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Katja M. Hydle
BI Norwegian Business School

Ragnhild Kvålshaugen
BI Norwegian Business School

Karl Joachim Breunig
BI Norwegian Business School

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Katja Maria Hydle

Ragnhild Kvålshaugen

Karl Joachim Breunig

BI Norwegian Business School

0442 Oslo, Norway

Email: katja.hydle@bi.no

Introduction

This study identifies situated practices in communities that provide professional services across borders. The practices are situated in transnational professional service firms (TPSFs), in which distributed experts collaborate to provide services to customers (Faulconbridge, 2007, 2008; Greenwood, Morris, Fairclough and Boussebaa, 2010). The multiplex TPSFs are integrated through communities of professionals, which may overlap in terms of specialisation, industry, service lines, client teams, etc. (Greenwood et al., 2010). One way in which TPSFs overcome spatiality and become connected is through transnational communities (Jones, 2005). Lave and Wenger (1991: 98) define a *community of practice* (CoP) as "a system of relationships [among] people, activities, and the world; developing with time and in relation to other tangential and overlapping communities of practice." The engagement of professionals with and their participation in several communities can be explained through the CoP perspective (Wenger, 1998).

Since the seminal works on CoP were initially published (Lave and Wenger, 1991; Wenger, 2000; Wenger, 1998), this idea has been developed into an umbrella concept, although with some missing specifications (Amin and Roberts, 2008; Storberg-Walker, 2008). For instance, the CoP literature is somewhat insensitive to the context in which situated practices actually occur (Amin and Roberts, 2008; Handley, Sturdy, Fincham and Clark, 2006; Roberts, 2006). Amin and Roberts (2008) indicate that spatial and

relational proximity cannot be reduced to co-location and face-to-face interactions; knowing in action can occur between geographically dispersed members. They identify four types of activities of knowing in action: three involve social interactions through primarily face-to-face activities, and one involves social interactions through technology (i.e., face-to-screen). Information and communication technologies (ICT) affect organisational learning (Argote, 2011) and foster virtual learning communities (Allan, 2007) and virtual collaboration (Boisot, 2011). Amin and Roberts (2008) argue that the use of the term CoP is unhelpful and indicate a need for a more heterogeneous understanding of the different types of situated practices. CoP drive learning and knowledge-reinforcing local ties. Thus, a view of CoP that extends beyond the local understanding to consider relational ties in terms of spatial and relational proximity is needed.

In light of this literature gap, we explore situated practices in communities where the participant experts are geographically dispersed, questioning the implications for knowledge and learning. We explore these situated practices in the context of professional service firms, which are extreme cases of knowledge intensity (Greenwood et al., 2010) in which learning and knowledge are keys to enhancing value creation (Greenwood, Li, Prakash and Deephouse, 2005; Løwendahl, 2005; Løwendahl, Revang and Fosstenløkken, 2001; Swart, van den Hooff and van Baalen, 2011). TPSFs have an

additional layer of complexity for knowing and learning, due to distance, virtual communication, and local incentive systems (Boussebaa, 2009; Boussebaa, Morgan and Sturdy, 2012). According to Bartlett and Ghoshal (1998), transnational companies must be locally responsive to achieve flexibility in operations. This flexibility results in complex configurations of distributed and specialised assets and capabilities. In the transnational model, knowledge is developed jointly and shared worldwide. The strategic capabilities of transnational companies include global competitiveness, multinational flexibility, and worldwide learning (Bartlett and Ghoshal, 1998).

The transnational solution is well-described at the firm level. In this study, we explore how the transnational solution is handled at the activity and practice levels for service provision (Orlikowski, 2002; Schatzki, Knorr Cetina and von Savigny, 2001). The ambition of the paper is to generate theory regarding situated practices of knowing and learning in a transnational setting. Hence, we ask: How is the provision of transnational services enabled through practices, and what are the characteristics of situated practices in communities that provide transnational services?

This paper considers the provision of transnational services by locally situated professionals collaborating across different sites. We identify two types of CoP for transnational service provision in TPSFs: *communities of task* (*CoT*) and *communities of*

learning (*CoL*). CoT are characterised by service relays, in which different people work on one leg of a project and send the work forward to the next leg and person. CoT encompass employees involved in particular work tasks and activities, as well as how those activities are distributed among people and locations. In contrast, CoL are characterised by virtual servicing, whereby people share and create knowledge across geographic locations and time.

Transnational communities and practices

In a transnational context, the CoP characteristics such as knowing, learning a sense of joint enterprise, mutual engagement, and a shared repertoire of communal resources (Wenger, 2000; Wenger, 1998) pose some challenges. There are challenges in developing a 'joint enterprise' and being involved in 'mutual engagement' when face-to-face interaction is replaced by interaction across different locations and time zones, as in TPSFs (Jones, 2005, 2007). Another challenge involves bringing in and engaging the right expert when employees do not necessarily know each other, have not met, or are not located together. The provision of professional services requires deep and reflexive communication between the people involved in face-to-face interactions. This provision becomes difficult when the experts are not co-located (Jones, 2007; Løwendahl, 2000; Løwendahl, 2005). Other challenges include building commitment to a joint enterprise when the employees are dispersed in different locations, developing

trust and understanding across cultural differences, avoiding internal power struggles and internal competition, among others (Fong and Kwok, 2009; Heizmann, 2011; Mørk, Hoholm, Ellingsen, Edwin and Aanestad, 2010).

Lindkvist (2005) argues that the original understanding of CoP (Lave and Wenger, 1991) does not directly apply to cases in which the work is temporarily organised in projects, knowledge is highly distributed, or there is limited time and space for knowledge sharing. He identifies two types of distributed and concerted actions in project-based organisations: knowledge collectivities involving learning through socialisation, and knowledge communities involving learning through problem solving. However, he does not elaborate on the relationship among these types or how they evolve, which we intend to do in the present study.

