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The Networks Role in a Tech Incubator

A Case Study of StartupLab

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## Abstract

This study sets out to analyze the mechanisms that are applied in the underlying construct of a technology business incubator to facilitate a network for its members. By assessing the network facilitation through the incubator's management, infrastructure and support services, this thesis aims to portray where and how nodes are connected, and what the outcome is for the entrepreneurs. The findings implicate the infrastructure to be the baseline for internal network building, and the management as the crucial factor for connecting nodes both internally and externally. An open landscape combined with the managers' external network, experience, knowledge and ability to connect nodes is emphasized as main factors to succeed with successful network building in the incubator. The selection process at StartupLab portrayed a synergy effect, as the highly competent environment attracted interested external nodes, leading to external validity for its members from being part of the community. Finally, support services are portrayed as a crucial factor to connect members to both internal and external nodes to gain access to investments, customers, experience and knowledge, and the possibility to collaborate with external and internal actors

## 1.0 Introduction

### 1.1 Background

It is a known fact that more startups fail than succeed. A study by Shikhar Gosh (2011) reports that 75% of venture-backed startups fail. There are a multitude of reasons for these, and various sources quote: lack of focus, lack of motivation, commitment and passion, failure to identify root cause of customer dissatisfaction, too much pride, taking advice from the wrong people, lack of general and domain-specific business knowledge (finance, operations and marketing) lack of feedback on prototypes, inability to raise capital or raising too much capital too soon, weak teams, etc. The list is long. But whereas startups often have shortages on how to expand and excel, input and help from more experienced people can help startups to thrive. This has resulted in the trending phenomenon of business incubators having the sole purpose of helping startup companies off to a good start. One can view business incubators as hubs of knowledge that its members can access and receive assistance from.

And whereas startups often lack the knowledge and insight to succeed, an incubator's internal and external network can provide their members with the right set of tools to overcome hurdles in their development phase.

The literature surrounding networks foundation and movement has exploded in interest in the last 20 years (Krebs & Holley, 2006). The foundation of a network are nodes and the ties/links connecting the nodes (Eveleens, van Rijnsoever, & Niesten, 2017). The nodes are typically assessed at various organizational levels (such as firms, divisions, projects or individuals), but can also be categorized in terms of member types (large firms, small firms, universities, government) (Eveleens, van Rijnsoever, & Niesten, 2017). The connection is usually referred to as relational characteristics. These relational characteristics includes friendship, cooperation, power, and exchange of advice, assets or information (Eveleens, van Rijnsoever, & Niesten, 2017).

The range of services and expertise that business incubator deliver is vast and varies from each incubator. But a common denominator is that business

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incubators provide services to assist other companies with knowledge and insight for those less experienced in specific areas. These have proven particularly useful for startups with limited amounts of resources in the early days

### 1.2 Purpose/Gap

Despite the growing interest, business incubators and the process of incubation has not yet reached a status of universal acceptance. Theodorakopoulos et al (2014), enlists that a rich and broad variety of conceptualizations, insights and approaches have emerged because of the increased attention on literature about network-based incubation. An example underlining this is the multiplicity of notions. Theodorakopoulos et al (2014) suggests a broad variation in perception by listing the following terms that clearly refer to the same concept, i.e. research parks, enterprise centers, seedbeds, science parks, technopole, industrial parks, innovation centers, knowledge parks, business accelerator, cold frames, hatcheries, hives, germinators, hubs, hot-desks, gradulators, grow-on space, spokes, ideas labs, managed workspace, venture labs, business centers, fertilisators and the networked incubator.

Furthermore, the researchers of the literature have acknowledged two major shortfalls. One being the contradictory result found in the research on network-based influence on startups' performance (Bruneel, Ratinho, Clarysse, & Groen, 2012). While some studies argue that network-based incubators influence startups' performance, others find no direct relation between them. The other shortcoming is based on the limited theoretical depth applied in research of incubation, resulting in a gap around fact-based theory describing the diversity in incubator performance (Bruneel, Ratinho, Clarysse, & Groen, 2012).

There exist a comprehensive amount of research and theory within the literature of network facilitating. However, there are gaps in the existing literature around how the mechanisms are applied in the underlying construct of a Technology Business Incubator to facilitate a network for it members, and how it affects connection of nodes.



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### 1.3 Research Question

The reason behind this study is to explore these mechanisms through a qualitative research and discuss how the mechanism facilitate a foundation for the network. Based on this, we will discuss suggestions for “best practice” of how incubators can facilitate an arena for network facilitation, and how it affects how nodes are connected in a technological network-based business incubator. Further, this study will discuss what the outcome provides the entrepreneurs in the entrepreneurial process.

In the interest of providing an insight to how technological network-based business incubators facilitate a network for its members to connect to various nodes and what the outcomes from these connections provide, we have narrowed the research question down to:

Considering startups with knowledge-intensive products and/or services:

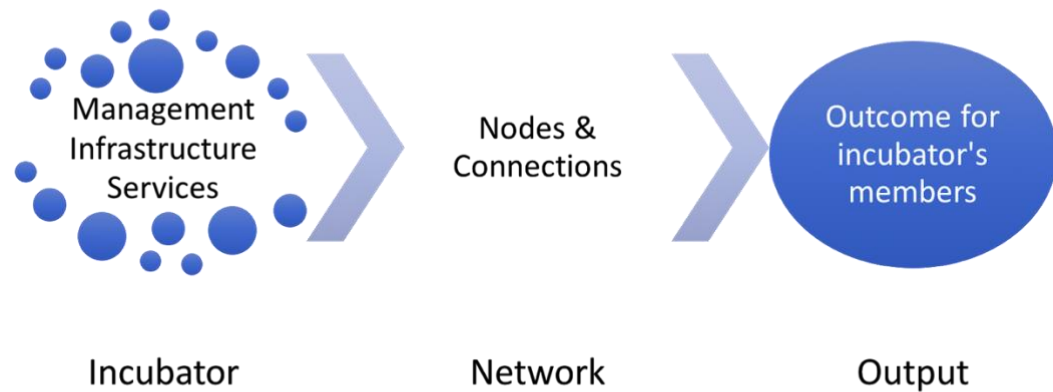
How is network building facilitated in SL through their management, infrastructure and services, and what are the outcomes regarding network, nodes and connections for the entrepreneurs in SL?

Based on the theoretical framework, we want to explore the network in the business incubator StartupLab (hereafter referred to as SL) with focus on the following areas:

- Management
- Infrastructure
- Support services

Research Model (see Model 1)

1. How does the incubator’s management affect network building, and what is the outcome for the members?
2. How does the incubator’s infrastructure affect network building and what is the outcome for the members?
3. How does the incubator’s support services affect network building and what is the outcome for the members?



## 2.0 Literature review

### 2.1 Business Incubators

#### 2.1.1 Business Incubators' background

The formal concept of business incubators, dating back to 1959 when Joseph Mancuso opened the Batavia Industrial Center (Theodorakopoulos, Kakabadse, & McGowan, 2014), has in recent decades witnessed a massive growth, where more and more companies launch so called startup-programs; i.e. business incubators. Business incubators aim to provide vital expertise to support new ventures in overcoming initial hurdles in the startup phase. Startups often lack resources, experience and the required business network. This is where business incubators have major impact.

Over time, the support required by startups have changed because of changes in the way business is being executed. This is due to changes in external factors such as new emerging technologies, new ways of manufacturing, change in distribution, etc. Over the last two decades, the literature has focused on providing an overview of how business incubators influence performance for its members. In this period, research has mainly surrounded the topic of network-based incubation (Hansen, Chesbrough, Sull, & Nohria, 2000).

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As we entered the technology era, more and more technology-based startups have emerged, creating an extensive market opportunity for business incubators. The National Business Incubation Association - NBIA (2014) states that five decades after the first incubator came to life, the number of incubators has surpassed 7 000 worldwide, proving that there is a massive demand for the expertise provided. During this period, the way of supporting startups has changed. Initially, incubators primarily focused on helping to establish infrastructure. Later the scope expanded to include one-to-one business advice. And finally, incubators have changed their approach with the intention to facilitate network-business (Bruneel, Ratinho, Clarysse, & Groen, 2012). This change in focus, is a result of the realization that startups need wider support due to intangible resources (Eveleens, van Rijnsoever & Niesten, 2017).

### 2.1.2 Technology Business Incubators

As technology-based startups typically require different resources to other entrepreneurs, technology business incubators (TBI) have emerged to accommodate those needs and demands. Smilor and Gill (1986) formulated the notion of TBIs as a linkage between entrepreneurial talent, capital, know-how and technology. These TBIs exist as innovation centers, accelerators, science parks and technology incubators (Mian, Lamine, & Fayolle, 2016), and their purpose is to develop local innovative firms by promoting technology transfer and dispersal of products (EU, 2010). They aim to help startups to survive and grow, by providing members the possibility of joining networks, support with business services, access to resources, capital and professional services (Mian, Lamine, & Fayolle, 2016).

By implementing the essence of networks in TBI, the characteristics of a network-based incubator is that it aims to foster partnership between startup teams and other successful technological firms (Hansen, Chesbrough, Sull, & Nohria, 2000). This is done by ensuring that knowledge, experience and talent is shared across firms, and by nurturing technology and marketing relationship. Startups can, with the help of such an incubator, obtain resources not easily obtained elsewhere, and quickly partner up with others (Hansen, Chesbrough, Sull, & Nohria, 2000). This may enable startups to establish a competitive advantage in the market. Mort and

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Weerawardena (2006), referred to by Pettersen et al. (2015), found that when it comes to product development and identifying potential markets, networking capability is an advantage for firms that are developing knowledge-intensive products. By gaining access to larger networks, firms can learn faster, which is critical for startups' ability to develop in a positive direction (Pettersen et al. 2016).

