from multi- and uni-disciplinary projects*

The findings show that multi-disciplinary projects facilitate *broad* functional competence, whereas uni-disciplinary projects facilitate *deep* functional competence. Since projects are operationally carried out by teams, it seems beneficial to relate this discussion to the comprehensive literature on teams. Based on the finding that the degree of multi-disciplinarity among individuals participating in a project influences the type and degree of competence available in the relationship, people in a multi-disciplinary project gather information from a variety of sources. Such differences can inhibit team process and/or effectiveness (Bunderson & Sutcliffe, 2002), as multi-disciplinarity can increase conflict (Knight, Pearce, Smith et al., 1999; Pelled, Eisenhardt & Xin, 1999). Since group members who are not in the same cohorts find it more difficult to communicate than do same-cohort members (O'Reilly III, Caldwell & Barnett, 1989), this makes conflict and power struggles more likely. Bunderson and Sutcliffe (2002) argue that by broadening the range of experience and expertise available to a team, multi-disciplinarity can promote team effectiveness. In favor of this, empirical studies have shown that multi-disciplinary teams, compared to homogeneous teams, can be more innovative (Bantel & Jackson, 1989; Jackson, May & Whitney, 1995), develop clearer strategies (Bantel, 1993), respond more aggressively to competitive threats (Hambrick, Cho & Chen, 1996), be more likely to share information (Stasser & Titus, 1987), and be quicker to implement certain types of organizational change (Williams, Hoffman & Lamont, 1995). Cohen and Levinthal (1990) suggest that in settings where there is uncertainty about domains from which potentially useful learning may emerge, a diverse background provides a more robust basis for CD because it increases the prospect that incoming information will relate to what is already known. Further, in addition to strengthening assimilative

powers, competence diversity also facilitates the innovative process by enabling the old-timer to make novel associations and linkages. This supports the identification of multi-disciplinarity among old-timers as beneficial for CD.

On the other hand, this study also shows the importance of uni-disciplinary projects. Literature on teams suggests that uni-disciplinarity within and between groups may lead to solidarity, sponsorship, communication frequency and integration (Argote, 1999). Social psychological research on decision-making groups shows that similarity among members' understanding, particularly of values, beliefs, and attitudes, increases group identification and cohesion (Byrne & Wong, 1962; Lott & Lott, 1965; Rokeach, 1973; Zander, 1977). Cohesiveness is in turn associated with high conformity (Kiesler & Kiesler, 1969; Zander, 1977), lack of openness to external information, and interference with a group's ability to fully use information (Whitney & Smith, 1983). Thus, building on these results, uni-disciplinarity may have a tendency to exhibit conformity and lack of openness to potential external sources of competence.

Overall, studies of group homogeneity and heterogeneity show a complex picture. From reviewing 40 years of empirical research on the effects of group diversity, Williams and O'Reilly (1998) conclude that diversity is more likely to have negative than positive effects on group performance. An exception to this pattern is found for the effects of functional diversity or diversity in backgrounds, as functional diversity generally had a positive effect on group performance. Compared to studies of performance, this study of PSFs shows that functionally multi-disciplinary activities facilitate CD. Based on Williams and O'Reilly, Argote (1999) concludes that heterogeneous groups are better than homogeneous groups at developing new knowledge. Hence, compared to the vast literature on teams and groups, the findings of this study based on multi- and uni-disciplinary projects suggest that functional diversity facilitates functional CD in a broad sense across functional disciplines, whereas functional similarity facilitates functional competence in a deep sense within a single discipline.

Next, the contributions to PSF literature are summarized.

#### *Contributions to PSF literature*

Overall, it is suggested that this research contributes to PSF literature with a study of how competence development takes place within and across multiple PSFs from different industries. In this respect, the study contributes with some surprising results. Whereas PSF literature shows tremendous interest in competence as vital to PSF value creation and competitive ability, people in the four PSFs studied show remarkably little interest in the

development of competence. Hence, the actual centrality of CD in PSFs can be questioned. Moreover, it is proposed that this study adds to Løwendahl's (1992; 1997) framework on generic strategies by providing initial descriptions of CD processes for firms that represent different generic types of PSFs. Compared to the VCPs of PSFs-framework (Løwendahl, et al., 2001) with the magnifying glasses on two paths to CD, the empirical study allows for refinements and a more detailed understanding of CD in PSFs. In particular, this refers to the higher importance of learning by doing in project assignments compared to investments in CD, the distinction between newcomers and old-timers, the role of clients and external networks in CD processes, and the influence from multi- and uni-disciplinary projects, as well as project role, phase, and size, on CD. These elements were not addressed in the initial VCPs of PSFs-framework.

### **9.1.2. Strategic resources**

In light of literature on strategic resources, the following elements are discussed: 'the strategic importance of type of project', 'heterogeneity with regard to generic strategy and CD process', 'a resource base of newcomer and old-timer competence', and 'broadening the intra-firm perspective'.

#### *The strategic importance of type of project*

This study assumed CD as an underlying process for a PSF to stay competitive over time (Løwendahl, 1992; 1997; Starbuck, 1992; Maister, 1993; Morris & Empson, 1998; Empson, 2000). In this respect, intangible resources can be accumulated either through daily operations or through investments (Itami, 1987). This current study confirms the existence and importance of both routes to CD. However, CD through daily operations is by far more prominent than CD through investments. This means that strategic focus in terms of types of projects targeted has a major impact on learning and the competence developed, particularly in a long term perspective. The VCPs of PSFs-framework (Løwendahl et al., 2001) argues that domain choice, service delivery, and resource base must match and link together through intentional, informed, and integrated choices (Løwendahl et al., 2001). This current study suggests that the same seems to be true for the CD processes. This implies that when the types of projects chosen or won and the competence developed through these projects are strategically beneficial for the firm, and, combined with appropriate investments in CD, these processes may also contribute to new strategic opportunities for the PSF. In this respect, CD may even represent a strategic resource which can contribute to enhanced competitive ability due to consistency between strategic choices, types of projects, and learning processes. This further means that firms that are better at gaining the "right" type of projects and continuously developing the competence of their employees, and making this a set of specific processes embedded in the organization, are likely to

improve their efficiency and effectiveness. In PSFs, these efforts are suggested to mutually enhance both professionals' learning and service delivery to clients, which again are likely to strengthen the firm's reputation and competitive ability.

*Heterogeneity with regard to generic strategy and CD process*

Based on this study of the development of competence as a key example of an intangible resource, heterogeneity with regard to generic strategy and CD processes in the studied companies is identified. Competence development takes place through an expert or creativity dominant CD process for the creative problem solving based PSF, through an efficiency dominant CD process for the output based PSF, and through a client interaction dominant CD process for the client relation based PSF. The resource-based view suggests that firm heterogeneity underlies competitiveness and that resources form the basis for differential company performance (e.g. Barney, 1991; Amit & Schoemaker, 1993; Peteraf, 1993; Ahuja & Katila, 2004; Acedo et al., 2006). Yet, as pointed out in chapter 1, it may not be possible to clearly and directly state the connection between resource development in the form of competence development on the one hand and organizational performance on the other (e.g. Johnson, Melin & Whittington, 2003). Even though it is not the aim of this study to explain or measure to what extent CD actually contributes to improved firm performance, it still seems fruitful and possible to suggest some implications with regard to competitive ability.

The generic strategies suggest that PSFs can build competitive positions either from individually controlled competences combined with unique client relations, organizationally controlled competences combined with unique solutions, or individually and organizationally controlled competences in combination with a unique ability to solve new problems creatively (Løwendahl, 1992; 1997). This implies that expert or creativity dominant CD processes may contribute to improved competitive ability of a creative problem solving based PSF as they support and enhance the ability to solve complex problems. Efficiency dominant CD processes may contribute to improved competitive ability of an output based PSF as they support and enhance the ability to deliver solutions efficiently. Client interaction dominant CD processes may contribute to improved competitive ability of a client relation based PSF as they support and enhance client responsiveness and ability to handle client relationships. In this respect, competitive ability has two dimensions, clients, as well as professionals to retain or recruit. This further implies that as a result of improving the resource base through CD processes, the PSF may be able to offer improved or other types of services, or pursue new types of clients compared to the initial strategy/domain choice. This spurs for new opportunities, which again calls for a rethinking of the future strategy in order to match the resource

base and the domain choice, as choice of clients sets opportunities and limitations for the CD of the employees – and vice versa.