In organisation theory, the understanding of knowledge and learning has moved from a theoretical analysis of these concepts as organisational assets to an understanding of practice-specific knowing (Gherardi, 2000, 2001, 2009b; Gherardi, Nicolini and Strati, 2007; Orlikowski, 2002, 2010; Sandberg and Tsoukas, 2011; Tsoukas, 2000, 2009). According to Schatzki, a practice is "an open-ended, spatially-temporally dispersed nexus of doings and sayings" (2012: 2). Practice theorists understand practices as "embodied, materially mediated arrays of human activity centrally organised around

shared practical understanding" (Schatzki et al., 2001: 2). Transnational service practices are service provisions that rely on interdependent and specialised activities, a nexus of activities, commonly understood and performed by the actors involved, which are dispersed across locations and time and are often mediated through technology.

In the CoP literature, the underlying premise is that actors learn while doing (Lave and Wenger, 1991; Wenger, 2000; Wenger, McDermott and Snyder, 2002; Wenger, 1998; Wenger and Snyder, 2000). However, in recent CoP research there has been a theoretical shift from focusing on the community and learning to focusing on actual practices (Brown and Duguid, 1991; Gherardi, 2009a; Gherardi, 2009b; Handley et al., 2006; Roberts, 2006; Swan, Scarbrough and Robertson, 2002). Scholars suggest that the concept of CoP be reversed into practices of the community by placing practices at the centre stage (Brown and Duguid, 1991; Gherardi, 2009a; Roberts, 2006). Rather than focusing on communities as a context for learning, this shift motivates researchers to view situated and repeated activities from the contexts of how people learn and the social relationships among people and between people and the material (Gherardi, 2009a). A primary focus on practices and a practice-based approach require us to understand what people do in their everyday work and how different people's activities are organised (Orlikowski, 2002, 2010; Schatzki, 2012). In our cases, everyday work

consists of providing services across time and at different locations, both asynchronously and virtually (Orlikowski, 2002: 257).

Research design

The paper aims to understand how the provision of transnational services is enabled through practices. Qualitative data are useful for generating theory when the existing theory contains inherent contradictions (Graebner, Martin and Roundy, 2012), as is the case with CoP with a focus on local ties instead of spatial and relational proximity (Amin and Roberts, 2008; Lindkvist, 2005).

We purposefully selected cases in which we could observe the situated practice of communities that are dispersed across locations and communities that face the temporary organisation of work in projects (Handley et al., 2006; Lindkvist, 2005; Roberts, 2006). For the empirical investigations, we aimed to uncover how the provision of transnational services was enabled through practices in the two case firms (Eisenhardt, 1989; Yin, 1994). Multiple cases enable more robust theory building (Eisenhardt and Graebner, 2007).

The case firms, Verco and Newit, deliver expert engineering and technical services with a high degree of professional norms of conduct in an international context (Greenwood,

Li and Prakash, 2005; Løwendahl, 2005; Starbuck, 1992; von Nordenflycht, 2010). They often require collaboration between experts situated at different places to provide services to customers, and their work is organised in projects. Therefore, we considered these firms to be appropriate cases for investigating the research questions.

Verco has 300 offices in 100 different countries, with over 8000 employees representing about 90 nationalities. Their main objective is to provide expert services of consistent quality worldwide. Verco has international customers in multiple locations, such as the oil and gas industries, as well as customers in mobile industries, such as the shipping industry. Their customers require expert services with a high standard of quality wherever the customer is located or moving to geographically. Verco has developed several tailor-made ICT systems, has introduced systems to ensure equal quality worldwide, and has established common processes in all of its offices. We followed the internal information technology department (ITD), which supports all of the ICT systems and applications in the 300 offices. 'Customers' of the ITD are the employees of Verco, who, in turn, rely heavily on the applications to provide services to Verco's international customers. Although they provide internal services to internal customers, the internal customers pay fees for the services. Verco's customer information and each customer's service requirements can be found in computer desktop applications;

however, the information was retrieved from IT servers physically located in Oslo, Norway.

Newit has 21 offices in 14 different countries with 500 employees. A single service delivery to one customer may be undertaken from various places by different experts, depending on their knowledge and experience. Newit has local and international customers with global ambitions for their products. Due to its provision of testing and certification services for electronic devices, its customers need its expertise whenever there is a new product that will be launched on a national or international market. Products ranging from small electrical appliances to larger equipment have integrated electronic equipment that must be tested and certified for safety and electromagnetic compatibility. According to the national or regional market in which the product will be launched, there are different official standards and requirements with which the products must comply. Expertise related to different local standards and requirements is, to some extent, distributed among the different locations of Newit, although most of the Notified Body accreditations are held by the headquarters. Because the expertise is distributed in this way, contact is often required between the different offices at Newit when testing and certification services are delivered to a customer.

Data collection

Data were collected from 2003 to 2006. Data included the observation and analysis of written material and 104 semi-structured interviews of the two firms at sites in Oslo, Milan, Glasgow, London, Shanghai, Hong Kong, Shenzhen, Ottawa, and Dallas (Table 1). This multisite approach enabled us to uncover practices and understand their connections (Nicolini, 2009). The interviews were taped and transcribed. Our understanding of the interview information was supplemented with archival company documents, observations made during visits to different locations and laboratories, participation in company meetings, and other secondary data sources (e.g., company surveys). These data were imported into the NVivo program for coding.