Bergek and Norrman (2008) argue that earlier research into incubators and technology hubs has mainly focused on the internal network and how the relationships and interaction between the members can stimulate new ideas and innovation (Cantù, Ylimäki, Sirén & Nickell, 2015). Research has focused less on the managers ability to connect members with external nodes, such as customers, suppliers, potential partners, universities and investors (Cantù, Ylimäki, Sirén, & Nickell, 2015). Incubators have a role to create a network where the incubatees can gain access to activities supporting their business and provide networking with different institutions, such as research centers, universities, associations and potential partners (Cantù, Ylimäki, Sirén, & Nickell, 2015).

When it comes to understanding and explaining the local innovation created within incubators, science parks, etc., access to and exchange of local knowledge are some of the most relevant factors (Díez-Vial & Fernández-Olmos, 2015). Lambooy (2010) stated that the local knowledge found in these places is difficult to access from the outside and is something the members can take advantage of. Being part of an incubator or a science park, entrepreneurs can get access to local knowledge by reaching out to partners such as, researchers, universities and investors, as well as sharing ideas, experience and advice with other co-located entrepreneurs (Díez-Vial & Fernández-Olmos, 2015).

## 2.2 Entrepreneurship

### 2.2.1 Entrepreneurs

Reynolds et al. (1999) defined a nascent entrepreneur to be someone who initiates activities to create a new firm. Earlier research has focused on the entrepreneurs

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and the owners of the ventures, rather than the environment in which they are engaged. However, in more recent time entrepreneurial studies use a process approach to explain the birth of new ventures (Škerlavaj, Štemberger, Škrinjar & Dimovski, 2007). Korunka et al. (2003) defined the process as a set of actions or operations that accumulates into a new venture. Despite an easy definition, actions and operations initiated can be of almost any character, and entrepreneurship can differ from startups to fully grown businesses looking to harvest from innovation. This may be one of the reasons why the literature cannot yet provide a concise definition of the incubator process.

Two perspectives emerge for analysis in this entrepreneurial process view. These perspectives for analyzing express the leap from an individual entrepreneurial approach to a collaborative innovative environment of entrepreneurship within incubators. One perspective is around the lifecycle of a venture, while the other is opportunity management. Studies have explored the phases of the life cycle, and define them as conception, gestation, infancy and adolescence (Wagner, 2007). The conception and gestation phases are what previously has been referred to as a nascent entrepreneur, whereas one examines the posterity in the infancy phase, and finally adolescence as the growth phase (Wagner, 2007). The second perspective is management of the opportunity. This involves everything to do with the managerial aspect of venture-creation. Shane and Venkataraman (2000) talked about the possibilities to exploit and profit from the opportunities within an innovation process, and that this process is affected by previously gathered knowledge. These opportunities to harvest essential knowledge, not easily obtained elsewhere, can be found within networks. Furthermore, a business network allows startups to acquire and exploit resources through assessing, assembling and deploying them. In the final part of the process ventures achieve validity through previous phases.

Evers et al. (2014) refer to the term entrepreneur used by Richard Cantillon (1979) as: “the agent who purchases the means of production and combines them into marketable products.” Even though the definition of new technology-based firms seems to be somewhat open, Bollinger et al. (1983) suggest that such firms have few founders, are independent from larger firms and that “the primary motivation for founding such enterprises should be to exploit a technical idea ... it should be

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the first time this particular application is being used.” (Evers, Cunningham, & Hoholm, 2014).

### 2.2.2 Technology entrepreneurs and their needs

Technology entrepreneurs often tend to focus to a large degree on developing their product or service without taking into consideration how their product or service will fit the market, or how they will get it out there. In other words, focusing too much on the technical development of their product or service can lead technology entrepreneurs to leave insufficient attention to other important parts of the entrepreneurial process, such as market-validation or developing a business model around their product or service (Evers et al., 2014).

Technology entrepreneurs in the early stages often lack the required competence and experience in important parts of the entrepreneurial process, such as strategy, marketing and finance, and so they learn by doing as their firms evolve.

Additionally, these entrepreneurs often have limited knowledge of the best-fitting market for their products and services. They typically have few products/technologies ready for market introduction and the biggest challenge is the lack of a solid business case taking their technology to market with an expectation of profitable business. To be more specific, their challenge is not necessarily invention and innovation, but rather the process of commercialization (Evers, Cunningham, & Hoholm, 2014).

### 2.2.3 The Importance of Knowledge Creation for Entrepreneurs

As previously stated, startups often lack knowledge. Bartol and Srivastava (2002) underlines that knowledge sharing is critical to knowledge creation, organizational learning and performance enhancement. For organizations to capitalize on their incumbent knowledge, they must understand the process of creating and sharing knowledge, and how to use it (Ipe, 2003). This is where networks play a critical role in organizational development and knowledge sharing. Wang & Noe (2010) emphasize the importance of knowledge sharing to succeed in knowledge management. Knowledge sharing can be viewed as the link that allows knowledge to be transferred between individuals and the organizations and enables an

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organization to convert knowledge into economic and competitive value (Ipe, 2003). It is referred to as the sharing of both task information and know-how with other people to create new solutions and ideas or the implementation of policies or procedures (Wang & Noe, 2010).

Study by Bruneel et al. (2012), aimed to overcome the the limited theoretical depth applied in research of incubation, and to better understand the literature they used theoretical management theories as lenses to view the effect of network-based incubators on startups' performance; the resource-based view (RBV), the knowledge-based view (KBV) and the organizational learning (OL), and social capital theory (SCT). Grant (1998), emphasize the importance of KBV, as knowledge is the most crucial resource to drive a firm's performance. This is because knowledge can provide a lasting competitive advantage, whilst all other resources are more easily transferred.

Referring to the knowledge-based view (KBV), when interpreting and acquiring knowledge, networks can play an important part (Eveleens, van Rijnsoever, & Niesten, 2017). In an organizational context, much like a network, people can learn from the experience of others, as well as their own direct experiences (Wang and Wang, 2012). Håkansson and Waluszewski (2007) portrays knowledge as a resource where the value of the knowledge emerges when organizations interact. These interactions are found within networks. Relationships within networks may lead startups to create shared values together, by allowing startups to develop the knowledge on how to be more effective and efficient with resource utilization. Viewing a network-based incubator as an organization, one can imply that because of interaction among tenants in a network, knowledge gathered from one member can be transferred across to all their member firms. This can be shared and transferred through feedback, explanation, advice or help (Hutzschenreuter & Horstkotte, 2010).

There are several factors influencing knowledge sharing. Ipe (2003) lists the following; the nature of knowledge, the motivation to share, the opportunities to share, and the culture of the work environment. Depending on these factors, knowledge can be shared through different channels, such as written

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correspondence, face-to-face communications or documenting, organizing and capturing knowledge from others (Wang & Noe, 2010).

## 2.3 Network

### 2.3.1 Network in startups

Several studies underline that a firm's business network, directly influence its performance (Eveleens, van Rijnsoever, & Niesten, 2017). Powell et al. (1996) emphasize that a central position in a network and strong relationships usually enhance performance, as one possesses the ability to draw advantages from information, power, learning and resources. It may also add constraints to a firm's ability to perform, as it may be costly to maintain, and potentially blind the companies to alternative and new development areas (Eveleens, van Rijnsoever, & Niesten, 2017).

New ventures tend to lack all the different resources needed to succeed. Looking forward, it can be difficult to tell which resources are needed at the different stages of the development process as this is often not known until a venture evolves in a certain direction. Incubators can provide its tenants with resources adapted to their existing needs, help identify needs gaps and assist with access to resources beyond the incubator through formal and informal networking (Peters et al, 2004). Peters et al (2004) further describe networking as: "the access available to the tenants of the incubator to managers, administrative, management, financial, legal, insurance consultants as well as to scientists, academicians, prospective customers, either for a fee or free of charge".

Entrepreneurs operating at an early stage take advantage of their current social network and try to expand it to gain access to knowledge and resources aligned with the needs of their organizations (Aldrich, H.E., 1999, *Organizations Evolving*, Thousand Oaks, CA: Sage Publications). An important part of the incubator process can therefore be to introduce new ventures to a larger network where they can get in contact with the right people at the right time. When it comes to the characteristics of such a network, Granovetter (1974) argues that nascent entrepreneurs will gain less benefits from a network consisting of homogeneous nodes. This is because the marginal value of each person in a network will decrease if everyone possesses the same knowledge. Peters et al



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(2004) therefore emphasize the importance of having a broad based, loosely connected network, and argue that an incubator can create great value for its members by operating as an intermediary to a larger set of networks where it connects people who otherwise would not meet.

### 2.3.2 Network in incubators

Network-based incubators aim to facilitate an arena providing access to services and resources (Eveleens, van Rijnsoever, & Niesten, 2017) and thereby influencing the performance of technology-based startups. Looking at the part of the network affected by network-based incubation, the literature largely agrees on the type of nodes in the startup network, being universities, incubators managers, consultants, investors and other startups (Eveleens, van Rijnsoever, & Niesten, 2017).

Ratinho et al. (2009) questions if network-based incubation influence startups performance at all, and if so; how? Their research was aimed to investigate to what extent business incubators provides their members with the right tools and resources to overcome their developmental problems (Ratinho, Rainer, & Groen, 2009). Their findings suggested that strategic challenges where among the most frequent and serious problems addressed by the members of the business incubators, and not that of a human capital character which was thought to be the crucially required expertise. The paradox they witnessed, was that there was a mismatch between what startups saw as their initial problems versus what they needed help with (Ratinho, Rainer, & Groen, 2009). The same results are found in a review done by Hackett and Dilts (2014), who also raise the question of business incubators' impact, and draws the same parallels to the literature in their studies.

### 2.3.3 Network Foundation

The literature surrounding networks foundation and movement has exploded in interest in the last 20 years (Krebs & Holley, 2006). The foundation of a network are nodes and the ties/links connecting the nodes (Eveleens, van Rijnsoever, & Niesten, 2017). The nodes are typically assessed at various organizational levels (such as firms, divisions, projects or individuals), but can also be categorized in terms of member types (large firms, small firms, universities, government)

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(Eveleens, van Rijnsoever, & Niesten, 2017). The connections are usually referred to as relational characteristics. These relational characteristics includes friendship, cooperation, power, and exchange of advice, assets or information (Eveleens, van Rijnsoever, & Niesten, 2017).