*A resource base of newcomer and old-timer competences*

The distinction between newcomers and old-timers show that the development of competence differs between these two types of workers depending on their interactions in intra-firm relations, client relations, and external network relations, as well as their role in projects of different phases and sizes. Hence, this study identifies specific conditions that are particularly important to the CD of certain *actors* in certain contexts. This suggests that “who” may represent or control a resource when, where, and how, varies depending on certain circumstances. As a result, the distinction between newcomers and old-timers leads to the suggestion that competence can hardly be seen as a given, predefined, and context neutral asset, as is common within the RBV. Rather, to gain deeper knowledge on how the competence of different actors influences and contributes to value creation and competitive ability, detailed investigation of the heterogeneous individuals that constitute the resource base seems required. This study can be seen as one step in that direction.

*Broadening the intra-firm perspective*

The emphasis on clients and networks as important sources of learning for the professionals in this study, raises the question of whether the conventional intra-firm approach of the RBV allows for a realistic understanding of CD in PSFs. Similar to the study of Haanæs (1997), this study suggests that regarding resource development, traditional RBV research, which typically focuses on the firm from an intra-organizational perspective, is too crude. Investigations conducted solely from an intra-firm focus may lead to a limited and possibly biased perspective in terms of disconnecting service providers from their clients and the larger business environment in which they operate. What is regarded as “internal” and what is regarded as “external”, however, seems to be a question of definition. As an alternative, it seems useful to focus increasingly on CD at the “point of exchange”, i.e. on the interactions, relations, and activities between e.g. service providers and clients - where these may occur.

Below, the contributions to literature on strategic resources are summarized.

*Contributions to literature on strategic resources*

This study contributes to literature on strategic resources by empirically investigating the development of competence as an intangible resource in PSFs. In this respect, the type of projects PSFs are able to gain stand out as important. Further, based on the heterogeneity identified with regard to generic strategy and CD process, the study suggests some tentative



implications for the competitive ability of different types of PSFs. In terms of the distinction between newcomers and old-timers, the study contributes by showing that the RBV approach of treating the resource base as a given entity leaves out important dimensions for understanding resource base development. In addition, the important roles of clients and networks in CD processes suggest that the typical intra-firm approach of the RBV is too crude when it comes to understanding CD in PSFs.

Next, the findings are compared to literature on competence and learning.

### **9.1.3. Competence and learning**

In terms of literature on competence and learning, attention is focused on the following findings: ‘project competence and client competence as distinct competences’, ‘internal training in collaboration with external people’, and ‘learning based on individual experiences *and* social interactions’.

#### *Project competence and client competence as distinct competences*

As discussed previously, beyond contributing with a study identifying different CD processes, this study has also pointed out different types of competences within and across the PSFs. With the theoretical definition of competence consisting of knowledge, skills, and aptitudes (Nordhaug, 1993) as a starting point, the competences identified relate to ‘functional competence’, ‘relational competence’, ‘project competence’, ‘client competence’, and ‘organizational competence’. Compared to Løwendahl and Nordhaug (1994), these aspects correspond quite closely to the ones identified in their Lillehammer project. However, in contrast, in this study of CD in PSFs, ‘client competence’, i.e. competence about clients, is seen as a distinct competence. A likely reason seems to be the vital importance of clients to PSF billable hours, as well as CD. In addition, ‘project competence’ illustrates the importance of project work in PSFs, and represents a distinct competence in this study. Hence, the competence types of Nordhaug (1993) and Løwendahl and Nordhaug (1994) in terms of functional competence, relational competence, and organizational competence are confirmed in this study. Further, the development of ‘project competence’ and ‘client competence’ is suggested to extend the competence types set forth by Nordhaug (1993) and Løwendahl and Nordhaug (1994), when it comes to PSFs.

#### *Internal training in collaboration with external people*

Further, the study shows that people in all four firms learn from a mix of internal and external training. This supports the notion of internal training and external training as two main ways to competence development through investments (Nordhaug, 1993). The findings of this study further show that internal training is often conducted in collaboration with people external to

the PSFs. Nordhaug (1993), however, makes a clear distinction between internal and external training based on where the training takes place (in-house versus external to the firm) and who is arranging the training. This study, thus, illustrates that such a distinction becomes blurred because many of the in-house training investments are arranged by and for people in the firm, but to a large extent carried out by and in close collaboration with external people. Hence, this study suggests that the classifications of internal and external training set out by Nordhaug (1993) need to be broadened in order to give room for a type of training where there is a close interaction between PSF employees and external collaborators who both contribute as inputs to and outputs of a mutual learning process, and which opens up for training grounded in other needs than adjustments to market demands.

*Learning based on individual experiences and social interactions*

CD in the PSFs studied relates to an individual side as well as to a social, relational one. The professionals work both in relationship with other people in intra-firm relations, client relations, and network relations, and alone where they learn from individual experiences. In this respect, this study emphasizes that it is the *switching between* acting, thinking, doing, etc. alone, *and* interacting, communicating, collaborating, etc. with others, that serves as a fruitful arrangement in terms of enhancing CD. In other words, it seems to be the *interplay* of individuals in interaction *combined* with individual experiences that contributes to people's CD in the PSFs studied. Literature on learning emphasizes that CD takes place primarily through individual experiences (e.g. Dewey, 1916; 1938; Schön, 1983) or primarily through collective and social interactions (e.g. Lave & Wenger, 1991). This study does not give unconditional support to either of these two approaches. Rather, the study indicates that it is not a question of either - or, but of both - and. It is suggested that a combination of the two approaches is appropriate for understanding CD in PSFs.

*Contributions to literature on competence and learning*

In summary, it is suggested that this research extends the competence types set forth by Nordhaug (1993) and Løwendahl and Nordhaug (1994), by adding 'project competence' and 'client competence' as important competences in PSFs. The study further calls for a broadening of Nordhaug's (1993) classification of internal and external training. Also, based on this research, it is suggested that CD takes place through an *interplay* between learning from individual experiences (e.g. Dewey, Kolb, 1984) *and* social interactions (e.g. Lave & Wenger, 1991).

The next section discusses the findings with regard to implications for research design.

## 9.2. Discussion of findings and implications for research design

The findings of this study can also be discussed in light of the methodological background presented in chapter 3. Based on the study's research questions and existing literature on the topic, a qualitative, exploratory case-study design was chosen based on an extended case-method. Guided by the findings, this section focuses on research design and research setting.

### 9.2.1. Design

This study builds on a design which aimed at and resulted in extending and refining literature, as discussed in section 9.1. Compared to the conventional methodology of RBV studies, using quantitative surveys, often of secondary data, at a firm/managerial level (e.g. Henderson & Cockburn, 1994; McGrath et al., 1995; Miller & Shamsie, 1996; Hitt et al., 2001; McEvily & Chakravarthy, 2002), this *qualitative* inquiry of *primary data* opens up for an alternative approach to understand the *development* of resources. In an under-researched area such as the development of competence as an intangible resource in PSFs, large-scale surveys are likely to result in attempts to quantify competence. At an early stage of knowing, such an approach could easily end up focusing on training activities in terms of costs related to investments in courses, internal support activities such as IT technology and the like, elements which in this study are identified as far from the most important for CD. Rather, the qualitative approach enabled open questions and nearness to the informants. As a result, the study showed that whereas low priority and little actual interest in CD dominated, still, competence development most importantly takes place through subtle and limitedly quantifiable processes of learning by doing in client projects.

Such an emphasis on informal CD, relative to more formal training, adds to the challenge of doing research that includes slippery and elusive concepts such as competence development. Compared to a formal characterization, informality lies precisely in the less stringent and not so easy to "see", measure, document, and articulate aspects such as learning at work. Also, the tacit aspect of competence is more prominent in loose informal CD activities than in planned and systematized formal activities. Thus, the tacit element further adds to the challenge of investigating CD. These aspects indicate a need for research practices that better support investigations of fluid and ambiguous phenomena that are difficult to quantify and verbalize. With regard to studies of competence, Henderson and Cockburn (1994) claim that, in general, resource-based studies of competences, resources, capabilities, etc. "*have been forced to rely on measures of competence constructed at such an aggregate level that they cannot capture the richness of the constructs of the theoretical literature*" (1994:63). This suggests the

relevance of more micro oriented research (e.g. Johnson, Melin & Whittington, 2003) in order to delve into the richness of CD through real work practice in organizations. This again requires methodological approaches able to capture complex and diversified organizational actors and settings. In this respect, Balogun, Huff, and Johnson (2003) suggest complimentary methods providing breadth and flexibility. In their view, frequently taken for granted assumptions about how to conduct research and the way in which to engage with research participants need re-conceptualization. For example, interactive discussion groups and the importance for researchers to work *with* organizational members as active participants rather than passive detached informants are emphasized as promising approaches. Based on these reflections, this implies that the common RBV survey approach needs balancing from alternative qualitative studies in order to gain deeper as well as more comprehensive insight into CD through daily operations, its combination with investments in such processes, and its contribution to the building of competence-based resources and competitive ability. Hence, this research contributes with a qualitative study, where the findings support the choice of applying a qualitative and broad approach to the investigation of CD in PSFs.