Insert Table 1 approximately here

Coding and analysis

The data analysis progressed in several stages and involved a blend of inductive and deductive processes (Graebner et al., 2012). First, we wrote case stories every 6 months. The aim was to employ the thick description mode of analysis (Geertz, 1973). The data were presented to the top management and different groups at Verco and Newit, to

validate the veracity of the data and to enhance the trustworthiness of the analysis (Lincoln and Guba, 1985). Second, we examined the data in light of the research questions, specifically considering how service work was provided by the two firms. Third, we coded the collected material according to countries, units, and functions in the firms, work challenges as well as the service processes of initiation, provision, and delivery, as described by the informants. Fourth, we revised our coding scheme based on how employees differentiated between being involved in collaboration locally or across locations. Fifth, we considered extant literature on CoP (Brown and Duguid, 1991; Wenger, 2000; Wenger, 1998) and used the CoP characteristics of knowing, learning, mutual engagement, joint enterprise and shared repertoire in a more deductive analytical approach. Using our empirical material and these five characteristics of CoP, we found variations within each characteristic as follows (and as illustrated with quotes in Table 2):

- **Knowing** in different areas of expertise versus within the same area of expertise: when experts providing transnational services required assistance, they approached either experts with different areas of expertise or colleagues with more experience in the same field.

- **Learning** by doing versus learning from colleagues: during service provision, experts learned tasks by doing and experimenting; when they exchanged experiences, they learned from each other and through collective reflection.

- **Mutual engagement** in a planned versus emergent way: during service deliveries, social collaboration was planned; when exchanging knowledge, collaboration was usually task-dependent and emergent.

- **Joint enterprise** in a formal versus informal manner: for transnational service provision, formal routines and processes were used and followed; when exchanging information, the contact was informal and more personal.

- **Shared repertoire** using customised versus standardised tools: transnational service delivery work was performed with customised ICT workflow systems; knowledge sharing occurred by standard ICT to communicate and facilitate interaction.

Through the conceptualisation of these five elements of CoP in TPSFs, we found that the situated practices used two opposing dimensions to deliver transnational services: namely, work-sharing and knowledge-sharing practices. Finally, we turned to social practice theory (Schatzki et al., 2001; Schatzki, 2012) which helped in understanding these two practices of work-sharing and knowledge-sharing. Comparing the findings from the two case firms (Eisenhardt and Graebner, 2007), we found that work-sharing was performed in both firms, while knowledge-sharing was regularly performed at different levels in Verco, but only to a limited extent in Newit. There was a significant variation in terms of formality, where participation in work-sharing was mainly formally assigned, while for knowledge-sharing the participants were mainly informally asked. Hence, participation in Verco was both formal and informal, while in Newit it

was mainly formal and linked to work-sharing. These concepts and findings will be described in the next section.

Findings

The observed practices of transnational service provision are elaborated below. Some representative quotes from the data related to the five categories are given in Table 2. We first present the work-sharing practices in the two case firms, followed by the knowledge-sharing practices.

Insert Table 2 approximately here

Communities of tasks (CoT)

In Verco, the ITD included expert groups for the different applications situated in Oslo; the global help desks (GHDs) situated in Oslo, Houston, and Shanghai; and the local help desks (LHDs) located in 21 different places to cover various time zones and languages. The LHDs support everyday ICT use by employees located at every location. Whenever there were advanced-level questions or application-related problems, the

question was forwarded to the GHDs and, potentially, to particular expert groups. About 80% of all questions were solved by the LHDs. The GHDs generally received about 150 requests every 24 hours, of which 20% were forwarded to the expert groups. In 20% to 50% of these cases, the tasks were so difficult that more than two persons from the expert group were needed to solve the issue. We provide a typical example of this situation.

Singh,[1] an employee stationed in Calcutta, could not open a customer information file and also needed specific checklists to follow for an international customer who required local engineering services. When Singh tried to access two different applications using database servers located in Norway, the applications and the PC froze. He called an LHD employee, Ralph, for help. Ralph looked at the specific tasks and provided assistance to help Singh prevent the PC from freezing. For the remaining problem, Ralph sent the incident to the Shanghai GHD. Yin in Shanghai closed the customer file that another employee had left open, so that Singh could access the information. The checklist problem was forwarded to an expert team in Oslo, because the problem was related to different modules and servers. Two experts, Solveig and Arne, solved the problem, and Singh was notified by email that the entire problem had been solved.

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[1] Pseudonyms have been used throughout to protect individuals' privacy.

Singh only had direct contact with Ralph, but he received an automated email from Solveig and Arne indicating that the problem had been solved.

In this case, the LHD, GHD, and expert team were contacted, and the problems or tasks were forwarded through the specialised ICT system, Solvol, for IT support. By using Solvol, Ralph, Yin, Solveig, and Arne followed the formal service delivery process and forwarded the tasks to the appropriate level of expertise. Together, the employees performed the common practice of delivering the service, wherein each actor performed tasks that were part of the service. Each member had his or her own function and expertise and knew what to do. The various tasks were handled via a so-called *service relay*, in which each task was handed stepwise to the appropriate expert for resolution. The experts did not share knowledge but shared tasks and, thereby, formed a community for delivering tasks.

Another example of CoT was identified at Newit, which had four different levels of expertise with associated tasks and standards within one product range. These levels were: testing with assistance; testing independently; verifying others' testing; and certifying others' verifications. Offices differed regarding their levels of expertise and capabilities with respect to performing the various steps. Newit had the capacity to perform the first and second levels of testing at all of its offices. The third level of

testing (verification for the differing standards) was available at several offices. The fourth level (certification) was only available in Oslo and Ottawa.

In a typical certification process, a customer contacted a salesperson, who then provided the details to a test engineer. The test engineer performed the testing, and a more experienced engineer verified the testing results. The results of the verification were sent for certification, and certification papers were issued. From the point of service initiation to the final delivery, the customer was only in direct contact with one salesperson. The service delivery, however, was performed by five experts who did the testing, verification, and certification. All of these experts were supported by the customised workflow system, Express, which was partially made available to customers by extranet. The service execution was divided into different tasks, with one expert assigned to each task. The experts themselves did not necessarily communicate with each other, except through the Express system. Occasionally, there was communication between the tester and the verifier when the test results were verified.