Krebs and Holley (2006) identified five common features as patterns in an effective network. These were: common attributes, goals or governance linking nodes together; diversity is important, as a vibrant network maintain linkages to diverse nodes and clusters; within robust networks, nodes inhabit plural links between any two nodes; the average path length tends to be short; Some nodes are more prominent and crucial to the networks sustainability (Krebs & Holley, 2006). Further, Krebs and Holley emphasize that once a network is left unmanaged, two driving and powerful forces leads the evolvement of the network. Homogeneous nodes and closely related nodes tend to connect. This results in dense clusters with absence of diversity, creating a closed environment and removing the possibility for new ideas and innovation creation (Krebs & Holley, 2006).

From their study, Krebs and Holley (2006) uses the phrase “knit the net” for structuring their four phases of building a vibrant community network (Scattered Fragments, Single Hub-and-Spoke, Multi-Hub Small World Network, Core/Periphery). In each phase, a more adaptive and resilient structure to the network is applied (Krebs & Holley, 2006). For a weak and under-producing community with scattered fragments, where small emergent clusters appear based on common interest or goals, it is important that managers actively create new interactions among them to avoid delay of connections to be generated. The managers must inhabit certain social skills, the vision and the energy to connect nodes. Further, the network benefits largely from a managers’ external network as it brings in information and new ideas (Krebs & Holley, 2006). As the manager(s) creates linkages to many groups, they will learn of the clusters’ goals, skills, successes and failures. This allows the manager(s) to weave clusters with each other, and thereby continue forming new connection, creating clusters (Krebs & Holley, 2006).

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With the connections of multiple individuals, organizations and clusters in a network, loose connected among the nodes are created (Krebs & Holley, 2006). These weak connections are linkages that lack frequency and intensity compared to the stronger connections in a network possess (Granovetter) and are often found between clusters (Krebs & Holley, 2006). Krebs & Holley (2006), emphasize that bridging these connections is important in innovation as one usually must go outside ones' local domain to discover new ideas. This is when the multi-hub community is created. The design minimizes the path distance throughout the network, resulting in a better workflow, information exchange and knowledge sharing (Krebs & Holley, 2006). The final phase is a stable structure which opens the possibility to link to other well-developed networks in other areas (Krebs & Holley, 2006). The core/periphery model is based on the network core consisting of key community members with strong connections combined with the periphery of nodes with looser connections to the core (Krebs & Holley, 2006).

#### 2.4 Evaluating Incubator Performance

How to measure the success of an incubator is a key focus area in the literature. Much like the broad variety found in previous research when defining incubators, there is no consensus on critical success factors (Theodorakopoulos, Kakabadse, & McGowan, 2014). Dee et al (2011) (from the Theo article) expresses the absence of a universal definition of which variables have the greatest impact and further, how to define success factors linked to quality and efficiency. The reason for this is that each "stakeholder's" objectives or expectations affect how they measure success (Lalkaka, 2001). Whereas an incubator manager may look at survival rate as the best criteria for success, another may find it dissatisfying unless it is accompanied by an increase in revenue, enhanced competitive advantage, etc. As a result, the literature provides a long list of factors to define efficiency and quality, and which indicators and variables have the largest impact (Theodorakopoulos, Kakabadse, & McGowan, 2014). However, when evaluating business incubators, much of the literature draws on Smilor and Gill's (1986) study on business incubators. Their results identified ten critical success factors; "on-site business expertise, access to financing and capitalization, in-kind financial support, community support, entrepreneurial networks, entrepreneurial education, perception of success, selection process for tenants, ties with a

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university and a concise program with clear policies, procedures and milestones” (Smilor and Gill, 1986).

In the review by Theodorakopoulos et al. (2014), several studies extends the list of success criteria to include “The clarity of mission and objectives, the monitoring of the performance of business incubation, the sector specificity, the incubatee selection process, the graduation/exit processes, the proximity to a major university, the level and quality of management support, the extent of access to potential internal/external entrepreneurial networks, and last but not least, the competency of the incubator manager to configure hard and soft elements of the business incubation environment and shape the relational context within which incubatee entrepreneurs operate” (Theodorakopoulos, Kakabadse, & McGowan, 2014, p 608)

However, incubators vary considerably. Thus, making successful incubators differ in terms of which critical success factors are deemed to be of significance. Combining the findings with several other studies led Theodorakopoulos et al. (2014) to derive the following success criteria to be the common denominators: Incubatee selection policy, exit/graduation policy, shared office space and resources, incubator manager competences and relationship with incubatees, support services, management, know-how advice on regulations, technology and Research & Development support networking (internal and external) access to funding and the monitoring of performance.

Alongside the review by Theodorakopoulos et al. (2014), Lewis, Harper-Anderson & Molnar (2011) derived a table outlining the elements of business best practice in incubators. Drawing upon their findings, and previously mentioned research, suggests that the areas which incubators are to be evaluated by when establishing a functional network, is the incubators’ management of the program, its infrastructure and support services.

Essential factors to the management of the program is portrayed in review by Hackett and Dilts’ (2004) and identifies client selection, monitoring and assistance, and resource infusion to be the principal elements of the incubation process. Further, by combining studies the management can be assessed through

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entry/selection policy/criteria, the importance of heterogeneous network connections, and thereby also the type of nodes in the managements external network (universities, incubator managers, consultants, investors and other startups). By ensuring talent, expertise and diversity in the community, the literature emphasize the managers' ability to work as intermediaries to a wider network, and their ability to create formal and informal networking (Lewis, Harper-Anderson & Molnar, 2011: Theodorakopoulos, Kakabadse, & McGowan, 2014: Smilor and Gill, 1986; Peters et al, 2004: Granovetter, 1974: Eveleens, van Rijnsoever, & Niesten, 2017)

Regarding the incubators infrastructure, the literature emphasizes the importance of shared office space and resources, the proximity to major universities, the access to broadband high-speed internet, and access to specialized equipment and laboratories (Lewis, Harper-Anderson & Molnar, 2011: Theodorakopoulos, Kakabadse, & McGowan, 2014: Smilor and Gill, 1986).

Under support services, the literature argues that incubators should facilitate assistance on development of business plan, the possibility for legal assistance and accounting and financial management services and marketing assistance (Lewis, Harper-Anderson & Molnar, 2011: Theodorakopoulos, Kakabadse, & McGowan, 2014: Smilor and Gill, 1986).

### 3.0 Method

In the following chapter, we are discussing the reasons for the methodology used and present the layout for our research. While evaluating the literature surrounding business incubators, there is no known consensus on what best practice look like. As previously mentioned, this is due to a vast variety in definitions and the how the incubators differ in functionality and areas of expertise. Referring to 2.2.4 Success criteria in incubators, a substantial number of common features exists in successful incubators. These features, or success criteria, will be the baseline for our research.

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The model for the research will therefore be to address the chosen incubator's actions and services as a way of defining how the network is facilitated for its members. Interviews with the incubator's members will outline how the incubator's management, infrastructure and services influence network building.

Thereafter, we will compare the incubator's intentions behind their actions and services against the perceived outcome for the members. Through this we will be able to evaluate which features that positively or negatively affects network building at StartupLab. We hope that our evaluation of StartupLab's network facilitation will be helpful to future studies on how a technology business incubator affects the network for its members. The model for the research will therefore be to address the incubators actions and services as a way of defining how various nodes are tied and how it may affect their members.

### 3.1 Qualitative Case Study

The background to this paper is to explore how startups can benefit from the access to a broader network at an early stage. An interesting angle was to look at one type of startups to see if one could find a common denominator among them. It had a deductive approach, as the research was guided by theory (Bryman & Bell, 2015). From this point, the paper was narrowed down to focus on a certain type of technology-based startups sharing the same environment. The baseline for this paper has therefore been to examine network building in the networks at StartupLab (an incubator for technology startups).

In terms of how the 7 interviewed startups have tied connections with various nodes from the internal and external network at SL, a deductive examination through qualitative study approach has been chosen.

The study focuses on a detailed and intensive analysis of one case. Given our research question, a case study design allows us to focus on understanding "the dynamics presented within single settings" (Eisenhardt, 1989). The aim is to examine the findings within our framework, and thereby provide descriptions of the phenomena. Our objective is to contribute with meaningful research to the literature and discuss whether there is transferability in our findings.

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### 3.2 Data Collection

Both primary and secondary data has been used in this paper. To provide context on the phenomena, we believe that conducting semi-structured, in-depth interviews of key stakeholders is the best way to understand how knowledge is shared and facilitated within the tech incubator, StartupLab. Secondary data has been gathered when identifying the characteristics and background of interviewees, as well as SL. This has been done to get an overview and understanding of the startups' current situation, their history and development. When researching the field of literature, data was collected in several stages through multiple sources. Theories applied in the paper has been chosen based on their relevance to the study. Further, the cited articles have been evaluated based on the number of citations, publication journal and the authors' authenticity and expertise on the given literature.

Interviews and secondary data collection, combined with observations of the incubator, provide data containing opinions, values and actions by the actors in this social context. To understand the key processes of StartupLab, we will interview incubatees at different stages of the startup process, as well as key personnel connected with the incubator. Interviewing startups at different stages and with different requirements will be done with the objective of acquiring an impression of the general outtake for members at StartupLab. Interviewing other key individuals will give us extended information regarding how network building is facilitated throughout the incubator and how this affects SL's members.

### 3.3 Sampling

As the study uses a qualitative approach, the sampling in the research is based on the notion of purposive sampling. This type of sampling focuses on the selection of units with a relevant to the topic of interest (research question) (Bryman & Bell, 2015). The research question is therefore the indication and baseline for what units that are to be sampled.