With regard to the exploratory approach, this allowed for flexibility and new dimensions to emerge. For example, this was the case with regard to the link between CD processes and generic strategies. While the starting point was to select industries and firms based on a “maximizing differences” approach (Yin, 1994) with regard to degree of established industry, membership in profession, and firm size between industries, it turned out that each firm’s strategy for value creation as well as certain characteristics of the PSF work context were more influential than firm size and profession (Starbuck, 1992; Hansen et al., 1999). Hence, in this exploratory study, a flexible design showed beneficial as it opened up for opportunities to pursue patterns that unfolded as the study progressed. This implies that for future research on CD process and generic strategy, it can be fruitful to try to choose PSFs based on their type of generic strategy as a relevant criteria for selection. The inclusion of observations as important to the understanding of CD in PSFs further illustrates the benefit of applying a flexible design when the aim is to investigate exploratory questions on a topic where existing literature is relatively scant.

Next, the research setting is addressed.

### **9.2.2. Setting**

In this section, findings are discussed in light of the selection of industries and firms, as well as informants. Focus is on sources of variation.

### *Industries and firms*

CREO and INFO on the one hand, and TEKNA and ENGY on the other, are very different with regard to type of industry. However, it seems as even though the type of work in itself is highly different (also between the firms of the same industry; particularly CREO and INFO), the low priority of CD and the underlying logic of value creation is shared irrespective of industry. Both communication and engineering firms are dependent on creating value for clients as well as employees, and despite their heterogeneity in terms of industry and firm size, learning through service delivery processes is overall quite similar. Billable hours are the source of income. The distinction between newcomers and old-timers with regard to learning in intra-firm-, client- and network relations, as well as regarding learning through different project roles, phases, and sizes, are very similar. Therefore, even though the dominant CD processes, the generic strategies, the types of client problems, and the types of projects are different, the procedures and the structure of the service delivery processes are rather similar. This may explain why industry differences demonstrated less influence on the CD processes than initially assumed.

In terms of differences, these are most prominent with regard to the generic strategy of the firm, but also with regard to industry. Whether the latter has to do with degree of established industry or connection to professional organizations is difficult to ascertain. The preferences for types of clients differ between the engineering and communication firms. People in the engineering industry want public clients because they are in charge of large, multi-disciplinary projects such as the construction of public roads, bridges, and tunnels. In addition, the public clients often share the same type of functional education as the service providers, resulting in higher and more clearly specified demands, whereas most private clients lack engineering competence. People in the communication firms mainly serve private clients, and they do not express differences in terms of CD depending on whether the client is public or private. The communication firms gain client assignments primarily through good reputation created in client and network relations, whereas the engineering firms primarily gain assignments based on tough bidding competitions among competitors. These industry differences indicate that the markets the PSFs operate in differ. Large engineering projects that run for several years involve higher costs than large communication projects. Further, in the communication consulting business the use of tenders is not common. This may be due to the age and degree of established profession. However, a more likely explanation is that in the public sector, tenders are required by law, whereas in the private sector such guidelines do not apply. Hence, since the engineering firms to a large extent serve public sector clients, whereas the majority of the communication clients are private, there are other customs for how to proceed in order to

gain and maintain clients. These circumstances imply that the communication firms are in a better position to choose clients that are “right” in terms of CD than are the engineering firms.

Industry differences also occurred with regard to an emphasis on different aspects of project work. People in the communication industry emphasized the generation of ideas and the process concerning the development of the service as important aspects of project competence. The engineers, on the other hand, highlighted planning and the importance of keeping budget limits in projects. The reason for these differences seems to relate to the nature of their work. In communication, inter-personal activities are important, as well as how messages are communicated to target groups. In such a context, ideas and processes easily come to the forefront. In an engineering context, project planning and coordination are important because there are more people involved and the projects are larger and run for longer periods of time, thereby making the coordination of functional fields and the keeping of financial budgets accordingly essential. Besides, margins are heavily squeezed, due to public bids. In addition, engineering functional competence is crucial in order to deliver services based on both uni- and multi-disciplinary projects.

Further, industry differences are particularly distinct in terms of IT and training activities. Here, it seems as if firm size also plays a role. The small communication firms rely a lot on external sources in their training activities, whereas the large engineering firms rely most on internal sources. This is particularly the case in TEKNA, the largest firm. A plausible question, then, concerns whether these differences would arise if the firms within each industry represented one small and one large sized firm? In the management consulting industry, several firms such as e.g. Accenture and Capgemini carry out highly systematic training of newcomers. Newcomers meet a “package” of training activities in which they are to participate and learn. This raises another question, would the industry differences in terms of efforts devoted to training and support activities be larger if investigated in other types of PSF industries?

The larger firms contain more extensive administrative systems and organizational charts than the smaller ones. However, firm size seems to have reduced influence due to project based work and the high reliance on informal learning by doing through actual client assignments. This can be due to the similarity in how project work is organized in the PSFs. Nevertheless, independent of firm size, few systematized efforts are found in the four firms to support informal CD. Such orchestration seems important in both small and large firms. Perhaps it is even more vital in small firms,

because such firms have a smaller number of projects and workers to choose from.

Hence, this study contributes with a comparative study of multiple PSFs from different PSF industries. However, due to the many similarities, and to the finding that two of the firms (CREO and TEKNA) that represent different industries both are classified within the creative problem solving category, it is suggested that differences across the industries and firms of different sizes may be smaller than one could expect from deliberately selecting firms and industries based on a contrasting approach. Instead, it seems that type of generic strategy and similar characteristics of the type of work context (e.g. intangible services, billable hours, project work, informal learning etc.) are more influential than the initial criteria for selection. In this respect, the identification of the relationship between CD process and generic strategy can be seen to represent a finding in itself.

#### *Informants*

This study included the *perspectives of a variety of informants*, managers as well as non-managers, with different experience, education, tenure, age, gender, and position in the firm. Of these demographic criteria, work experience in terms of tenure in current firm meant the most. This led to a distinction between what was termed newcomers and old-timers. Typically, the youngest workers (typically the newly educated ones) and new hires are included as newcomers, whereas old-timers are primarily associated with experienced workers around 40+ who have worked in the current firm for at least three years in the communication consulting firms and five years in the engineering design firms. Based on the findings, the managers are included into the broader term 'old-timer', and are not seen as distinct sources of variation. This is because most managers are also old-timers, work only part time as managers, and spend the rest of their time in project assignments.

In terms of *gender*, especially among the old-timers, the number of men and women vary between the firms. CREO consists of more women than men. The balance between women and men is more evenly distributed in INFO, but men represent most of the old-timers. In TEKNA and ENGY, there are far more men than women. This imbalance is also reflected with regard to the gender of the informants. However, the informants' opinions do not differ with regard to gender. For example, the views of the men in CREO and the women in INFO are consistent in terms of work experience in the current firm. The same is the case in TEKNA and ENGY. Further, none of the informants indicated that people are treated differently because of their gender, or that gender is an issue in the CD process. Therefore, gender does not seem to represent a distinct dimension of analysis in this study. An explanation for this may lie in the fact that the informants are about equally

highly educated and work in mixed teams, sharing the same problems and challenges regardless of gender. Besides, there is probably reason to believe that also the client representatives consist of both men and women.

Another criterion of concern is *educational background*. Why is educational background of no distinct importance? Variety in type of educational background is seen as positive. In CREO, nearly all employees have an educational background different from that of their colleagues. Therefore, if educational background explains CD differences, these could possibly differ in a variety of directions. This is, however, not the case, as variation is found according to tenure in current firm. In sharp contrast, in TEKNA, where the employees mainly consist of civil engineers educated at NTNU, little variation should be expected. This is not the case. Instead, variation occurs with regard to work experience in the current firm. Therefore, gender and educational background do not seem to explain why newcomers and old-timers turn out as distinctive analytical dimensions in this study of CD in PSFs.