The service work practices were very similar at Verco and Newit. Different sets of tasks were performed as a service relay, forming CoT among all of the actors involved. The experts were members of the CoT due to their functions in the firm. To become a member of the CoT, they must have expertise related to the task at hand and a formal

function related to their expertise; employ the formal process of work provision; and have available time or be in the appropriate time zone. Joint enterprise involved sending the service to the next function. Mutual engagement consisted of sharing the work. Each expert sent the remaining part of the service to the next expert by using the tailor-made ICT system, which was the shared repertoire. One of the actors in the service delivery process had direct customer contact, but most of the experts delivering the service did not necessarily talk to or meet the customer.

Service relays

The above-mentioned service deliveries illustrate the work practices that were followed and enabled service relays of tasks. The transnational service delivery functioned as a service relay: each leg of the relay was performed by a local actor, and the next relay may be performed somewhere and sometime else. Each leg was performed by experts with different functions, with one leg of the relay per needed expertise. At Verco, depending on the complexity of the ICT solution needed and the urgency of the business application, the service relay may have moved faster or there may have been more than two legs. At the LHDs, the experts comprised an outer core that received tasks that were local or related to functionally or regionally dependent expertise. The expertise came from in-depth ICT knowledge and was brought to the specialised business application

within the company. An inner core was composed of expert groups that were situated in one place and received tasks from the entire global organisation.

At Newit, as a customer sought to access more markets with an electronic product, more testing and certificates were needed. Each locally situated expert performed the same work, regardless of the source of the task. An outer core of expertise was comprised of different locally situated testers, who considered national, regional, and international standards and regulations. An inner core of experts consisted of certifiers.

The use of distributed cores of experts at the two firms ensured delivery of highly specialised services. The distribution of activities and tasks was related to where the experts were situated. Service relays involved providing special functions and expertise, sharing work, sending the service to the next function, using the tailor-made ICT system for service deliveries, and learning through task provision. Table 3 summarises the characteristics of the CoT and gives representative quotes from the data.

Insert Table 3 approximately here

In the next section, we present the knowledge-sharing practices observed and analyse their implications for service-work practices in a transnational setting.

Communities of learning (CoL)

We observed several knowledge-sharing practices in service provisions. At Verco, employees working at the GHDs in Shanghai, Houston, and Oslo knew each other well. They had daily transfers of responsibility for global help services, whereby phones, email, and other forms of communication were switched from one of the three to the next. The changes were made at 4 p.m. in one place to 8 a.m. in the next place. Experts from all three offices shared knowledge and experiences through descriptions distributed by email. They met occasionally at the training headquarters, such as when applications were changed or new systems were introduced. Experts working at the GHDs performed the same function within different time zones and engaged in informal exchanges of information and knowledge.

The IT 'super users' comprised a second type of knowledge-sharing community at Verco. Super users were regular employees with a high level of IT knowledge. For instance, a super user in London was known in Dubai, Oslo, Milan, Houston, and Barcelona to be the most knowledgeable person about specific sets of problems and was contacted whenever needed. Super users were especially busy during the initial

introduction or update of an application. This type of dynamic community was able to function across time and location.

Another community in Verco that had different knowledge-sharing practices was formed by the LHD employees. "We have experience exchange seminars, every year. One region invites and we have cases showing different ways of doing things," explained Antonio, a LHD engineer in Milan. Specifically, the Asian LHD workers were in daily contact with each other through email and instant messaging to exchange knowledge, although they did not share work tasks as they did with the GHD.

These communities served as outlets for the knowledge-sharing practices at Verco. People participating in these communities had initially met physically during formally initiated gatherings, training sessions, and physical meetings. Verco's management stressed that both formal and informal organisations were necessary to deliver transnational services successfully, by involving the right expertise without delays, and for the organisation to run smoothly across borders. Managers actively and passively supported different knowledge-sharing communities, by holding formal gatherings of people from different locations who performed the same function; introducing incentive systems for sharing knowledge; and initiating formal training between people at different locations. The communities at Verco were all composed of people in the same

function at different locations who needed to share information and knowledge with colleagues to perform their work and who used ICT to communicate. The knowledge-sharing communities in Verco were extensive and well-supported by management.

In Newit, we did not encounter many knowledge-sharing communities, apart from those at the management level. The top management, representing the different locations and divisions, met once or twice a year to share information, set strategic goals, and socialize. When necessary, they contacted each other by phone or email. Among the other employees, the exchange of knowledge and information was rare, aside from that during formally initiated training. We encountered a few employees who knew each other and contacted each other when necessary. We also met some expatriates who functioned as boundary spanners between different locations. However, from local sales personnel to testers and verifiers, there seemed to be an unfulfilled need to share knowledge and form informal networks.

One of the Newit offices with the best scores on employee satisfaction, work quality, customer retention, and economic margins had common weekly breakfast and lunch arrangements, informal learning sessions between employees during lunch, and spontaneous gatherings for knowledge sharing. Nevertheless, they expressed a desire to exchange experiences with their counterpart colleagues from other offices. However,

given that they did not know and had not met each other face-to-face, communities were not formed. Newit, when compared with Verco, had the formal processes in place, but the necessary informal networks and communities were absent, even though they had been requested.

The consequences of not having informal networks and communities were quite visible in Newit compared with Verco. Because few employees had met their colleagues working at other locations, there was less sharing of knowledge, experiences, solutions, and systems information at Newit than at Verco. Consequently, even though there were integrated global processes, different local practices were found at the various locations of Newit. We found several instances in which problems had to be solved twice, because information was not shared and consistency was not maintained by using the same solution in all locations. This duplication led to inefficiencies in the service delivery. One reason for the duplication of local solutions was that local staff believed that they had a unique challenge regarding a specific service compared to the other locations. Thus, Newit developed multiple solutions, due to a lack of knowledge-sharing practices. Although Newit's strategy of implementing best practices over the entire organisation was clear, the employees could not do so when they did not know what to share or with whom to share it. This situation existed in spite of their explicit

transnational strategy, which, if followed, would have ensured that the knowledge was developed jointly and shared worldwide.