Within purposive sample, Teddlie and Yu (2007) derived two distinctions: sequential and non-sequential approaches (Bryman & Bell, 2015). The non-sequential approach is referred to as a "fixed sampling strategy" and the

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sequential approach is an evolving process, where researcher initially start with a sample and then gradually increase the sample in alignment with the research question (Bryman & Bell, 2015).

The criteria for the interviewed startups

- Member of SL
- Technological startup
- Norwegian-based
- Staff located at SL's facilities

The goal with the sample is to interview incubatees with similar characteristics (see criterion for the interviewed startups). This is done with the idea mapping from a shared perception among the members. To collect enough data from this part of the study, we planned to interview 6-10 incubatees. The sufficient number of interviews depend on when the findings collectively establish an overview of the phenomena.

### 3.4 Validity

An important criterion for assessing research is validity. Validity concerns the quality of the conclusions that are drawn from a single piece of research and is divided into internal and external validity. Internal validity is related to the issue of causality and concerns the quality of a conclusion that contains a causal relationship between two or more variables. External validity has to do with the degree to which the results of a study can be generalized beyond the specific research context (Bryman & Bell, 2015).

This study has a reasonably strong internal validity due to an extensive use of historical data, which leaves less room for misinterpretation. Additionally, the study has applied earlier research to determine the best fitting variables for explaining the proposed model. However, it is still possible that variables that affect the model are left out.

This study is a case study with a relative small sample. Therefore, the external validity is low.



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### 3.5 Reliability

Reliability concerns the consistency of the measures that are used for explaining concepts in research. It questions whether the results of a study are repeatable (Bryman & Bell, 2015). It is divided into external and internal reliability. External reliability has to do with the degree to which a study can be replicated. Because it is very difficult to fixate social settings, external reliability is often a challenging criterion to meet when conducting qualitative research. Internal reliability concerns whether the researchers agree upon what they actually see and hear when there is more than one observer participating in the collection of data (Bryman & Bell, 2015).

Semi-structured, open ended interviews were used for the collection of data in this study. The conversations may therefore have taken different directions during the interviews. One can therefore argue that it is difficult to replicate the results from this study and that the study has a relatively low external reliability. There were few or none disagreements regarding the observations, and the study arguably has a rather strong internal reliability.

### 3.6 Limitations

Qualitative research is often criticized for being too impressionistic and subjective (Bryman & Bell, 2015). As the researcher is the main instrument of data collection, qualitative studies can be affected by personal relationships arising during interviews, and that the researchers' view on what is significant and important can be less objective. Because of that, this type of study often makes it difficult to replicate the findings (Bryman & Bell, 2015).

As qualitative findings originate from participant observation and unstructured interviews with a small number of participants in a particular community, generalizing the findings are often impossible (Bryman & Bell, 2015). So instead of trying to generalize a population, qualitative findings are to generalize theory. This will be the aim for this thesis; generalize concepts and theory grounded in data.

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Another limitation that often is connected to qualitative research is lack of transparency. This should do with how researchers conduct research and come to conclusions in specific studies. In more detail, this relates to the vague descriptions of how participants are selected for a certain study and especially how the analysis is conducted, and thereby also how the conclusions are decided upon (Bryman & Bell, 2015).

#### 4.0 Findings

##### StartupLab

StartupLab is an incubator located at Forskningsparken in Oslo (Oslo Science Park) and has since its foundation in 2012 supported more than 250 technology startups (startuplab.no, 2018). Of these, 74% of the companies are still growing. SL offers access to workshops, mentors, investors, data science labs, hardware lab, free legal advice and accounting services, and office and meeting room facilities (startuplab.no, 2018). They have 350 entrepreneurs spread across 82 active members.

The core asset at SL is their community and its network (startuplab.no, 2018). The SL-team, members, alumni and the external network collectively share their experiences, knowledge and network, benefiting the accumulation of different actors (startuplab.no, 2018). SL team contains of many previous entrepreneurs and people who mostly have worked in big companies and therefore have a wide network. Over the years, the SL-team has grown, and thereby also expanded the opportunity for members to create connections with potential customers, investors and access to recruitment.

SL offers an accelerator program, consisting of an intensive three-month program constructed to help founders build and scale technology startups. Through funding, advice and network, the intention is to make it easier for startups to grow (startuplab.no, 2018). In the program, selected startups receive a 1,2 MNOK investment, close support and a workspace at SL. The members get weekly follow-up from an assigned mentor from the SL-team and weekly lunches with

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the other members of the accelerator program, alongside experienced entrepreneurs sharing their experiences and knowledge. The startups will also gain access to a wide range of credits and services at external partners.

#### 4.1 Interviews with Individuals Affiliated with StartupLab

##### 4.1.1 SL Management

###### Interview with Rolf Assev, Partner

Rolf Assev's background is 12 years working at Opera Software, before he co-founded a startup based out of SL (startuplab.no, 2018). He realized that his experience, alongside his international network, could benefit other startups. Assev joined the SL-team in 2012 as a partner, and works as a mentor for many of the members at SL.

###### Management

“The most important aspect of an incubator, is that the individuals managing the incubator has a large network and has experience and insight into what entrepreneurs need, and that the managers can help introduce the entrepreneurs to external people.”

Assev explains how some Silicon Valley located incubators no longer are incubators or accelerators. They are now only a highly-respected community to be a part of. They facilitate no services for their members, only the option to proclaim being a part of this community and act as the gateway to a large network. Assev explains that this is also the main aspect of SL; introductions to possible customers, investors and opportunity for collaboration with other companies, and providing external validity for its members.

An important part of creating a great environment for collaboration and sharing, is the right selection of startups accepted at SL. Assev explains that it is of utmost importance to have the best startup teams to create this environment. SL has become so desirable for startups, that there is a vast number of applicants, from which only 10% gets accepted into SL. This allows the SL-team to select startups they consider most fitting for their environment and purpose. Assev describes the process when applying to be part of SL:

*“They apply, and through the application process the startups describes a few things about themselves. They then go through interviews, where we (SL) have various criteria that are important for the future recruitment process. Primarily, the people/team is the most important, not the idea. We must be convinced that people are able to implement the idea. The only thing we know about the idea is that it will change 10 times over the next three years.” (Rolf Assev, 2018)*

Further, he believes that this, alongside the incubators manager’s broad experience, competence and external network, provides members of SL (much like the Silicon Valley located incubators) with external validity.

Being an incubator for technological startups, an important feature to the startups applying for membership is that they have a certain degree of technological background or competence within their team. Beside the network building, Assev emphasize that they facilitate more commercial knowledge than assisting with technological development or production. Those are skills the members are expected to have.

#### Infrastructure

Assev explains that the essence of SL’s infrastructure is to nourish and stimulate collaboration and sharing among startups and across industries. The open office landscape is therefore essential in terms of creating a platform at SL to enable creation of connections among the different situated nodes. Being behind closed doors is not an ideal environment to encourage sharing. Getting your own office space can be obtained elsewhere. Assev emphasize that this is essential for an incubator, or else one would just be a “company offering office space”. Assev witnesses that those startups who prefer their own office space at SL, tend to act more introvert over time. However, they still take part in the community, but far less compared to those who spend time at their clean desks.

Location wise, Assev points out that it is important for SL to be situated where at their current location. SL is a technological incubator, and therefore need to be affiliated with the access to the best technological environment. The area where

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SL is based in Norway's most knowledge-oriented area (forskningsparken.no, 2018). It is close to the university, university hospitals and research institutes. Assev explains that everyone located in this area is in some way related to each other. As an interesting comparison, Assev draws a parallel with SL's location to the location of Olympiatoppen (the Olympic training facilities). In his view an athlete's desire and benefits of training at Olympiatoppen, is comparable to a technological startup's desire and benefits of being at SL.

Ergo, Assev describes the reasons behind SL's location and infrastructure as a source for inspiration, motivation, and a place for learning and sharing. It is designed and located with the intention of creating "planned coincidences", as Assev calls it. Meaning that SL creates a place for random connections to occur, as everything is located close by.

### Services

In the accelerator program, offered in spring and autumn, the SL-team works close with the members over an intensive three months' period. More resources are brought in during these periods. Last time around, the corporate partner DNB was co-hosting the accelerator program. Bringing partners onboard the program, is something that SL usually do. A positive gain from this is that the partner offers their own competent people at disposal. This enables the members to quickly get in dialog and connection with relevant companies/partners.

Assev explains that there are 18 corporate partners at this point in time. These are all partners for different reasons. But common for all, is that they are there to elevate the startups at SL. Assev has witnessed an interesting ripple effect among the partners. Several of them have initiated joint projects after meeting at SL.

Furthermore, SL-team facilitates "tech talks" where they invite people with expertise to share their knowledge and discuss with the members. These sessions are offered as workshops and members can participate in a wide variety of disciplines.

In addition to offering free legal and accounting counseling, SL also offers access to investment from the Founders Fund. The Founders Fund was initiated by

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members of the SL team and consists of a large pool of prominent names in the Norwegian business world. This gives an opportunity for both funding and introductions to a larger network, and thereby demolish barriers that usually exists for less-known firms.

#### 4.1.2 Oslo Tech (Oslo Science Park)

Oslo Tech is the operating company behind the Oslo Science Park (where SL is located). The company was established in 1984 and is owned by the University of Oslo, the Oslo council, SIVA as well as several other prominent companies (oslotech.com, 2018). The Oslo Science Park was built with the purpose of commercializing science. The idea was that new Norwegian industry could emerge and thrive by clustering science, startups and universities and thus creating an innovation ecosystem. Today the Oslo Science Park is a 57 000 square-meter facility containing three incubators (SL, Aleap and ShareLab) and several research institutions.

#### Interview with Thea Wiig, Community Manager

Wiig started working for Oslo Tech in the autumn of 2017, and currently holds the position as a Community Manager. Her job is to get an overview of the different communities located at Oslo Science Park and create synergies between them.