As a result, the “maximizing differences approach” (Yin, 1994) with regard to informants allowed for variation between different groups of individuals. The discrepancies in opinions between newcomers on the one hand and old-timers on the other, suggest that the focus on a managerial level common to RBV research may only capture the voices of people representing one (small) part of a firm. Thus, the findings of this study empirically support the conceptual work of Tsoukas (1996) in that no single agent can fully explain the complex picture of what goes on in organizations. Therefore, a focus on managers aggregated to represent the firm as a whole, may leave out vital aspects necessary in order to understand the development of competence as part of value creation in firms. The inclusion of both managers *and* regular employees as informants in this study, thus, enabled the contribution of the distinction between newcomers and old-timers. Hence, this research emphasizes increased complexity compared to research applying the firm as *one* thinking and acting entity. As suggested earlier, PSF and RBV research that treats the resource base as a given, homogeneous entity may preclude more fine grained dimensions from emerging. Such an approach is further problematic because of disagreements regarding who and/or what is the firm? Or more specifically, who are representative agents of the firm? In the RBV literature, studies of “the firm” are often limited to (top) managers only. This study has shown that simply using managers as proxies for the firm only captures a part of the total picture of CD in PSFs. The distinction between old-timers and newcomers suggests that an increased understanding of variation among different people and their roles in organizations is important. Thus, traditional managerial level approaches within RBV and PSF literature are in danger of leaving out important angles of investigation



by disregarding the opinions of people in non-managerial roles – people who usually constitute the majority of the individuals working in firms. This implies a rethinking of managers as substitutes for the entirety of the company. This seems particularly important in PSFs, where professionals typically enjoy a relatively high degree of personal autonomy on how to do their work (e.g. Greenwood et al., 1990; Løwendahl, 1997; Empson, 2000), where client relations are often built up by single individuals, as illustrated in this study, and where a personal responsibility for CD is expected, as also illustrated in this study. Since the resource base is not necessarily restricted to managers versus non-managers, other criteria for variation such as newcomers and old-timers can represent alternative research dimensions. Hence, this study supports research that includes a variety of people with different roles and positions in order to capture the voices of not only managers but also professionals in general.

Based on this study, it is suggested that PSF and RBV studies that aim at addressing intangible resources such as CD consider qualitative studies as a useful approach. A flexible design seems recommendable along with the inclusion of a variety of informants. In addition, increased emphasis on observations in real work practice and more interaction with the informants, also over longer periods of time, are suggested.

The next section discusses findings and implications for practice.

### **9.3. Discussion of findings and implications for practice**

Based on the findings of this study, what are the implications for practitioners? The practical implications can be structured as implications for PSF managers and implications for PSF professionals in terms of newcomers and old-timers, as addressed below.

#### **9.3.1. Managers**

From the perspective of this study, one important aim for *PSF managers* is to lay the foundation for beneficial CD orchestration in order to improve the resource base, and thereby strengthen opportunities for the PSF to compete for, attract, and retain both the right people and clients. This is a very complex balancing act. This study does not provide “the answers” to this endeavour. But, based on the findings of this study, at least three main challenges seem to apply to a managerial orchestration of CD in PSFs: 1. To set priorities and to ensure compliance between strategic goals and CD processes. 2. To develop and support the conditions facilitating CD, and at the same time reduce the constraints. 3. To develop the right type of

competence for the right type of professional, i.e. with regard to newcomers and old-timers.

1. The first challenge, to set priorities and to ensure compliance between strategic goals and CD processes, relates to the low priority of CD and the finding that there seems to be a match, although far from ideal, between CD process and type of PSF generic strategy. This relationship is not uncomplicated and straightforward, but can be difficult to identify, especially because real companies are much more complex than the generic types set forth in literature on the subject. This is particularly so because a major challenge for most firms seems to lie exactly in the positioning of the firm. This suggests that managers need to a) reflect upon what kind of strategy the firm has for value creation, because b) CD processes must be orchestrated differently depending on whether the firm is primarily a client relation based PSF, a creative problem solving based PSF, or an output based PSF. This means that the CD process of a client relation based firm must strengthen the firm's ability to develop strong relationships with clients. The CD process of a creative problem solving based firm must enable the firm to develop highly customized, creative, and expert based services. Whereas the CD process of an output based firm needs to support competence related to reuse of solutions and efficient service delivery. As a foundation for comparison to other firms, this study provides examples of four different CD processes from four different PSFs. With regard to the value creation of PSFs, this study suggests that an analysis of (i) the consistency between strategic positioning of the firm (in terms of what, where, to whom, and how to deliver), (ii) the kind of services delivered to clients, and (iii) the competence of the people conducting these services (in terms of who participates in the delivery), can help managers to identify and classify their firm in terms of generic strategy, and thereby better facilitate appropriate CD processes in line with the overall goals of the firm.

2. The second challenge, to develop and support the conditions facilitating CD, and at the same time reduce the constraints, relates to the finding that the CD facilitators and constraints are not the flip side of each other. Typically, CD is primarily facilitated through the informal learning by doing going on in the day-to-day project work for clients, and constrained by high time pressure, uneven work load, and a lack of routines supporting CD through team composition and relevant practice opportunities. Hence, dealing with these conditions requires very different approaches and actions. The findings imply that managers need to orchestrate CD efforts in support of informal learning by doing in client projects. However, informal learning by doing is easily neglected in daily operations of high time pressure and client demands, as illustrated by this study. Therefore, it is important to increase explicitness, consciousness, and reflection on informal CD among

all professionals. Increased attention and awareness towards CD in project work may also reduce the claim for more formalized development in terms of training. This does not mean that support activities are not important. Quite to the contrary, even though a small number of non-billable hours seem to be the ultimate goal, if all hours are billable and client projects are allowed to drive all learning, both CD and value creation risk being very short-term oriented. In this respect, strategically choosing assignments with opportunities for CD becomes important. Managers thinking they are outperforming competitors because of very low numbers of non-billable hours, may find that a competitor with lower productivity has been deliberately investing in relevant competence for the future, and this competitor may perform better in the long run. This also implies that comparing PSFs in terms of their ratio of billable to non-billable hours may not be very fruitful.

In a work context with high time pressure, billable hours, poor evidence of explicit emphasis on informal learning by doing, combined with a lack of routines for team composition and work distribution, who gets involved in what types of projects becomes rather arbitrary and ad hoc. In order to improve this situation, could it be that a sophisticated coordination aiming at facilitating learning by doing in assignments with regard to type of worker, present competence, and future competence objectives is fruitful? Based on the findings, it is important that individuals are directed into the projects, activities, and relations relevant for the type of competence each represents, or needs to develop. In this respect, systematized team staffing and ways of developing the competence of newcomers and old-timers through learning by doing based on relevant practice opportunities of project role, phase, and size, and the relevant interactions in intra-firm, client, and network relations, combined with efficient training activities, are suggested to improve the resource base as a whole. Maybe such coordination of CD needs to be managed by a 'CD coordinator', a defined strategic role in the organization? For the 'CD coordinator', keeping focus on CD and addressing the following questions may be of help:

- Are people sufficiently aware of the informal CD that takes place as learning by doing in project work, and are they able to reflect upon and share this ongoing learning?
- How do we identify and keep track of existing competence in the firm, i.e. knowing who knows what and what people need, as well as what people can do and what they want, in order to utilize available competence and facilitate long-term CD beneficial to both the firm and the individual professionals?

- Are we able to mix and mobilize newcomers and old-timers into projects with a view to CD? According to the findings of this study, newcomers develop competence through feedback from old-timers, client interaction, and understanding both parts and the totality of large and small projects. Old-timers develop competence as project leader of demanding and large projects, interaction with peer colleagues of multi-disciplinary fields, as well as sophisticated competent clients of various types of industries.
- Do our investments in CD support and extend learning through daily operations of service delivery in order to meet overall company goals and visions?
- Do we know the conditions facilitating and constraining CD orchestration in our firm? And, are we able to evaluate the effects of learning and competence development in light of strategic opportunities and goal achievements?

Hence, ‘CD coordination’ is *strategically* anchored and tied to the value creation processes of the PSF. It is not simply a part of the resource base, or of HR policies, or project management. Rather, it links to the domain choice through choice of clients, and it links to and mediates service delivery and the resource base through the systematization and coordination of the matching and mixing of individuals and projects in order to enhance CD as a crucial part of value creation. How the PSF utilizes and spends the time of old-timers and newcomers need to be considered in light of alternative ways of using available resources and work hours. Thus, the potential role of the ‘CD coordinator’ will be a complex one. To the extent that a ‘CD coordinator’ makes the firm better at steering and coordinating competences both in terms of efficiently utilizing current competence and in terms of effectively developing future competence than competing firms, this may result in improved competitive ability.

In addition, since the managers are the linking pins between firm-level policies and individual CD, increased awareness needs to be directed to the possibility that intentions managers do - or do not - communicate may be received or influence others in ways different than those intended. As a result, side effects and implications for single individuals may be significant. This implies that managers need to be observant, reflective, and persuasive, and clearly communicate what they actually are trying to achieve in terms of CD, as well as why, and how they will proceed in order to reach these goals.