Virtual servicing

In addition to the service relays provided by CoT, knowledge exchange could occur between experts with similar functions in CoL. This knowledge exchange, which we denote as *virtual servicing*, refers to the exchange of knowledge and experiences within the CoL and the employees' mutual engagement, while distributed in time and location and facilitated by ICT.

Whenever experts within Verco needed help, they used their shared repertoire, which included synchronous technology (e.g., instant messaging systems) or asynchronous technology (e.g., email), to ask questions, obtain advice, or discuss a solution to a problem. For these employees, the CoL functioned akin to virtual servicing. In practical terms, experts within a CoL did not necessarily talk to or see each other; they only received pieces of text through documents, emails, chat, etc. The communication was informal, with the pieces of text or messages becoming an internal 'how-to', allowing staff to perform their everyday work better. The incentive that they had to asking for help or advice was that of potentially performing their work more effectively. The incentive for providing advice to others was their knowledge that next time, they might

need advice. In addition, the people who participated in CoL had become personally acquainted through formally initiated social gatherings. Table 4 summarizes the characteristics of CoL and gives some representative quotes from the data. Virtual service included providing expertise to people within the same function or with the same expertise; sharing knowledge; asking and mentoring people within the same function; using standard ICT to communicate; or engaging in direct person-to-person communication and learning from the community.

Insert Table 4 approximately here

Interdependent communities

In transnational service provision, we found two types of situated practices of CoT and CoL. CoT occurred when experts shared work, whereas CoL were involved in knowledge sharing. Participation within the communities was seen through service relays and virtual servicing. Table 5 summarizes the characteristics of CoT and CoL.

Insert Table 5 approximately here

The two types of communities had several interdependencies. At the individual level, experts participated in several communities, depending on their functions, roles, and expertise. An individual expert received tasks and sent off work to one group of colleagues, while asking questions and providing answers to another group. These different groups of colleagues constituted various communities. The situated practices of service provision and the use and participation of experts were stable within the communities, regardless of the number of service projects. Table 6 summarises the characteristics of the interdependencies between CoT and CoL with the five elements of the CoP.

Experts displayed their knowing by providing a special function or expertise in CoT or by providing expertise to people within the same function or expertise in CoL. CoT provided expertise globally to perform service work as effectively as possible across time zones, countries, and internal organisational units. Bang, a Verco engineer in Shanghai explained: "Due to our organisational structure, we do not share information and knowledge. Without knowing, it is hard to answer and be proactive regarding the needs for future development."

CoL enabled experts to develop their expertise and specialisations further. CoL had an important function, but without CoT, the service offerings and deliveries could not be provided across borders. By sharing only experiences and knowledge and not tasks, service firms may be unable to attain their ambition of achieving the transnational model of being locally responsive while sharing worldwide. Companies with CoL and poorly functioning CoT were unable to take full advantage of economies of scale, failed to exchange services and tasks in an optimal way, and arguably had lower sales volumes because they did not sell services as a single company.

By sharing work in CoT and sharing knowledge in CoL, experts demonstrated mutual engagement. At Newit, we found that all locations had local practices for certain tasks within the service relay in their CoT and had developed local systems and Excel sheets to solve certain coordination needs. Barry, a senior engineer at Newit Ottawa described: "...when the thing comes up we search...[the] local search archive....I check my emails, my colleagues are looking...independently...using the time of three instead of one...Though we should make a common archive..."; "I now have an email box full of interpretations that I share with my colleagues (locally)...." Because they did not have different types of CoL that functioned well, they could not share the service experiences and knowledge globally.

Without CoL, individual CoT began to outdistance each other by performing better on similar functions than other communities, by using new, unshared practices, local solutions, or different alternatives. Gerry a Newit manager in the USA explained: "Newit Korea is using our competitor in California." CoT without CoL lost economies of scale because they did not share service experience or knowledge globally. They showed increasing local variations of practices and systems, because they did not share experiences within CoL or align their efforts.

Experts displayed joint enterprise when they communicated while sending a service to the next function in CoT and while asking and mentoring people within the same function in CoL. Brit, a manager from Verco explained: "We have a matrix of responsibility: Every person is both responsible per office and per theme. There are 9 people in 9 places who are the main contacts to ensure physical and local demands." Eddie, a Verco engineer further explained: "We have good relations with the team in Norway. We not only have a name, but a face. Ole. The only thing we need is that the team maintains the knowledge." Therefore, CoT and CoL were mutually dependent. For TPSFs to deliver globally integrated services, they had to be able to use and deliver expertise through tasks and knowledge, regardless of time and location.

The shared repertoire of the experts was reflected in their use of a tailor-made ICT system for service deliveries and common practices for service relays in CoT. Jens, a Newit manager from Oslo explained: "There are benefits with the processes becoming independent of where an expert is located and operational. The challenge is to know who has the competence and who does what. Express will help. Express will always be adapted in order to use it as a system and not make parallel systems locally." They used a standard ICT or direct person-to-person contact for communication, with different practices used for virtual servicing in CoL. Ann, a senior engineer from Verco explained, "It is problematic if we make processes that demand face-to-face interactions because we are located worldwide; if our processes demand physical closeness, we have a problem."

The experts learned through task provision in CoT and through colleagues in CoL. Because experts were geographically separated, an explicit plan was needed to ensure the existence of both types of communities, in order to perform the work (CoT) and provide learning opportunities (CoL). CoL did not spontaneously emerge across locations, but had to be formally initiated through meetings, because the experts did not otherwise know of each other. Through the management's initiation of formal meetings, gatherings, and training, the firms created the potential for CoL to be formed and nurtured, which was important for executing and performing the services. Marco, a

LHD engineer at Verco Milan explained: "We had one gathering, then we understood the system, we learned a lot. It is a level of meeting up—we should at least do it in Europe! This is important in helping to learn about new projects, share experiences, find out how we are working; build relations with IT managers to harmonize how we work. The costs of such meetings would easily be offset by better working methods and easier communication." CoL improved the practices and the knowing that are were applied in CoT. Without common understanding and knowing developed through CoL, the company became less integrated, used increasing numbers of local solutions, and performed services according to local practices, which, in turn, affected their ability to pursue consistent transnational strategies.