#### Management

One of the goals at the Oslo Science Park is to explore out how the companies onsite can grow. Whether that is via linking the companies to potential customers, investors and suppliers or connecting companies that can learn from each other, access to a good internal and external network is something Wiig believes speeds up the companies' growth process.

When asked about how the members of the incubators at Oslo Science Park are connected with external partners, Wiig says that this happens in two ways. On one hand StartupLab and the Aleap team are actively trying to connect their members with the right people, and on the other hand some of the partnerships are made after random interactions at the Oslo Science Park.

In addition to placing companies next to each other at clean desks in an incubator, Wiig believes that it is important to actively intervene to achieve cooperation among the companies. In her view this is something the StartupLab team has been focusing on.

Wiig says that the Oslo Science Park does not have any formal cooperation with other science parks, but they communicate a lot with other communities. For instance, they have been visiting Silicon Valley and the Cambridge University center in Boston to expand their network and to get inspiration regarding the innovation ecosystem they are continuously building.

#### Infrastructure

*“We try to build this place in a certain way in order to achieve the network building and knowledge sharing we strive for.” (Wiig, 2018)*

Wiig says that to do so, openness is an important factor, and you need large social zones where people can meet informally by the coffee machine. In her view, it would be difficult to achieve the level of network building and knowledge sharing they aspire to by having many separated offices in a long hallway. At the Oslo Science Park, most of the offices and meeting rooms have glass walls to give the opportunity to the people working there to see each other and get used to observing what other people are doing. This is based on their attempt to create a culture for sharing and helping, which is the core of the model applied by the Oslo Science Park.

Wiig mentions that the Oslo Science Park is uniquely located due to the proximity to research institutions, universities and hospitals and not least the mix of top-notch scientists and entrepreneurs working under the same roof. According to her that can be an important foundation for nourishing cooperation as they strive to attract the best people within tech.

#### Services

The three incubators StartupLab, Aleap and ShareLab located at the Oslo Science Park are separate organizations/businesses running their own business. They all

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have separate agreements with service partners offering everything from legal and accounting services to services within PR and marketing.

Wiig mentions that they work on hosting different events at the Oslo Science Park. This can be everything from summer and winter pitch parties at StartupLab to courses and workshops shedding light on specific issues. Some of the events are limited to StartupLab members or members of Aleap while other events are open to everyone at the Oslo Science Park. Regardless of which incubator companies belong to, Wiig argues that there is always something happening at the Oslo Science park which is creating value for the companies either in terms of networking or knowledge transfer.

## 4.2 Interviews with Members Of StartupLab

### 4.2.1 Confrere

Confrere is a Norwegian company, founded in July 2017. Few months after starting the company, Confrere received an investment of NOK 1,5 million from StartupLab (Confrere, 2018). Confrere already has paying customers within the branches of doctors, psychology and several counseling services (Confrere, 2018). They are currently located at StartupLab, where they have been since the birth of the company.

Interview with Svein Willasen, CEO.

*“It is much easier to succeed when being stationed here than if you don't, as I have tried earlier. It has made a major difference for me, that's for sure!”* (Willasen, 2018)

### Management

As Willasen has been founder of many other companies, he knows just how difficult and fragile the start phase of a new venture can be. Willasen explains that the biggest challenge for a startup is often to get the first customer. Here, Willasen speaks highly of StartupLab, specifically regarding the corporate partners of StartupLab that are willing to invest time in their product, and together develop features and services that have provided Confrere with both clients and market visibility. Compared to Willasen's previous startups, he feels that StartupLab are



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great at facilitating connections to their external network. This has allowed the members to address some of the existing needs inhabited at the corporate partners. “... linking up with major companies as potential clients. This is a key success factor they have achieved here!” (Willasen, 2018). Willasen refers to StartupLab as the linkage between startups and major companies, and that the massive network StartupLab holds, is how they stand apart from other incubators.

Willasen explains how he feels StartupLab brings strong external validity, as SL has good reputation. Being a part of StartupLab means something more than: “...just being four people at each our home office...”. The bottom line is that members become part of a larger, and more attractive community that external parts eager to get involved with.

#### Infrastructure

While comparing his experience at StartupLab against previous work scenarios, he emphasizes that the environment has a positive and uplifting atmosphere to it. He continues: “Sharing an environment with other startups in the same situation, undertaking the same or similar problems, inspires us to keep going. It makes it easier not to give up”. Willasen explains how this is their main reason for being a part of StartupLab.

Willasen thinks that the office landscape makes it easy to get in touch with other startups and how it encourages members of the incubator to interact with one another. However, there’s a downside with StartupLab’s infrastructure and the open office landscape. Confrere often experience a noisy and disturbing environment. Willasen is not so enthusiastic about how close they sit next to other companies, and that the open area is also used for meetings. This has triggered loud conversations close by, having a negative and disruptive influence.

Confrere explains how the infrastructure has resulted in connections to other members. He has helped others, as others has helped them. Willasen has personally helped others with the development of software in their products, how they should organize and maybe in what direction they should move towards. In return, he feels he has received input in several areas, as well as specific cooperation with other startups for Confrere. For example, Willasen explained

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how he came in touch with a founder at StartupLab who happened be a doctor, and how Confrere got to pilot their product at a doctor's clinic. Willasen underlines the great impact the internal network has provided him in terms of connections with other founders, that he wouldn't have been able to establish elsewhere. He explains that most interactions and connections are on an informal base, and that it is easy to walk over to someone and exchange experiences and expertise. He feels that one of the main reasons for this, is the environment and location at StartupLab.

### Services

Confrere has had great usage of help with accounting and legal advice from lawyers. Another very helpful attribute, is the mentor program. Confrere was assigned a mentor from the start. In the accelerator program, Willasen had weekly conversations with his mentor. They received feedback and was challenged in areas where they needed to excel.

Another advantage Willasen experiences at StartupLab, is the underlying possibility for investments. This is also something Willasen has experienced to be difficult earlier; how to get introduced to potential investors and thereafter receive investments. "As StartupLab has a very large network for investments, the investors even come down to StartupLab and present themselves" (Willasen, 2018).

A gap at StartupLab, in Willasen's view, is the absence of technology experts that can provide specialized advice on how to technically improve the products. As both him and the CTO have technological background, StartupLab has been a perfect match for them as StartupLab is more business oriented, and thereby can help those with strong technological skills and experience to reach their target market. On the other hand, those startup teams lacking technological competence, will struggle. However, Willasen defines StartupLab as the best choice by far for technological startups compared to other incubators.

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#### 4.2.2 Technebies

Technebies was founded Nov. 1, 2017 and consists of three employees. With a great experience in software development, Technebies offers companies the possibility to assess possible candidates when recruiting software developers as full-time employees or short-term employment.

##### Interview with Heidi Frost, CEO

Heidi Frost is the CEO of Technebies, and it is her second time around at StartupLab. Three years ago, she worked at Hudley which was located at SL

##### Management

*“SL has in some way become an ‘investor-magnet’... triggering investors in Norway to be interested in technology companies associated with SL the reputation for participating at SL, can thereby exceed one and validate the company” (Frost, 2018)*

The network of managers at StartupLab has opened access to their external connections, and thereby the opportunity to create connections with a variety of different professionals, such as investors and potential customers. Frost explains that the amount of connections to the external network is left entirely up to each startup. “Nothing is forced upon you. No one at SL tells you what to do, or where to go”. Frost tells that SL can provide coaching, advice and they will challenge their members on business aspects when invited to, but in the end, it is up to each one how much they want to engage with SL directly and which available services they will opt in for. “If you don’t ask or make contact, you will get considerably less from the external network”.

As SL is a desirable community to be a part of, Frost explains how Technebies receives some external legitimacy and validation from being known as a member of SL. She refers to themselves as a small unknown company, stripped of any social media presence. When SL validates Technebies, doors open into network not easily attained by themselves.

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## Infrastructure

The openness in the coworking area, allows the startups to engage with one another, exchange experiences, learn, and challenge each other to excel. Frost emphasize that although the products and services vary significantly, the challenges and issues tend to be of the same character.

Frost enjoys the open area in the middle of SL. The area can be used by many at once and is perfect for lunch meetings, seminars and as a place to meet outside of offices. Even though it is an open area, Frost feels one can have private conversations without too much interruption. A major contrast to her first time at SL (when SL started); Frost remembers: “SL had the ugliest premises at ‘Forskningsparken’”. Even though the office landscape has evolved over time, there are only 6 meeting rooms, which are always fully booked. Frost is however happy for the possibilities to have ad hoc meetings, on a more informal basis. “I think the location and its facilities are of significant importance. It provides great opportunity to expand communication”.

Internally, Frost finds it easy to communicate and collaborate with other members at SL. However, it is an extreme shortage of time to spend with others. “The extreme shortage of time, people, money and resources, is something of a common denominator for startups at SL”. Frost finds it easy to exchange ideas and lessons learned with others over lunch, and in her view, there is a mutual understanding for each other’s problems. A certain reciprocity exists, where experience and knowledge are shared within the coworking community. This is often reflected on SL’s internal facebook page. Here one can reach out to other members who have experience with an issue which someone else may shed light on and help move forward.

Frost explains that another value add aspect of being a part of SL, is that it gives a unique sense of being “in on it together”. Whereas sitting alone in a home office often can be demoralizing and struggling, SL provides a secure and uplifting environment. Frost mentions casual meetings over lunch and “chats by the coffee machine” as situations in which people connect and share experiences from their companies and boosts each other’s moral.

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## Services

Frost feels that the “the spirit of SL is that things should predominantly be free of charge”, and thereby allowing startups with small budgets the possibility to attend seminars and programs. Technebies has consistently taken advantage of SL’s services. Among these, Frost lists: accounting, legal assistance, seminars, and breakfast- and lunch meetings as great areas for making connections with others, and as sources for knowledge sharing.

Further, Frost explains how Technebies were assigned a mentor who saw them through a very intensive 3 months-long accelerator program. The mentor challenged Technebies staff and guided them through many situations and scenarios a startup may face. And through the Founders Fund, companies can get access to direct funding at SL.