3. In terms of the third challenge, to develop the right type of competence for the right type of professional, i.e. with regard to newcomers and old-timers, it is essential for managers to know what kind of competence people develop

and how, so that appropriate action can be made to *strategically* enhance the competence of PSF professionals. This study has identified how CD processes take place in PSFs, but cannot ascertain to what extent the competence developed is strategically “best” for the firms. The study has further identified different types of competences being developed, in what settings they are developed and how. These competences include ‘functional competence’, ‘project competence’, ‘relational competence’, ‘client competence’, and ‘organizational competence’. The extent to which these competences are developed relative to each other varies between the firms according to the type of generic strategy. For the client relation based firm, a client interaction dominant CD process took place. This CD process emphasizes a special nurturing of ‘relational competence’ and ‘client competence’. For the output based firm, an efficiency dominant CD process took place. This means that competence related to ‘organizational competence’ including procedures, systems, and databases stands out. For the creative problem solving based firm, an expert or creativity dominant CD process took place. In particular, this CD process emphasizes the development of expertise in terms of ‘functional competence’ or in terms of ‘creativity competence’ to deliver tailor made services.

Based on consciousness with regard to these three managerial challenges, it is suggested that the foundation from which to make decisions and take action with regard to competence development in PSFs can be improved.

### **9.3.2. Professionals**

This study has implications not only for managers, but also for newcomers and old-timers in terms of their competence development as professionals. For *newcomers* (typically newly educated and newly hired people), it seems important to learn how “things are done” in the firm, to proactively and through personal initiatives make access to the arenas, relations, and activities potentially involving high degrees of CD. This includes, but is not restricted to, learning from interaction with more experienced colleagues, learning from direct interaction with clients, learning from an overall view of the projects (not only fragmented parts), and learning from both small and large projects as these often represent different challenges. For *old-timers*, it is suggested important to maintain and improve competence through actual project work, by getting involved in the innovative pre phases of projects, as well as to seek to master new challenges as project leaders of large multi-disciplinary projects. Interaction with competent clients and peer colleagues is also important for competence development. In addition, this study emphasized the importance of external networks to the CD of old-timers. This implies that it is considered valuable for old-timers to build relations with external networks as well as clients in order to broaden their opportunities for learning based on a variety of sources.

Hopefully, these reflections on theoretical, methodological, and practical implications can spur others to initiate refined investigations into the significance of CD in single and comparative studies of PSFs, as well as other types of industries, in seeking to further understand these processes and their role in resource development – both from a practical and an academic point of view.

Based on the above discussions of findings, a summary of the main contributions of this study follows below.

#### **9.4. Summary of main contributions**

The current study is suggested to contribute to literature on PSFs, strategic resources, and competence and learning. In addition, the study provides implications for research design and implications for practitioners. The most important contributions are summarized below.

##### **Contribution to PSF literature:**

- *First*, this study contributes with research on how the development of competence actually takes place within and across multiple PSFs from different industries. In light of the tremendous interest in competence resources in society in general, managers and employees in the four PSFs studied show surprisingly low priority of CD and little actual interest in enhancing CD. Yet, the firms seem to be doing well. This suggests that the very centrality of CD in PSFs can to some extent be questioned.
- *Second*, the study extends the framework on PSF generic strategies (Løwendahl, 1992; 1997) by adding descriptions of CD processes to firms representing different types of generic strategies. The following consistent, but not ideal, relationships are identified: an expert or creativity dominant CD process for the creative problem solving based PSF, an efficiency dominant CD process for the output based PSF, and a client interaction dominant CD process for the client relation based PSF.
- *Third*, this study refines and elaborates the VCPs of PSFs-framework (Løwendahl et al., 2001). This refers in particular to (i) the higher importance of learning by doing in project assignments compared to investments in CD, (ii) CD facilitators and constraints are not the flip side of each other, (iii) the distinction between newcomers and old-timers, (iv) the role of clients and networks in CD processes. Especially the importance of the clients to the CD of

the professionals represents a fresh angle to PSF literature.<sup>55</sup> Further, the relevant arena for CD is not necessarily within the firm, but rather in co-production with clients.

- *Fourth*, the study suggests that the person-to-person dimension set forth by Hansen et al. (1999) can be further cultivated to address more fine grained forms of variations depending on the degree of IT to support CD.
- *Fifth*, this research contributes to PSF as well as project literature by identifying project role, project phase, and project size as influential to CD in PSFs.

#### **Contribution to resource-based literature:**

- *First*, this study contributes to literature on strategic resources by empirically addressing the development of competence as an intangible resource in PSFs. Based on this research, it is suggested that competence development *can* represent a strategic resource which may contribute to enhanced competitive ability due to consistency within heterogeneous generic strategies, particularly with regard to strategic choices, types of projects, and CD processes.
- *Second*, research from a qualitative, exploratory approach is provided based on primary data of both managers and employees. The latter enabled distinctions between CD for newcomers and old-timers. This contributes to a refinement in terms of *who* may represent a resource, when, where and how. Hence, treating the resource base of a firm as one homogeneous unit may not be very fruitful.
- *Third*, the importance of “external” sources such as clients and network contacts and their contribution to CD processes of the service providers, imply a rethinking of the RBV intra-firm approach as a relevant boundary, particularly when it comes to PSFs.

#### **Contribution to literature on competence and learning:**

- *First*, this study adds to the types of competences set forth by Løwendahl and Nordhaug (1994) by suggesting ‘client competence’ and ‘project competence’ as distinct types of PSF competences.

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<sup>55</sup> At an early phase of this research process, this dissertation study was a source of inspiration for an article published in *Human Relations* (Løwendahl, Revang & Fosstenløyken, 2001). As the dissertation study progressed, this led to a further development of the understanding of knowledge development through client interaction. In this respect, some of the findings of this dissertation study have been published in an article in *Organization Studies* (Fosstenløyken, Løwendahl & Revang, 2003).

- *Second*, this research suggests refinements of Nordhaugs's (1993) distinction between internal and external training.
- *Third*, the study highlights the importance of informal learning by doing above and beyond training. The emphasis on informal learning at work contributes to a crucial but neglected part of professional practice that is difficult to quantify, capture, and control.
- *Fourth*, whereas parts of the learning literature focus on the importance of seniors to junior learning (e.g. Lave & Wenger, 1991; Nordhaug, 1993), this study emphasizes newcomer *and* old-timer CD and shows how these are different.

**Implications for research design:**

- *First*, this study contributes to PSF and RBV literature with a qualitative and comparative case-study. An exploratory design of primary data and nearness to informants identified that despite low priority and little systematized effort to enhance CD, substantial learning by doing through daily operations of project work for clients takes place, and is crucial to CD in PSFs. Hence, this study has identified other aspects than the typical quantifiable measures of, at least, traditional RBV research. An alternative qualitative approach, thus, seems recommendable in RBV and PSF studies that address intangible resources such as competence and CD.
- *Second*, the inclusion of a variety of informants, with as well as without managerial responsibility and with different experience and tenure, enabled a distinction between newcomers and old-timers based on their tenure in the current firm. This suggests that RBV (and PSF) research that (i) treats the resource base as one given and homogeneous entity may preclude more subtle dimensions from emerging, and that (ii) firm level analyses based on key informants in terms of managers may be misleading, at least when it comes to CD in PSFs.
- *Third*, while choosing industries and firms primarily based on a "maximizing differences" approach (Yin, 1994), the study shows that certain characteristics of the PSF work context seem more influential than firm size and profession. In particular, the type of PSF generic strategy emerged as the most influential. This finding illustrates the benefit of applying a flexible design, and implies that type of generic strategy can represent a fruitful criterion for firm selection in later studies of PSFs.



**Implications for practice:**

- For PSF *managers*, the findings of the study imply at least three important challenges in terms of CD orchestration: (i) to set and follow up on priorities, and to ensure compliance between strategic goals, types of projects, and CD processes, (ii) to develop and support the conditions facilitating CD, and at the same time reduce the constraints - as these are not the flip side of each other, and (iii) to develop the right type of competence for the right type of professional, i.e. with regard to newcomers and old-timers. In this respect, a 'CD coordinator' may be of help.
- *Newcomers* primarily develop competence through interaction with and feedback from old-timers in intra-firm relations when working as co-workers in the mid- or late phases of both large and small projects. In addition, direct interaction with clients facilitates learning. This implies that making access to such learning arenas is important to their CD.
- *Old-timers* typically develop competence through interaction with sophisticated clients, external network collaborators, and peer colleagues while working as project leaders of large, multi-disciplinary projects, including the innovative pre-phases. This implies that taking on the responsibility of increasingly more demanding projects as well as developing and nurturing relations with people who represent potential sources of learning stand out as important in order for old-timers to maintain and further develop their competence.