Insert Table 6 approximately here

Discussion and implications

This article has addressed two research questions: How is the provision of transnational services enabled through practices, and what are the characteristics of situated practices in communities that provide transnational services? Starting with situated practices, we identified and compared two main patterns: CoT and CoL. We showed that CoT enhance service deliveries by enacting knowing (service relays), whereas CoL enhance

service development by sharing know-how (virtual servicing). Our empirical findings show that there are two complementary and interdependent types of communities with different situated practices.

The nature of these practices extends our understanding of CoP in three ways. First, according to Wenger, membership in a community is defined through participation. Although members are participants in both CoT and CoL, these communities differ in their formality. Within CoT, members are formally assigned throughout the community, and the practices are task-to-task oriented. Within CoL, members are informally requested within the communities, and the practices are people-to-people oriented. CoL are typically formed in an organic way (Lave and Wenger, 1991; Wenger, 1998). However, this organisation may not occur in companies where people with similar interests do not know each other, and need to meet and know of each other before they can share their experiences (Kauppila, Rajala and Jyrämä, 2011; Roberts, 2006). Thus, participation in CoT follows formal work processes, whereas participation in CoL implies that the participants know of each other beforehand, such as through formally initiated meetings.

Second, the main characteristics of CoP, knowing, learning, mutual engagement, joint enterprise, and shared repertoire, are all present in CoT and CoL, although differently.

According to Wenger, knowing is the act of "displaying competences defined in social communities" (2000: 226), whereas learning refers to the interplay between socially defined competences and experience. We found that knowing includes displaying different competences in CoT and similar competences in CoL, and learning includes learning from tasks in CoT and learning from people in CoL. CoT involve different areas of expertise, planned cooperation during mutual engagement, formal communication when engaging in joint enterprise, customised use of ICT when using shared repertoire, and learning by doing. CoL involve mainly one area of expertise, unplanned cooperation during mutual engagement, informal communication when engaging in joint enterprise, standard use of ICT when using shared repertoire, and learning from the community. There are also differences regarding formality and informality; in CoT, the cooperation is planned and the communication is more formal than in CoL.

We extend the understanding of CoP by identifying two types of transnationally situated practice communities, distinguishing between formal and informal communities. The identified situated practices are very similar to CoP; however, they are also quite different from the traditional view of CoP. The CoT are mainly formal, whereas CoL are mainly informal, although both are embedded within organisational structures that are virtual and transnational. This finding extends the existing CoP theory, in which

learning systems and organisational structures and processes should be at the service of the informal (Wenger, 2000). We find that learning systems and organisational structures should be at the service of the formal for CoT and the informal for CoL.

Because the communities are transnational and virtual, CoL resembles the traditional understanding of CoP; CoT incorporates all of the necessary components of CoP, while being more formal. The CoT are enabled by the tailor-made ICT system and by formal processes and routines that allocate the tasks to formal functions and expertise. For CoT to exist over time, formal organisational intervention is needed to create these ICT systems and allocation processes. In CoL, where the involvement of other professionals is informal and at the initiative of other members, there are managerial interventions to organize arenas for networking. Formal and informal community involvement, cooperation, and communication coexist within the organisation and enable flexibility. Transnational practices and their inherent communities, therefore, are successfully built top-down by management through enabling structures and bottom-up though enacted activity. Due to global outreach, they do not simply 'exist' as many other practices of doing, but are dependent on formal arrangements, enablers, learning, and support by the organisations. We claim that organisations should not only give primacy to informal systems, as Wenger suggests, but should also give equal attention to formal systems to enable learning and knowing. Learning from others and sharing knowledge with others

occur informally in CoL, whereas learning from tasks and knowing by doing happen in CoT that are formally initiated.

The third implication of this research is the way in which the different situated practices are interdependent. CoP are comprised of CoT and CoL. The distinction between CoT and CoL became apparent as we investigated the use of stable practices in and across multiple locations. The term CoP is an umbrella concept that is constituted by varying degrees of CoT and CoL. This idea is consistent with findings related to the temporary organisation of work in projects, in which knowledge is highly distributed and there is limited time and space for knowledge sharing (Lindkvist, 2005).

Lindkvist (2005) argues that two types of distributed and concerted actions are identified in project-based organisations: knowledge collectivities and knowledge communities. According to Lindkvist, knowledge exists through activities and learning through socialisation in knowledge communities and through concerted action and learning through problem solving in knowledge collectivities (2005). Our study shows that the practices of work sharing and knowledge sharing are not the same. It is important to distinguish between communities for sharing work and not necessarily sharing experiences, namely the CoT (service relays), and communities for sharing knowledge and not necessarily sharing work, namely the CoL (virtual servicing).

Further, our study extends Lindkvist's (2005) conceptualisation by showing how the two communities are mutually dependent to enable long-term value creation in TPSFs. We find that both types of communities may be initiated and sustained by the top management, although through different approaches. Both case firms had well-established CoT, but only Verco had well-functioning CoL. CoT had an immediate effect on performance, whereas CoL had a long-term, positive effect on performance. Newit, after 2006, realised that there were fewer performance gains to be made by streamlining processes, systems, routines, and practices. Thus, Newit started several projects to reorganize and enable CoL across borders, for instance, by developing an internal Wiki for virtual knowledge sharing.

There are several limitations to this study. In particular, only two case firms were studied as TPSFs. The service deliveries were in-house customers or users in Verco, whereas Newit had external customers. However, we were surprised by the similarities between the service deliveries in the two firms and the stable practices in use.