One of the services mentioned (contact person or a mentor) has allowed Technebies to send out a list of targets “dream customers” to the external corporate team, to explore if any of them can offer an introduction on their behalf. In this perspective, SL works as a linkage between Technebies and a much broader network. Frost emphasize the importance of establishing those first introductions with companies.

### 4.2.3 Intelecy

Intelecy is another rapidly-growing Norwegian technology company, founded January 2017. They specialize in providing solutions and tools to analyze production data for the manufacturing and processing industry (Intelecy, 2018). Their systems focus on machine learning in order to prevent breakdowns, predict failures, improve production processes and provide deep insight into operations (Intelecy, 2018).

#### Interview with Bertil Helseth, CEO

Bertil Helseth, alongside the other founders of Intelecy, has years of experience with control systems in the manufacturing industry and data logging in factories. With a broad insight in the industrial domain and machine operations, he and his colleagues wanted to explore the possibilities for better solutions than what existed at the time.

### Management

The managers at SL has provided Intelecyc with easy access to potential customers through their external network. As Intelecyc has not yet launched a specific product, SL has assisted with getting in touch with major companies as pilot customers to pilot their solutions.

Getting into SL is not easy. Companies accepted at SL are prequalified and have been through a thorough validation based on certain criteria. Helseth believes that once a company is accepted into SL, both the company and the founder receive external validation. Further, Helseth thinks this provides a certain demand, not easily obtain elsewhere. Intelecyc has received much of their investments elsewhere, but through a pitch party at SL, Intelecyc got in touch with an angel investor who would otherwise not know of their existence. Helseth believes it is highly positive being associated with SL and that it is much easier getting introduced to possible investors through SL's network.

### Infrastructure

Helseth and his team moved into SL's premises in Nov. 2016. At that time, they were located at clean desks, meaning that each day he brought his computer and occupied any vacant desk that day. Later, they moved to fixed desks, where the entire team could sit closer together, before finally moving to the second floor with their own dedicated office space. Helseth and his team have therefore been through all stages of SL. Helseth reflects on his journey and believes that infrastructure at SL is a good match for individuals and companies at the early startup phase. The infrastructure, regarding the open landscape, has allowed Helseth to engage and be challenged by others alongside the focus of further developing Intelecyc's concept. Also, providing room to grow and develop as a team and align to a larger network. He believes that is exactly what SL facilitates; the opportunity to move from a good idea and grow into a company.

SL has grown substantially and is still growing. With the additional floor in the building, it allows room for the more advanced companies to grow. Helseth reflects that once a company moves upstairs, they tend to lose bit of the contact

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and visibility to the SL community. “It’s a trade-off, but part of our decision to move upstairs was to get some more peace to get the work done”.

Where it is easy to start a dialogue with co-members, the barrier to ask assistance from external mentors is much higher. Helseth finds it difficult to ask for advice as mentors usually have a relatively full calendar and are often busy with their own jobs.

“Being here sharpens once senses. We have healthy internal competition. Many are in one place, and when you see someone succeed, it makes you want to succeed even more”. Helseth draws a picture of an environment where everyone is cheering for each other to succeed, and that he does not experience any envy or jealousy, just an inner drive wanting to excel. Some succeed and some fail at some points, and that is where Helseth sees the great benefits of SL; the internal network provides knowledge and experience from which one can learn required lessons.

#### Services

*“The SL-team is absolutely amazing! But it is as everything else in life: you must show initiative and ask. Things won’t just fall in your laps”*

(Helseth,2018)

Though SL’s recruitment service (Assel’s SL team), Intelec has hired four interns, who later turned in to full-time employees. Helseth finds the recruitment service to be of good use but emphasize that more competent ‘seniors’ are best found through other channels. Other services Intelec has benefitted from are accounting and legal assistance. Regarding the legal assistance services, Intelec has mostly used it when working on contracts.

Intelec has also been through the accelerator program. In this program, they received weekly coaching from a mentor. Helseth feels this has been beneficial to the company’s growth. Even if the mentor program is has concluded, and they do not have an assigned mentor any longer, Helseth says it is easy to have a chat with the SL team and receive further guidance. While in the accelerator program, Intelec developed an interest in communicating with the others. This was

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facilitated by the accelerator program, and is something Helseth is missing outside that program; i.e. an opportunity where CEO's can connect, swap ideas and exchange experiences.

One specific service provided at SL through their external network, is that each tenant gets a 120 000-dollar credit at Asher. This has been very valuable for Intelec in order to grow.

#### 4.2.4 Learnlink

Learnlink entered SL in 2016 after deciding to and went for a more take the company to the next level, with a more professional approach, after the initial phase of running it as a hobby alongside their studies. Learnlink provides a platform for one-to-one learning, where they connect parents with kids with learning disabilities with students who can help with learning and motivation (Learnlink, 2018).

Interview with Jonas Hyllseth Ryen (CEO), Johannes Berggren (CTO) and Tellef Tveit (CPO).

Unlike many of the other interviewed startups, Learnlink entered SL at a later stage, and they have therefore not been through the accelerator program.

#### Management

As young and inexperienced in the work life, one may not have had the time or opportunity yet to start building a professional network. Being part of SL has provided Learnlink with a much broader grasp on this and consider the SL membership as; "A shortcut to a very good network".

Tellef explains that SL offers everything Learnlink needs to succeed. They have been in dialog with mentors, who have been helping and challenging them for them to advance. One specific mentor was assigned to them in the beginning, and has followed them ever since. The mentor was of major help in the beginning of Learnlink's time at SL, and he still checks up on them and is easily accessible at his office. Learnlink has taken great advantage of the mentor's services. He was deeply involved in finding the right individuals to recruit for Learnlink's board.



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Further, Learnlink find it very easy to connect with the other members of the SL-team to explore issues and ask for guidance. However, their time is somewhat limited, making it difficult to get a thorough follow-up.

Through their mentor at SL, Learnlink has had weekly meetings with external experts from different industries. The mentor has also helped them get in contact with several people from senior executives in large firms to top leaders in large consulting companies, who have all been providing meaningful insight in to different industries and areas of expertise.

#### Infrastructure

Since Learnlink moved into SL, the locations have grown from being on the ground floor only to now occupying three floors in the building. Moving into SL, Learnlink witnessed no structure in form of working hours, only a tendency to schedule shared lunch time. With the open areas at the co-working place, they find it easy to get to know the others located around them. An example is that all the members at their board are people they have met at clean desks. Learnlink view the infrastructure positively as it nourishes a motivating atmosphere. On the other hand, sharing space with so many familiar people, can cause distractions and inefficiency in the long run: “For instance, every time you go for a coffee you often stop for a couple of chats along the way”.

At the beginning of Learnlink’s time at SL, the SL-team was located at the entrance to the facility. As SL has grown bigger, and the SL-team now knows everyone at the facility, the SL-team where constantly busy with members asking their advice. This is the reason why they since have created their own office space at the 1. floor, so they retire and work (to some extent) undisturbed as and when required.

The founders of Learnlink finds the lack of internal communication among the members dissatisfying. They miss a system for connecting SL members between startups with the same specialized expertise. An example is that one of the founders at Learnlink work with web development, similar to a large percentage of people at SL. They emphasize: “Everything is in place for the sharing of knowledge between the various companies and the professional groups at SL...

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However, there is no particular established channels for connecting all the web developers”. They understand that time is costly for startups, but they miss an arena where they could connect and learn from another members’ expertise.

Even though Learnlink thinks there are areas for improvement regarding the internal network, they emphasize that one of the significant values in being part of SL, is because of the co-working place. There is an established code of conduct that all members at SL is to share knowledge with one another. Also, the fact that one is located among like-minded people creates a form of its own vibe that enhance one’s motivation.

### Services

The mentors’ counselling has opened the possibilities for Learnlink to reach out to possible investors. The counseling received at SL, combined with the access to SL’s external network, are the main factors contributing to Learnlink’s funding.

Something the founders of Learnlink highly appreciates, is the external resource individuals that SL has put them in contact with through events such as “pitch parties”, “meet and greet” and “tech talks”. Their mentor has also brought in expertise exclusively to work with Learnlink. “These have been people with great experience across broad areas of expertise, who are helpful and easy to talk with”. They emphasize that collaborating with resourceful individuals has strengthened their careers and has provided much greater impact than communicating with peers in the same situation.

Both the accounting and legal services is something they used more frequently to begin with. More recently, there has been less interaction with these services as they feel they have learned most of what they need to know in order to move forward. However, the connection they now have with these services, allows them to quickly allows find solutions to most problems.

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#### 4.2.5 FundingPartner

FundingPartner has been a part of SL since March 2017, when they entered the DNB Next accelerator program. This program was founded by DNB, but hosted at SL. After the program concluded, FundingPartner located themselves at the clean desks at SL. FundingPartner connects small and medium sized companies who applies for loans with investors looking for good return on their investments.

##### Interview with Jørund Gjesvik

##### Management

*“Their network and their knowledge have been the most important assets for us as members of SL.”* (Gjesvik, 2018)

Most of the people in the SL team are former entrepreneurs, have had success and experience from starting and running businesses, which is something Gjesvik admires. He especially appreciates the possibility to have meetings and workshops with different people from the SL team, as well as having the opportunity to have access to their network. According to Gjesvik the SL team works as an intermediary between their members and potential partners, customers and investors. FundingPartner have often asked for introductions by SL team, which makes it easy for them to get in touch with people who normally would not respond to a direct approach.

Entering the accelerator program, FundingPartner was assigned a mentor that followed them throughout the program. FundingPartner had weekly scheduled meetings with the mentor, who challenged them and advised them in future directions. On his own initiative, the mentor brought top leaders from external large companies to SL who had individual sessions with FundingPartner. One main outcome from these sessions has been branding. Gjesvik explains how the mentor has continuous dialogs with many external partners who are interested in startups and who puts time and effort into helping with knowledge and advice. After the accelerator program, FundingPartner has had no formal scheduled meetings with the mentor, but the mentor and the rest of the SL-team, are easily accessible at the facility.