*Finally*, pulling these contributions together, this study adds to management research with an empirical and practice based account of how the development of competence actually takes place in professional service firms. Based on the findings, the study seeks to facilitate discussion and reflection on competence development in organizations. Even though firms can perform well without sophisticated CD orchestration, it is still likely that firms that are better at coherently orchestrating and continuously developing the competence of their employees - and making this a set of specific processes embedded in the organization - may improve their competitive ability vis-à-vis both clients and professionals. As such, CD may even turn into a strategic resource, which can further contribute to better firm performance.

In light of the findings and contributions of the study, shortcomings are also identified. These are addressed in the following section.

## 9.5. Limitations

All research bears strengths and weaknesses. Hence, a reflection on the research conducted in this study needs to consider several potential shortcomings. Based on the quality criteria set forth by Gummesson (1991) and Yin (1994) as a point of departure, the limitations of this study are discussed with particular regard to (i) theoretical approach, (ii) the issue under investigation, (iii) criteria for selection of empirical material, (iv) research design and process, and (v) the role of the investigator.

First, the *choice of literature* shapes and influences the analysis and the interpretations made. With alternative theoretical and epistemological lenses, emphasizing other aspects, it is likely that the results of this study would also be different. For example, functionalist RBV and strategy literature focus on firm growth and the maximization of profit. Thus, the desire to grow is treated as an underlying assumption present in all firms. However, growth in itself may not always be the objective for every PSF (Løwendahl, 1997). Some companies, CREO included, primarily want to maintain present amount of client work. Further, the literature used as the theoretical basis for this study mainly comes from research conducted in American and European settings. Other relevant literature within, as well as outside, these settings may have been overlooked. For example, the aim of this study is not to investigate e.g. organizational culture or emphasize the ambiguity related to identity constructions in PSFs, nor to research the couplings between tacit and explicit knowledge as such. Yet, the initial approach chosen takes it for granted that CD takes place, and that this is positive. In this respect, the application of an alternative, critical approach might have balanced these issues. Given the philosophical and epistemological views of this study, however, it is not the purpose to apply a radical-critical paradigm (Burrell & Morgan, 1979). The chosen literature further takes it for granted that the managers have the right to steer the employees' work and personal and professional competence development in a direction that benefits the firm. Hence, the relationship between competence and power, i.e. what is legitimate competence and who determines competence legitimacy are not problematized. From a strategy perspective, it may also be problematic that this study treats the voices of the informants equally. The opinions of a key professional with regard to CD may be more important for the firm relative to those of general employees.

Second, the *issue under investigation* is an ambiguous concept. The terms 'competence' and 'competence development' may instill positive bias, and can be regarded as slippery and elusive, with different connotations attached to them (Scarborough & Burrell, 1996). Thus, CD as such is challenging to investigate, because it can be difficult to operationalize, observe, and talk

about. According to Alvesson (2004), due to its partly tacit nature, we cannot expect people to produce highly precise accounts of their competence and competence use. Hence, studying competence issues involves a fair amount of uncertain judgement, which makes claims about competence and competence development debatable. By choosing to define competence as knowledge, skills, and aptitudes, other possibly fruitful definitions are necessarily ignored. In this study, a broad approach to CD is chosen. Hence, the study can be criticized for providing a broad rather than a deep treatment of CD. In an exploratory study in a field of limited existing research, it is, however, deemed important to develop and contribute with a holistic understanding of CD in PSFs. To further enhance the quality of the study, effort is put into communicating how *this* researcher deals with CD during the research process. This does not mean that the view of this particular researcher represents *the* one and only. There may be many other ways to consider and investigate competence. This study has only attempted to pursue one way of investigating CD in PSFs.

Third, the *criteria for selection of the empirical material* can be discussed. Based on theoretical sampling, a total of 51 informants were chosen from four PSFs, two firms from the communication consulting industry and two from the engineering design industry. As an alternative, one industry, or a single firm, could have been selected, as fewer case-firms enable more time with each informant and with each firm. Unanswered questions are, for example: would other results be generated if individuals from other firms were chosen, and would the results be different if the sizes of the firms were contrasted within each industry? Would the similarities be further accentuated or de-emphasized if the case-firms were chosen on other criteria? If so, would the similarities be even greater with the inclusion of two small engineering design firms instead of two relatively large firms? And, would other findings result if other industries had been included?

Fourth, shortcomings can be ascribed to the *research design and process*. Pettigrew (1990:106) encourages researchers to collect different forms of data and to test interpretations in project meetings, early case-study writing, and ultimately by presentations made to respondents in research-in-action workshops and academic gatherings. This doctoral process meets these suggestions. A pilot study is conducted before commencing the larger study, a variety of data sources are included, and interpretations are discussed with other researchers, nationally as well as internationally. The doctoral research has been presented and discussed at many conferences and workshops, including AoM, EGOS, EURAM, FIBE, SCANCOR, and SMS.<sup>56</sup> So far,

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<sup>56</sup> AoM: The Academy of Management Annual Conference; EGOS: The European Group of Organizational Studies Annual Colloquium; EURAM: The European

two articles from the research project have been published. The interview transcripts were reviewed by the informants for quality checks, and some of the respondents also made comments on written materials such as early case-study reports, academic papers, and earlier drafts of this thesis. However, given these precautions, there may still be shortcomings. Shortcomings and other errors are, of course, the full responsibility of this author. Overall, limitations connected to design and process are sought minimized in that the gathering, analysis, and reporting of data are done systematically, with care and discipline, as suggested by Patton (1980).

The data are based on insiders' self-reports. Such an approach includes both strengths and weaknesses. On the one hand, it represents unique possibilities to investigate CD from the view of the informant, as well as to compare the opinions of individuals from different firms and industries. On the other hand, it may be that the informants try to present an "ideal self" in order to appear better than they are, both as single individuals and with regard to the reputation of the firm. Or, they may say what they think a researcher or others in their work environment want to hear. These limitations are mitigated through the multiple PSFs and the broad composition of interviewees, as well as by relying on various sources of empirical data. However, this study cannot clearly state to what extent CD actually takes place, nor the degree to which it has positive economic impact. Further, since this study initially applied an intra-firm approach, it is not designed to explore CD as seen from the dimensions of clients and networks. Therefore, there is no data representing the views of clients or network contacts.

Individual professionals are found to be appropriate as informants. However, the degree to which the CD perceived by the people in these firms actually results in improved competitive ability cannot be evaluated through the design of this study. Thus, to what extent CD is positive to the firm with regard to value creation and competitiveness is not investigated. In other words, is the firm able to perform better based on the CD activities and processes identified here? This study does not provide an answer. However, building on PSF literature, an affirmative reply is likely. Yet, further research is needed in order to draw conclusions about the relationship between CD and firm level competitive ability.

Fifth, limitations related to the *role of the investigator* need to be considered. Resource constraints include the work of a single researcher versus a team of

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Academy of Management Annual Conference; FIBE: Nasjonal fagkonferanse i bedriftsøkonomiske emner, Annual Conference; SCANCOR: The Scandinavian Consortium at Stanford University; SMS: The Strategic Management Society Annual Conference.

researchers, the time of the doctoral period, and the financial funding available. Despite research presentations and cooperation with other researchers on the writing of some of the papers, the research process has mainly been an individual effort. Therefore, quotes are used extensively to allow readers to make their own opinions about whether the findings are plausible. Another question is how the researcher's background in pedagogy and educational science from the university of Oslo influenced a study based on strategy and PSF literature at a business school? It is likely that initial unfamiliarity with the subject under investigation prolonged the process of reaching sufficient maturity to understand, judge, and develop own reflections on the matter. On the other hand, the understanding of the findings of this study has probably been substantially improved by the fact that the study period has been extended by several years beyond the initial three years of full time study. In any case, a steep learning curve was generated. Further, how did the researcher's initial unfamiliarity with the engineering design and communication consulting industries affect the questions asked in the interviews as well as the interpretations of the responses provided? For the researcher to become familiar with the research context, a lot of time and effort was put into getting to know the informants, their work, and organizational surroundings. In retrospect, an investigator familiar with the work contexts from the beginning would probably be better able to go in depth and ask more fundamental questions at an earlier stage in time. As knowledge about the informants' work, the case-firms, etc. grew, along with increased research experience, the understanding and maturity influenced the questions asked and the interpretations made in subsequent cases, particularly with regard to the last two case-firms. On the other hand, the fresh perspective of an "outsider" has the potential benefit of enabling new dimensions for investigation. Besides, an insider tends to be hampered by the same taken-for-granted assumptions as the interviewees.