The practical implications of this study are connected to managerial attention and organizing service provision through service relays and virtual servicing. First, sharing work and using a firm's global resource base can be achieved through service relays as

embodied in CoT. Second, sharing and producing knowledge in virtual CoL is important to ensure the sharing of best practices, know-how, and creating new knowledge, thus supporting the functioning of CoT. Third, the initiation of CoL in a transnational setting is not necessarily emergent, because participants may not know or meet each other, other than through formally initiated meetings. Introductions may be necessary before CoL can function as self-organised networks for knowledge creation and exchange. Management plays an important role in building and sustaining both types of communities. It is important that CoL be initiated and supported, to ensure the quality of CoT activities and long-term value creation.

For further research, we suggest focusing on other international work communities, such as accounting and legal service deliveries, to investigate their situated practices. Power relations in these practice communities require investigation that builds on existing work (Heizmann, 2011; Hong and O, 2009; Mørk et al., 2010) related to embedded power differentials across and within CoT and CoL and how power and power asymmetries affect the dynamics of participation in CoT and CoL. Another avenue for future research is to investigate the role of technology in enabling and developing CoT and CoL, especially the role of social media. The future of virtual collaboration may lead to the development of several other types of practice communities.

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Table 1. Empirical material from Verco and Newit

Places	Year	Interviews	Other methods
Verco			
Oslo, Norway	2003	6 (4 senior engineers from 4 different expert groups, 1 GHD manager, and 1 LHD person)	Participant observation at the GHDs and LHDs; discussions with management of the IT department, globally, and project managers in expert groups; and document reviews
Houston, USA	2003	1 (GHD person, by phone)	Observation of video conference and training between Oslo and Houston GHDs
Milan, Italy	2004	6 (3 LHD engineers, 1 middle manager, 2 end users, and administrative support)	Participant observation at 2-day internal workshops with Milan LHD
Glasgow, Scotland	2004	4 (1 super user, 2 senior engineers and end users, 1 end user, and administrative support)	
London, UK	2004	5 (1 super user, 2 LHD persons, 1 middle manager, 1 end user, and administrative support)	Participant observation at 2-day internal workshops with London LHD
Shanghai, China	2004	11 (2 GHD engineers, 1 middle manager, 1 top manager, 2 super users, 3 senior engineers and end users, 1 engineer, and end user)	Participant observation at a 2-day gathering for 18 Asian GHD and LHD employees (from Dubai, Mumbai, Kuala Lumpur, Melbourne, Shanghai, Singapore, Yokohama); participant observation at 2-day internal workshops with Shanghai local help desk
Oslo, Norway	2004	2 group interviews (5 end users and administrative support, 6 end users, and senior engineers)	11 participants in 2 group interviews (GIs)
Total Verco	**2 years**	**33 interviews and 2 group interviews**	
Newit			
Oslo, Norway	2003	8 (1 top manager, 2 regional managers, 3 senior engineers, and 2 engineers)	Guided tour, participant observations
Helsinki, Finland	2003		Workshop and observation at top management meeting

Oslo, Norway	2004	5 (2 engineers and 3 senior engineers)	Guided tour; observation at top management meeting; regular informal conversations with top management; and document reviews
Milano, Italy	2004	10 (1 top manager, 2 sales persons, 3 engineers, and 4 senior engineers)	Guided tour
Hong Kong, China	2004	6 (1 sale person, 3 senior engineers, and 2 engineers)	Guided tour
Shanghai, China	2004	4 (3 sales persons and 1 senior engineer)	
Shenzhen, China	2004	5 (2 sales persons, 1 senior engineer, and 2 engineers)	Guided tour
Oslo, Norway	2005		Regular informal conversations with top management; participant observation at 2-day top management meeting; and document reviews
Hong Kong, China	2006		Observation at top management meeting
Oslo, Norway	2006	14 (1 CEO, 5 middle managers, 5 senior engineers, 2 engineers, and 1 sales person)	Guided tour and participant observations
Ottawa, Canada	2006	10 (1 manager, 1 sales person, 1 administrative person, and 7 senior engineers)	Guided tour
Dallas, USA	2006	9 (1 manager, 1 sales person, 1 controller, 1 administrative person, and 5 senior engineers)	Guided tour
Total Newit	**4 years**	**71**	

Abbreviations: GHD, global help desk; LHD, local help desk

Table 2. Two sets of situated practices: work-sharing and knowledge-sharing practices

Work-sharing practice data	CoP elements and opposing characteristics	Knowledge-sharing practice data
Verco: "Have to use each other due to the specialisations... all are specialised within different modules." (An IT engineer within an expert group about the other experts)	**Knowing:** Other specialities vs. expertise within the same speciality	Verco: "With three other super users, we solve problems together." (A super user in London about super users in Oslo and Milan)
Verco: "I learn through the tasks that come in." (Senior engineer, Oslo)	**Learning:** Learning by doing vs. learning from colleagues	Verco: "Share experiences with colleagues—these chats are important—touch on topics… always work related." (Senior engineer, Oslo)
Verco: "A conscious choice. Special tasks are transferred to 'John' in Korea." (Senior engineer, Oslo)	**Mutual engagement:** Planned vs. emergent	Verco: "I cooperate with Dubai and Mumbai whenever in need." (LHD person in Australia about LHD persons in Dubai and Mumbai)
Newit: "Use Express daily to register projects, and retrieving information... customer information and project information." (Senior engineer, Shanghai)	**Joint enterprise:** Formal vs. informal	Newit: "Communicating with 'Peter', and bringing in recognition as an expert... is nice. Upside, mutual help and team work." (Senior engineer in Ottawa about sharing knowledge with another senior engineer in San Diego)
Newit: "I use Express to see all the information and to compare my work and the work of my colleague." (Senior engineer, Milan)	**Shared repertoire:** Customized vs. standard use of ICT	Newit "Knowledge sharing happens manually through phone, e-mail and personal interaction and not through Express." (Senior engineer, Dallas)