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Through workshops, they have been in dialog with the entire team. “This works very well. The SL-team is a very well composed team of people with different backgrounds and expertise. As all of them are very knowledgeable in their area of expertise, you as a startup get help with what you need”.

### Infrastructure

The initial three founders of FundingPartner started by sitting in the open landscape on the ground floor of SL. Gjesvik explains that since the beginning of being a newly established company with few employees, FundingPartner needed an affordable area fulfilling their requirements. SL was a perfect match for them. However, scaling up in size, the team now consists of 8 and the need for having their own space emerged. At the moment, they have occupied one of the three office spaces on the ground floor, located next to the co-working area.

Gjesvik thinks the location is great, with a nice building, good outdoor areas and a very short distance to Oslo centrum. He believes these features creates both a formal and informal atmosphere. Further, he explains how the infrastructure allows one to get in touch with a lot of people with significant experience and expertise. “With the open office landscape and so many unique startups, the threshold for communicating with each other reduces. If everyone had their own offices, this wouldn’t have happened at all!”.

A downside with the co-working environment, is that it can get noisy at times. One can easily be distracted as there are a lot of familiar faces. Another negative aspect with the clean desks, is that it can be difficult having confidential or sensitive conversations, or strategy discussions. But Gjesvik explains that there are six meeting rooms to accommodate those needs. Sometimes FundingPartner experience bad wireless internet, but mostly it is more than sufficient to meet their needs.

### Services

When it comes to services they have taken advantage of, Gjesvik mentions access to counseling of accounting and legal services which are available a couple of days a week.

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By having these services inhouse with the possibility of some free counseling introductions, he thinks it is easier to take the first step to take advantage of those services opposed to hiring such services externally. Otherwise he mentions how arrangements such as summer and winter pitch party and other social arrangements create possibilities for networking.

#### 4.2.6 Globus.ai

Globus.ai is a Norwegian based startup founded in 2017. Globus.ai offers AI (artificial intelligence) solutions for businesses and non-profitable organizations. Their platform (a cloud-based AI as a Service) is designed to increase speed of innovations, simplify sustainable decision making, and reduce data implementation cost (Globus.ai, 2018).

Interview with Tor-Håkon Hellebostad, Co-founder and CFO.

With the other co-founders located at Globus.ai's offices in Stavanger, Hellebostad has been the only member located at SL. Globus.ai has been a part of SL since October 2017 when they entered the accelerator program.

#### Management

Hellebostad explains how the exchanging of experience and expertise across companies, evolves as people interact with each other. He believes this comes as result of the selection process for entering SL. The high level of competences among the members combined with the SL-team's background, has created a community not easily attained elsewhere.

In the accelerator program, Globus.ai received additional follow-up by both the SL-team and DNB (the co-host of the accelerator program). Through the external partner DNB, the members of the program gained access to DNB's resources, such as their infrastructure, systems, etc. During this phase, Globus.ai was assigned weekly consultations with two mentors who followed them throughout the program. Hellebostad explains how the mentors have been a perfect match for them, as one of them has wide expertise within the same domain affiliated with Globus.ai. As the rest of the co-founders where located in Stavanger, Hellebostad became the focal point for the communication and orientation. However,

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Hellebostad explains that SL are good at keeping a dialog with the rest of the Globus.ai team when the topic is of a character best communicated with one of the others.

Through the external network, Globus.ai has gained lot of customer contacts. Hellebostad explains: “One side of it, is that you can show that you’re a member of SL, which is a quality stamp in itself”. Referring to the external validity Global.ai receives for being in SL’s community, Hellebostad emphasize the importance of having connections with the corporate partners at SL. Another beneficial outcome of SL’s connection with the corporate partners, is that the members are provided with an easy access for establishing communication with the “right” people in a broad selection of companies. Here the SL team takes the role as an intermediary which makes it a lot easier to clarify early if there exist opportunities for collaboration or not.

#### Infrastructure

Besides having good public transportation, SL is in an area that's convenient for startups and it is a meeting point for business with technological affiliation. Further, Hellebostad explains that SL’s connection to the community at Oslo Science Park combined with the short distance to the university (UiO), creates an arena for communication and collaboration. He emphasizes that it's important to look at all possibilities offered at Oslo Science Park, as many of the events is held with the intentions to create interaction across the incubators, communities and disciplines located under the same roof.

As Hellebostad is the only member of Globus.ai located at SL, he is based at a clean desk. While sitting at the clean desk, he feels that there is good foundation for getting to know the other entrepreneurs. He knows many of the other startup-teams and has good relations with many of them. The environment has provided Hellebostad a boost in aspiration and motivation. Being a part of SL’s community gives a feeling of being a part of something bigger. Therefore, he views the other startups as colleagues. However, Hellebostad emphasize that he and others are often very busy which does not allow time to easily attain a good dialog with everyone at all times.

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## Services

Hellebostad explains that several of SL's services has provided them with easy access to expertise and helped them simplify and overcome some of the obstacles startups encounter. One example is assistance with the recruitment process. Through SL's screening of possible candidates, Globus.ai has avoided the process of having to evaluate a large number of possible candidates in the first round. Another service is legal assistance. Through free consultations on Fridays, Globus.ai has taken great advantage of legal assistance. They have also benefited from having accounting counseling sessions.

Hellebostad feels that SL is very good at facilitating services that originates from the commercial aspect of running a startup; how to get investors, company development, how to reach customers, product pricing, etc. However, Hellebostad would like to have more focus on product development and design thinking, but emphasizes that there are some workshops that cover these areas.

"Meet the corporates" is something Globus.ai found very beneficial. It is a service provided by SL, where the members go through speed dates with several external companies. It has enabled connections with people providing many interesting possibilities. The access to external networks also provides the members with an easier process when looking for investors.

### 4.2.7 nLink

nLink was founded in 2012 with the goal of revolutionizing the construction industry. The company produces ceiling drilling robots for construction sites. nLink has been a member of StartupLab since 2014 and has not been part of the accelerator program.

Interview with Konrad Fagertun, co-founder and CPO.

## Management

Fagertun says that they have received a tremendous amount of help from being a member of StartupLab and emphasizes the magnitude of the SL team's work

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experience, network and ability to proactively connect their members with potential investors, customers or partners.

*“We have been introduced to a lot of people, many of whom have been “pulled in” our door by the StartupLab team and via the Founders Fund, and we have been invited to many happenings and events both domestic and abroad” (Fagertun, 2018)*

Fagertun also mentions that he has worked with incubators previously and visited most of the incubators in Norway. In his opinion StartupLab has the most professional incubator management and that the incubator is clearly one of the top incubators in Norway.

*“Several people in the StartupLab team have experienced great success in business and could easily have retired. However, they still work hard and sincerely want to help their members grow, which is something I have not observed in other incubators.” (Fagertun, 2018)*

He points out that they have received a lot of useful feedback on their business idea and other issues both from the StartupLab team and the management behind Founders Fund. They have received feedback on business related questions from relevant investors through introductions by people in the SL team who are responsible for the fund.

Fagertun believes that many entrepreneurs are not tough enough when it comes to reaching out to people and that they often need to be pushed to do so. In relation to that he understands his team does not necessarily know what is best for nLink always. However, when the SL team recommend them to have a meeting with an individual or a company that they believe could fit nLink’s interest, they always accept SL’s offer to arrange a meeting. This can happen by a formal meeting, but most of the time such interactions happen when members of the SL team pull people in their door. He can remember people from the SL team operating as an intermediary on many occasions pulling decision makers from large corporations into their office and telling them: *“You have to talk to these robot guys. They are*



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*the best, and I really recommend them.*” He believes that this is an important way in which the SL team connects their members with external partners.

Fagertun emphasize the importance and the quality of the internal network available at SL. According to him this is connected to the selection policy and SL’s reputation. Over the years, SL has become one of the most popular incubators for tech startups, which again makes it harder for companies to enter the incubator and arguably increases the quality of the network available via the members of SL. As an example, he mentions a time when he was operating as a board member for another member of SL. They needed to partner up with a specific department in a specific company. By coincidence an employee of another member at SL happened to have worked in that specific department for 8 years and could therefore make the introduction. *“It’s strange, but such coincidences happen all the time at StartupLab.”*

#### Infrastructure

Regarding the location Fagertun says that it is beneficial to be located next to the subway, which is practical for both visitors and when going to meetings. He also mentions that by being at the Oslo Science Park and close to Blindern, they have access to a lot of happenings and are close to many interesting people.

Fagertun has been part of nLink since before the company joined StartupLab and has experienced all the possible office settings at StartupLab, moving around from open and fixed desk in the basement to having their own office on the first floor which is where they are today. He says that they enjoyed operating from clean and fixed desk in the basement. At this stage, they joined absolutely everything of both social and professional events, which made it possible to build great relationships with other members and expand their network. He also mentions that as nLink grew they felt the need for a quieter environment where it was possible to focus without being interrupted by noise. Today they are located on the first floor with their own office which they find more suitable in their current stage.

#### Services

By being a member of SL, they have access to different services, and most importantly easy access to a large and variable network. nLink used legal

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assistance in their start phase at SL and has later become customers due to the initial connection. Through the connection to SL's Founders Fund, nLink has received a lot of advice and feedback on future directions. Through the managers' connections, the external founders in Founders Fund often attend events at SL. They are also bringing some of their external connections along to these events, and suddenly this gives the opportunity to connect to an even broader network.

*“It is a membership with the possibility to gain access to an extensive network, not just an office space. Losing access to the extensive network is why we find it hard to move from StartupLab.”* (Fagertun, 2018)

Fagertun explains there are a lot of events happening at SL, both formal and informal. With great speakers, good people with relevant experience and prominent individuals in the Norwegian society, members get connections with external nodes that they could not otherwise obtain on their own. Fagertun lists the prime minister Erna Solberg, the Norwegian King and the Icelandic President as people they been in contact with due to SL. Being in contact with them has been great in terms of media coverage.