Related to the discussion above, one might also ask whether the researcher is sufficiently critical towards the viewpoints expressed by informants? The concern of this study is not to what extent agreement exists between the informants and the researcher. The aim pursued is to contribute to an understanding of CD in PSFs, as investigated from the point of view of the professionals working in these firms. To reduce both conscious and unconscious biases, a reflective attitude was maintained throughout the research process. For example, the procedures used in the analyses are described in detail to allow other researchers to follow the specific as well as overall lines of the research process. In any case, the data analyzed and the findings ascribed remain the constructions of the researcher. This means that there may also be an analytical bias stemming from the incidence that this dissertation itself constitutes a sense-making process, which may entail

retrospective bias (Weick, 1993). The use of real-time observation notes in the field, can contribute to reduce this limitation.

Hence, efforts are made to meet research quality criteria. Yet, as with all research, limitations are also present. These, however, are likely to differ depending on the opinions and perspectives of the person judging the study. It is likely that another researcher would be intrigued by other parts of data and, thus, write a different dissertation. Caution must be undertaken with regard to making broad generalizations of the findings. This study cannot state whether these findings will hold in other PSFs or beyond such firms. Neither is it the aim of this study to generalize in a statistical manner. Rather, this study has sought to make transferability judgments possible by providing a sufficient base to permit comparisons with other settings. Hence, generalization is dealt with by describing considerations and proceedings in order to lay the research open for others to judge its usefulness and to make applications and replications elsewhere.

Finally, the thesis closes with suggestions for future research avenues.

## **9.6. Suggestions for further research**

This study has addressed the development of competence as a potential strategic resource for the value creation and competitive ability in professional service firms. Some surprising results came out. Whereas PSF and RBV literature, as well as society at large, show a tremendous interest in competence as vital to firms' innovation, value creation, and competitive ability, the PSFs studied show remarkably little interest in the actual development of competence. Still, the firms are doing well. Thus, the very centrality of CD in PSFs can be questioned. Questions to pose in future research are, for example: How important *is* CD to PSF competitive ability? Are partners/owners/employees too focused on short term profit (maximization)? Is it sufficient to create an image of CD as prominent and seriously accounted for in order to maintain a good reputation – at least in a short term perspective?

A consistent relationship, although far from ideal, between CD processes and generic types of PSFs is suggested. However, further investigations are needed in this area in order to develop a deeper understanding of these relations, as well as their connection to competitive ability. In this respect, it seems interesting to follow up on the findings of the four different CD processes identified in this study. Particularly the differences between the CD processes in the two type C firms, the creative problem solving based firms, indicate that there can be a variety of alternatives within the main

categories of PSFs. Maybe there are also examples of other types of generic strategies and CD processes beyond those addressed in this study? It can be fruitful, thus, to select PSFs based on the classifications of type of generic strategy. Moreover, since this study identified both similarities and differences within and between the CD processes in the four firms, further comparisons between uniqueness and commonalities across firms are suggested in order to understand the value and rarity of resources. This supports the notion that if one considers value to lie in the uniqueness of firms, more fine-grained studies of details and how they relate to firm performance seem useful. Also, this is important because even though the CD processes may share many similarities, as in this study, the competences and resources that develop through these processes can be very different.

Further investigation is also suggested regarding the relationship between individual CD and firm performance. In this respect, as part of the larger project to which this doctoral study is connected, a follow up survey based on the findings from this inquiry is conducted by a team of researchers. Results from the survey are published in *California Management Review* (see Skjølsvik, Løwendahl, Kvålshaugen & Fosstenløykken, 2007). Building on this current qualitative research, the survey is designed to include relatively many individuals at a variety of levels, not only restricted to a managerial one. People were chosen based on variety in terms of experience, education, tenure, position etc. The total number of people who responded was 218 (out of a sample of 250 professionals), representing twenty PSFs, four firms from each of five industries. Building on Bontis, Crossan, and Hulland (2002), the aim of the follow up study is also to contribute to an understanding of the relationship between the utilization and development of competence at individual and collective levels in multiple PSF industries, and how this may relate to potential strategic advantages for the firm. The survey is not designed to investigate the relationship between learning in client assignments and support activities. How these arenas can supplement and complement each other for CD purposes becomes yet another research project.

In this respect, in PSFs, short-term income versus long-term strategic CD concerns can easily turn into a dilemma. Therefore, comparisons of firms in terms of their relative proportion of billable to non-billable hours do not provide particularly useful information. Moreover, if all hours are billable, both value creation and learning would risk being only short-term oriented, and, thus, not strategic in nature. A PSF that has carefully invested in relevant competence for the future is likely to be better prepared for competition in a rapidly changing environment in the long run than firms with less emphasis on CD. These aspects also spur future research into the

relationship between short-term productivity and long-term CD, in single and comparative studies of PSFs as well as in other types of businesses.

Improved understanding of the processes of learning by doing through project-based work is also proposed. Here, it may be inadequate to only ask people what they have learned during a given period of time, as people tend to underestimate the learning effects of informal learning. Other complicating conditions are the tacit, and difficult to capture, elements involved in informal processes. Surveys and interviews may not represent proper approaches for the investigation of these aspects of learning, which cannot easily be explained in words or numbers. Rather than relying on conventional research approaches, a practice perspective which enables closeness to informants, and a design that includes managers and others in organizations as research partners in order to gain a deeper understanding of work activities and relations seems promising. In this respect, it seems fruitful to further conduct comparative studies not only among PSFs, but also with regard to comparisons between PSFs and firms defined as non-PSFs. Such investigations could include firms which are particularly good at competence development, and firms which do not invest substantially in the CD of their employees, based on training and/or learning by doing. Even though the degree of knowledge “intensity” may differ between firms, this does not imply that people in firms producing physical goods do not make use of knowledge in their activities and that they do not or cannot compete on the quality of their competence (Zack, 2002), or their CD processes. Quite to the contrary, it would be of interest to compare sophisticated CD processes in different types of firms in order to facilitate potential cross learning.

Another dimension which motivates further investigation, is the role of the client in CD processes of PSFs. As increasing numbers of workers operate in service roles, the boundary between employees and clients becomes less pronounced. The service literature on e.g. airlines and fast food chains, recognized decades ago that services are produced in interaction with clients. What is new in this study is that the client is also brought into CD in PSFs. Since it is not obvious that a client who is “best” from an operational or profit-generating point of view is also “best” with regard to CD, it seems important to examine which client characteristics influence CD in different types of PSFs. Future inquiry is further suggested into (i) the nature of client relationships, (ii) the interaction with clients - real time, and, (iii) to do this from a dyadic point of view is recommended. In addition, the importance of external network contacts to CD processes was identified. Both client and external network relations raise questions of whether it makes sense to talk about an intra-firm perspective when it comes to PSFs? Moreover, the study showed that relationships were mainly personal, one-to-one relations,



developed and nurtured through individual initiatives. Maybe future research would benefit from investigations of processes and relations at the point of exchange, de-emphasizing traditional notions of organizational borders? Literally speaking, it seems as if such borders which limit the range and scope of an organization, also keep us from gaining both a deeper and a broader understanding of CD processes in PSFs. This signals a need for a greater emphasis on PSF client- and network interactions – with regard to PSFs as well as e.g. industrial network research.

The finding that the CD facilitators and the CD constraints do not represent the flip side of each other, suggests refined research into these conditions, as well as their impact on firm performance. In this respect, the facilitators and constraints to CD need to be treated separately as well as in relation to each other. Further, the refinement of the resource base to include newcomer and old-timer competence, suggests research not only into when, where, and how competence-based resources may be valuable, but also into who, or what types of actors, are relevant for value creation in various settings and activities.

This study also sheds light on Itami's (1987) development of invisible assets through a qualitative study of CD in PSFs. However, further investigation is needed into the development of other invisible assets, especially reputation, in such firms. In addition, further inquiry into the development of invisible assets in other types of PSFs, as well as KIFs or firms in general, seems useful.

Questions which remain to be answered are, for instance: What is the nature of colleague, client, and network contact interactions beneficial for *different types* of actors in a variety of PSF settings? How do professionals get access to the "right kinds" of projects, at the right time and at the right level, in order to improve work related competence? How do managers balance individual competence development needs with overall strategic goals? And, what is the relationship between people's learning at work and firm performance? With these regards, further research into practice and the interplay between different levels of analyses is suggested. In addition, PSF and strategy studies based on more interpretive, as well as critically oriented, paradigms would also be recommendable.