Abbreviations: LHD, local help desk

Table 3. Communities of task: work-sharing practices

Service practices	Activities comprising the practice	Data from Verco	Data from Newit
Service relay	Knowing: providing a special function and expertise	"The expert groups are very important – all have expertise in different areas." (Senior engineer, Oslo)	"Someone in the USA verifies this in the client company, he documents it and makes a project in Express, and it is sent to us for control. We have made a checklist of what is needed to be included for documentation." (Certification engineer, Oslo)
	Learning through providing tasks	"We gain knowledge through the projects." (Senior engineer, expert group, Oslo) "Have no capacity to learn from others." (Global help desk engineer, Oslo)	"Obtain knowledge through experience doing projects, managing projects, daily learning." (Senior engineer, Milan)
	Mutual engagement: sharing work	"'Pedro' in Milan gets a problem, solves part of it, then sends it to Norway. Oslo solves it and an email is sent to the end user." (LHD engineer, Milan)	"Each task in order is assigned to a person, the invoice goes to the customer, but the system divides it to the appropriate person." (Middle manager, Oslo)
	Joint enterprise: sending the service to the next function	"Communication and information are important. Regular hours with phone and video conferences … meetings in English with a summary. Everything is written in Notes in Outlook." (GHD manager, Shanghai)	"Sales talks to the project handler to do the quote. When the project planner allocates the project, all of the required documents are there." (Senior engineer, Dallas) "The communications across countries are related to projects." (Senior engineer, Ottawa)

| | Shared repertoire: using a tailor-made ICT system for service deliveries | "Surprisingly large enthusiasm for a common ICT tool in all functions …" (Global help desk manager in Oslo about Solvol); "Italy waited until 5 o'clock to get to Houston to get competent answers – that was before Solvol. Now, with Solvol, the question goes directly to the right person." (LHD engineer, Milan) | "Using Express works pretty good. It is time consuming at times, but keeps track of everything very well. It is easier when doing other jobs for Newit; now I can search and find it, and sharing info about jobs, and do the scheduling in Express." (Engineer, Dallas) |

Abbreviations: GHD, global help desk; LHD, local help desk

Table 4. Communities of learning: knowledge-sharing practices

Service practices	Activities comprising the practice	Data from Verco	Data from Newit
Virtual service	Knowing: providing expertise to people within the same function or with the same expertise	"Often, we find solutions during our discussions." (Super user in Glasgow about contacts with other super users in Oslo and London)	"You ask around. People share and they have good ideas. But is there a swimming pool to find these ideas? No. A round table to talk and put ideas forward? No." (Senior engineer, Ottawa) "Difficult to find someone to ask to find a solution." (Engineer, Shenzhen)
	Learning through the community	"How we learn? Verbal descriptions and anecdotes – we talk together all the time." (LHD engineer from Kuala Lumpur about other LHDs in Asia)	"Discussing things with our colleagues, with the technical colleagues, because two minds are better than one." (Engineer, Hong Kong)
	Mutual engagement: sharing knowledge	"We do not work together, but we solve problems together." (LHD person in London about contact with Oslo)	"We sit separately on our own island with little contact with others doing the same things." (Senior engineer, Dallas) "With the online system—would be nice to have a message group— I have this product, this problem, etc. … as a group… another expert could see this and comment—a common resource. Could not even tell you the names of the people within this speciality. We do not operate as a global group." (Engineer, Ottawa)
	Joint enterprise: asking and mentoring	"Communicate with London, several times a day ..." (Senior	"I mail John in the US, Hugh in Canada, Ole in Norway. Information exchange, I will ask Hugh if … a standard

	people within the same function	engineer, Glasgow) "We use instant messaging." (LHD engineer in Dubai about sharing experiences with other LHDs in Asia)	interpretation. People come to me for my expertise." (Senior engineer, Dallas) "Now, we are 4 to 5 people communicating by email. Norway, Italy, and USA and Certification. We are sharing a space. This is useful. Other people should be involved as well—knowledge sharing. Would like to be part. We need this. Creating a team… [T]echnical matters [are interpreted] the same [way], even when using different equipment." (Senior engineer, Dallas)
	Shared repertoire: using standard ICT to communicate, or direct person-to-person communication	"Using MMS, email, and phone, depending on the subject." (GHD engineer, Shanghai)	"Phones and email are important tools, a lot more efficient. Human side is important." (Engineer, Milan)

Abbreviations: GHD, global help desk; LHD, local help desk

Table 5. Communities of practice and their service activities

Communities of practice	Organizational practices	Service practices	Activities comprising the service practices
Communities of task	Work-sharing practices	Service relays	• Providing a special function and expertise • Learning through task provision • Sharing work • Sending the service to the next function • Using the tailor-made ICT system for service deliveries
Communities of learning	Knowledge-sharing practices	Virtual service	• Providing expertise to people within the same function or with the same expertise • Learning from the community • Sharing knowledge • Asking and mentoring people within the same function • Using standard ICT to communicate, or direct person-to-person communication

Table 6. Interdependencies between the service relays and the virtual service activities

CoP elements	Service relay activities	Virtual service activities	Interdependence
Knowing	Providing a special function and expertise	Providing expertise to people within the same function or with the same expertise	• Enabling experts to develop their expertise within the organization • Using expertise across borders of time, countries, and units • Assuring customer satisfaction and retention by providing a high level of expertise globally
Learning	Learning through task provision	Learning through the community	• Developing expertise through learning by doing individually from work experience and task provision • Developing expertise through apprenticeships and reflection by learning from the community
Mutual engagement	Sharing work	Sharing knowledge	• Assuring short-term value creation through sharing work in CoT • Assuring long-term value creation through sharing knowledge in CoL
Joint enterprise	Sending the service to the next function	Asking and mentoring people within the same function	• Offering and delivering services globally • Enabling economies of scale
Shared repertoire	Using the tailor-made ICT system for service deliveries; using common practices for the service relay	Using standard ICT to communicate or direct person-to-person communication; using different practices for virtual services	• Using common practices for service deliveries through CoT • Developing and improving the service delivery processes and practices through CoL • Ensuring integrated operations and organizations through common processes, using common practices