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## Appendix 1: The interview guide

Below follows a description of the interview guide used during the empirical inquiry. The interview guide is a collection of examples reflecting a variety of questions. Since each particular informant and situation required adaptation depending on the themes that emerged and topics relevant to the informant, the interview guide represents an approximate description. For example, follow up questions to senior project leaders differ from those asked new hires, while questions to the CEO also emphasize e.g. firm strategies, market positioning, branding, and overall visions and goals. Hence, the interviews reflect variety and individuality. As such, this interview guide illustrates examples of topics and questions central to the interview process.<sup>57</sup>

### **Introduction**

Introduction to the study and presentation of myself.  
About the study, and the selection of firms and informants with an emphasis on variety (e.g. educational background, experience, gender, tenure, and so on).  
About confidentiality and the use of information and empirical material.  
About the tape recorder and the returning of interview transcripts for comments and corrections.

### **Personal background**

Please tell me about your background (e.g. work experience in this firm, prior work experience, education, work tasks, position, career to date, why did you choose to work for this firm, how did you become an employee, etc.).

### **The firm and work context**

Please tell me about this firm (e.g. main goals and activities, history, competitors, clients, strategy, strengths and weaknesses, key resources, etc.)  
How will you characterize the industry in which the firm operates/competes?

### **Competence development**

Please describe your work.  
In your opinion, are you involved in any kind of competence development? (in current position, in previous positions in this firm, in previous positions in other firms, outside of the work arena, personal networks?) If so, can you elaborate on these efforts?  
What is your view/understanding of competence? Learning? Competence development?  
In your opinion, have you developed your competence since you started working in this firm?

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<sup>57</sup> The interview guide presented here represents a translated version of the original in Norwegian. All interviews were conducted in Norwegian.

If so, how, what kind of competence, in what areas, situations or activities, when, where, with whom, why? What kind of impact does this have on your work etc?  
What are essential elements of competence in order for you to do a good job?  
Can you tell me about a successful and an unsuccessful event/situation and their potential impact on learning?  
Do you keep yourself updated on your personal competence? If so, how?

At work, how does collaboration with others take place? Do you collaborate with people outside the firm?  
Do you develop competence together with others? If so, how?  
What kind of competence is important for different people in different positions?  
What is done to develop such competence?  
Do you develop competence as a by-product of service delivery?  
Does service delivery involve competence development from you and to the clients?  
How? Impact?  
Does service delivery involve competence development from the clients and to you?  
How? Impact?

What is done from the firm's side to orchestrate or develop your competence?  
In your opinion, are there any strengths of your firm regarding competence development? If so, what are those?  
Are there any weaknesses of your firm regarding competence development? If so, what are those?  
What is done to support competence development? How? What could be done differently, done better?  
Are there any factors that facilitate your competence development? If so, please describe these.  
Are there any factors that constrain your competence development? If so, please describe these.

Do you/the firm make any efforts/investments in competence development? If so, what kind, how, by whom, for whom?  
Does IT play a role in competence development?  
What is done to attract, recruit, and retain people? What about dismissals?  
In the future, what are the most important challenges in terms of competence development, for you and for the firm as a whole?  
Ahead, what are the most important challenges for the firm as such?

#### **Additional comments**

Is there anything you would like to refine or add to help me understand competence development in your company? What did I forget to ask about?  
Are these questions of relevance to you? Could you suggest any other people or firms that I should contact?  
What is your age and marital status? Do you have children?  
Close the interview. Repeat the returning of the interview transcript, and how this will be followed up.

Thank you !

## Appendix 2: Overview of informants

Tables 31-36<sup>58</sup> give an overview of the informants in each case-firm in terms of work experience, education, gender, work area/position, and age. Work experience is divided into experience in current position in current firm, total experience in current firm, and previous experience in other firms. The latter is further divided into experience within the same type of industry/in closely related work (marked 'x'), or in a different type of industry/different type of work (marked '\*'). No previous experience is indicated by an empty space. Education is for people in CREO and INFO divided into 1-3 years and 4-7 years of university and equivalent education. In TEKNA and ENGY, education is divided into engineer (marked 'E'), civil engineer (marked 'CE'), and other types of education (marked 'O'). In terms of work area/position, people in CREO are divided into whether they work as consultants, in the studio part, or with other kinds of work. People in TEKNA and ENGY are divided according to the division they work in, whereas people in INFO are distinguished according to the kind of position or job title they are employed as. The age spans range from 30-40 years and 41-50 years of age in CREO, TEKNA, and ENGY, whereas in INFO the age spans range from 20-29 and 30-40 years of age. The individuals are presented in order of appearance in the interviews. This means that 1 is the first person interviewed, 2 represents the second person, etc.

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<sup>58</sup> Two managers, one from TEKNA and one from ENGY, were only involved in the initial interviews, and are, thus, not included in these tables.

Table 31. Informants in CREO

Work experience and education (no of years)		Women						Men					
		Consultant		Studio		Other		Consultant		Studio		Other	
		Age											
		30-40	41-50	30-40	41-50	30-40	41-50	30-40	41-50	30-40	41-50	30-40	41-50
Current position	1-3			1				7		9			
	4-7	6	3	2								4	
	8-11												
	12-	8	11				5						
Current firm	1-3			1				7		9			
	4-7	6	3	2								4	
	8-11												
	12-		10				5						
Previous same industry x Different industry *	1-3			2*				7*		9*			
	4-7	8*	10*	1x								4*	
Education	8-11	6*					5*						
	12-		3x										
	1-3	8	3	1			5					4	
	4-7	6	10	2				7					
			11					9					

Table 32. Informants in TEKNA

Work experience and education (no of years)		Women		Men							
		Transportation and spatial planning		Structures		Machine		Electrical systems		Civil works	
		30-40	41-50	30-40	41-50	30-40	41-50	30-40	41-50	30-40	41-50
Current position	1-3			13 <sup>59</sup>				19	16		20
	4-7	12	18			14					
	8-11 12-				17						
Current firm	1-3			13				19			
	4-7	12	18	15							
	8-11 12-				17		14		16		20
Previous same industry x Different industry *	1-3				17*						
	4-7			15*				19x	16x		
	8-11 12-										
Education	E										
	CE	12	18	13	17		14	19	16		20
	O			15							

<sup>59</sup> This informant is 28 years of age.

Table 33. Informants in ENGY Oslo

Work experience and education (no of years)		Women			Men					
		Infrastructure			Building construction	Manufacturing		Other		
		Age								
		> 30	30-40	41-50	30-40	41-50	30-40	41-50	30-40	41-50
Current position	1-3							23 <sup>60</sup>		
	4-7	22	26	28	29				25	21
	8-11					24				
	12-									
Current firm	1-3							23		
	4-7	22	26	28	29				25	21
	8-11					24				
	12-									
Previous same industry x	1-3	22*								
	4-7		26x			24*			25*	
Different industry *	8-11			28x	29x			23x		21*
	12-									
Education	E			28	29			23		
	CE	22				24				21
	O	27	26						25	

<sup>60</sup> This informant is 54 years of age.

Table 34. Informants in ENGY Trondheim

Work experience and education (no of years)		Men		
		Infrastructure		
		Age		
		30-40	41-50	51-60
Current position	1-3	33		30 31
	4-7		32	
	8-11 12-			
Current firm	1-3	33		31
	4-7		32	
	8-11 12-			30
Previous same industry x Different industry *	1-3	33x		
	4-7		32x	
	8-11 12-		32*	30x 31*
Education	E			30
	CE	33	32	31
	O			

Table 35. Informants in ENGY Tønsberg

Work experience and education (no of years)		W	Men	
			Infrastructure	
			Age	
			30-40	41-50
Current position	1-3	36		34
	4-7			
	8-11 12-		35	37
Current firm	1-3	36		34
	4-7			
	8-11 12-		35	37
Previous same industry x Different industry *	1-3			34x 37x
	4-7		35x	
	8-11 12-	36*		
Education	E	36	35	37
	CE			34
	O			

Table 36. Informants in INFO

Work experience and education (no of years)		Women						Men					
		Consultant w client r <sup>61</sup>		Consultant		Project leader		Consultant w client r		Consultant		Project leader	
		Age											
		20-29	30-40	20-29	30-40	20-29	30-40	20-29	30-40	20-29	30-40	20-29	30-40
Current position	1-3		41	43		44 46	47		49	42 48	39		
	4-7								40	45			
	8-11 12-								38				
Current firm	1-3		41	43		44 46	47		49	42 48	39		
	4-7								40	45			
	8-11 12-								38				
Previous same industry x Different industry *	1-3			43*		44*				42* 45* 48*			
	4-7						47*		38* 49*		39*		
	8-11 12-		41*										
Education	1-3		41	43		44 46	47		38 40	42 45 48			
	4-7								49		39		

<sup>61</sup> Consultant with client responsibility.