## 5.0 Discussion

### 5.1 Management

Based on the theoretical framework of successful incubator criterias and essential aspects of network building, this paper argue that the management of the program can be discussed through member selection, management's network, experience and knowledge, and managers' ability to connect nodes (see Figure 1 for an overview of the findings) (Lewis, Harper-Anderson & Molnar, 2011; Theodorakopoulos, Kakabadse, & McGowan, 2014; Smilor and Gill, 1986; Peters et al, 2004; Granovetter, 1974; Eveleens, van Rijnssoever, & Niesten, 2017).

#### 5.1.1 The management's network, experience and knowledge

*“The most important aspect of an incubator, is that the individuals managing the incubator have a large network and has experience and*

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*insight into what entrepreneurs need, and that the managers can help introduce the entrepreneurs to external people.” (Assev, 2018)*

By quoting one of the managers at the SL-team, the main essence of SL's thoughts on running the incubator is portrayed. The findings suggest that the managers' external network is how SL stand apart from other Norwegian-based incubators. The members portray the managers to be knowledgeable and experienced, and passionate about their work. Without evaluating or studying the breadth and depth to the managers' external network, the common perception among the interviewed members is that the access to the massive network (findings entail) is a key factor at SL. From the findings, the subjects portray scenarios and specific situations where they have been connected to potential customers, investors, partners, etc. from the external network. Through the nodes affiliated with the incubator network, being universities, incubators managers, consultants, investors and other startups (Eveleens, van Rijnsoever, & Niesten, 2017), the managers' network allows members to form connections with external nodes that the literature portrays to enable information flow and knowledge sharing (Ipe, 2003) (Wang & Noe, 2010). The result is that through the SL-managers' previous experience combined with their external network, this opens up for connections between nodes, allowing knowledge sharing and creation of valuable outcome for SL's members. Ergo, leading the members to benefit from a managers' external network as it brings in information and new ideas (Krebs & Holley, 2006).

*“... linking up with major companies as potential clients. This is a key success factor they have achieved here!” (Confrere).*

*“Their network and their knowledge have been the most important assets for us as members of SL.” (FundingPartner)*

A common perception among the interviewed members is that the success of SL is that most of the people in the SL team are former entrepreneurs, they have had previous success in starting and running businesses of their own and gained their own hard-earned experience. Through the managers, members have the possibility to have meetings and workshops with different people from the SL team and learn

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from their experience and knowledge (See Figure 1). The interviewed members strongly emphasized the magnitude of SL team's work experience, network and ability to proactively connect their members with potential investors, customers or partners.

Through the managers' external network, members gain the possibility to exploit and profit from the opportunities within the incubator (Shane and Venktaraman, 2000). These opportunities to harvest essential knowledge, not easily obtained elsewhere, can be found within networks. Through the manager's external network, members have the possibility to be connected to external nodes not easily accessible elsewhere (See Figure 1).

#### 5.1.2 Managers' ability to connect nodes

Pettersen et al. (2015) emphasize the importance of networking capability when it comes to different parts of company development, and Pettersen et al. (2016) enlighten how access to and exploitation of larger networks can help startups learn faster, and thus develop faster. The findings entail that the management team is opening its network to the members in a proactive way which is indirectly improving the members networking capabilities. This happens partly because the combined SL-team gives the members access to a large and heterogeneous network because of their different working experiences etc., but also because of the way the SL team connects their members with different nodes. A pattern observed from interviewing the sample of members at SL is that people from the SL team are very helpful in introducing the members to relevant people in their network. This enables the members to create connections with nodes that normally would be difficult to get in touch with.

Peters et al (2004) shine a light on the importance of having a *broad based, loosely connected network*, and argue that an incubator can create value for its members by operating as an intermediary to a larger set of networks. The findings illustrate that this is very much the case at SL, and an important and composed way in which the SL team creates value for their members. Moreover, the findings strongly emphasize the importance of the managers' external network

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connections. These nodes have throughout the interviews been a major influence of the incubatees' ability to evolve and expand, test out products, establishing pilot customers, and further introduction to an even broader network.

As Krebs and Holley (2006) proclaims the importance of managers' ability to connect members, Cantù et al. (2015) argue that there is a shortage of research into managers ability to connect members with external nodes. Considering the importance of connecting members to managers' external network, Eveleens et al (2017) lists the following nodes besides incubators management as type of nodes affiliated with a startup's network: universities, consultants, investors and other startups. The relational characteristics among members and the managers at SL (especially their mentor), tend to be friendship, but occasionally also operational, and the exchange of advice, assets or information (Eveleens, van Rijnsoever, & Niesten, 2017). Establishing that the members inhabit a personal connection with the mentor, and relations to the others at the SL team, the managers' ability to connect members to other members is crucial to avoid slow generation of connections (Krebs & Holley, 2006). The same goes for their ability to connect members to their external network to connect consultants and possible investors to the community. Based on the findings, the managers are good at making the introduction between nodes situated at SL.

*“We have been introduced to a lot of people, many people have been “pulled in” our door by the StartupLab team and by Founders Fund and we have been invited to many happenings and events both domestic and abroad” (nLink)*

This intermediary role is displayed both on a formal and informal basis. Often these encounters happen informally and loosely as the managers introduce members and visiting external nodes without planned meetings. A common perception is that the managers' ability to link nodes, combined with their large external network, is the core of SL. As the literature entails, the competency from the managers to configure hard and soft elements of the business incubation environment is important to shape relational context within (Theodorakopoulos, Kakabadse, & McGowan, 2014). As Krebs & Holley (2006) suggests, managers in incubators should have: *“certain social skills, the vision and the energy to*

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*connect nodes.*” This is arguably something many individuals in the SL team are good at, and something the interviewed members appreciate. However, there are approximately 350 entrepreneurs divided on 82 companies at SL. With 12 people in the SL team, one can argue that the capacity to manage and follow up all the members can be limited. This may affect the SL teams’ ability to connect their members with nodes from their network and can prevent their members from getting in touch with the right people at the right time.

*“SL’s connection with the corporate partners, is that the members are provided with an easy access for establishing communication with the “right” people in a broad selection of companies. Here the SL team takes the role as an intermediary which makes it a lot easier to clarify early if there exist opportunities for collaboration or not. (Globus.ai)*

Another important aspect of managers’ ability to connect nodes is the relational characteristics between the managers and the members at the incubator, as well as their ability to “knit the net” (Krebs & Holley, 2006). As previously discussed, the managers external network is crucial in the essence of branching out to their members’ network, to ensure companies learn faster and thereby allowing startups to develop in a positive direction (Pettersen et al. 2016). This is where incubators play an important role (Cantù, Ylimäki, Sirén, & Nickell, 2015). Continuing the thought of “knit the net” (Krebs & Holley, 2006), the members of SL largely benefits of the managers’ external network as it brings new ideas and information flow. Hereby allowing the managers to create linkages among several clusters/groups, which again forms new connections. This can be exemplified by how SL’s partners connect the members of SL with the managers as intermediaries in the equation. Creating connections with this external network opens the door for further introductions to the partners’ network (Figure 1).

From the study by Krebs and Holley (2006), phases for creating a vibrant community network is portrayed. As the community grows and the managers learn of the members’ goals, skills, successes and failures, the managers gain the ability to weave nodes leading to new connections (Krebs & Holley, 2006). The findings reveal that the members have a strong relational connection with their mentor and that managers are good at maintaining these connections. By

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minimizing the path distance among the members throughout SL, the managers have opened the community for better workflow, information exchange and knowledge sharing (Krebs & Holley, 2006) (See Figure 1).

A downside to this study is that many of the interviewed members have the interviewed manager (Rolf Assev) as a mentor. One can argue that the study lacks some depth around how the different managers influence the network facilitation for SL's members.

### 5.1.3 Entry/selection policy

Evaluating SL's selection policy of member acceptance into SL, an interesting synergy effect is revealed. As the incubatee selection policy is viewed as a critical success factor within incubators (Theodorakopoulos, Kakabadse, & McGowan, 2014), one can very much claim that is the case in SL. Combining the members' high survival rate, and the previously mentioned, experienced managers and their ability to connect nodes, SL inhabits a strong and positive reputation. This positive reputation has made it desirable to be a part of SL, resulting in a vast number of applicants. SL's members go through a thorough selection process to ensure acceptance of the right startup teams fitting their environment and purpose, resulting in acceptance of approx. 10 % of the applicants (Assev, 2014; startuplab.no, 2014). Through the selection of the right teams into SL, SL becomes desirable for potential external investors, customers and partners. This is where the synergy unfolds. As teams get accepted into SL, they receive external validity and acceptance. By ensuring quality at SL, the outside world wants to interact with the community at SL. The managers external network and their ability to connect these nodes also makes it desirable to apply at SL.

*“SL has in some way become an ‘investor-magnet’... triggering investors in Norway to be interested in technology companies associated with SL. The reputation for participating at SL, can thereby exceed one and validate the company” (Technebies).*

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*“Getting into SL is not easy. Companies accepted at SL are prequalified and have been through a thorough validation on certain criteria. Being accepted into SL, both the company and the founder receives legitimation from the outworld” (Intelecy)*

In addition to creating synergies in terms of reputation and external validity, the selection policy, as mentioned earlier, also increases the quality of the members that are accepted into SL. This is not only making it easier for the members to be more attractive externally, it also provides the members with a better internal network, as the screened members may have previous experience and arrives with external knowledge.

*“The high level of competences among the members combined with the SL-team’s background, has created a community not easily attained elsewhere”. (Globus.ai)*

This study has not focused on the background of members accepted at SL, nor the depth of the selection process for entering SL, and thus has not necessarily revealed any coherence between these factors. One can argue that through this selection process potential startups that does not fit SL’s criteria and are left out of the community, may result in lack of diversity. It's important with diverse community with heterogeneous nodes in the network, as a vibrant network maintain linkages to diverse nodes and clusters (Krebs & Holley, 2006)



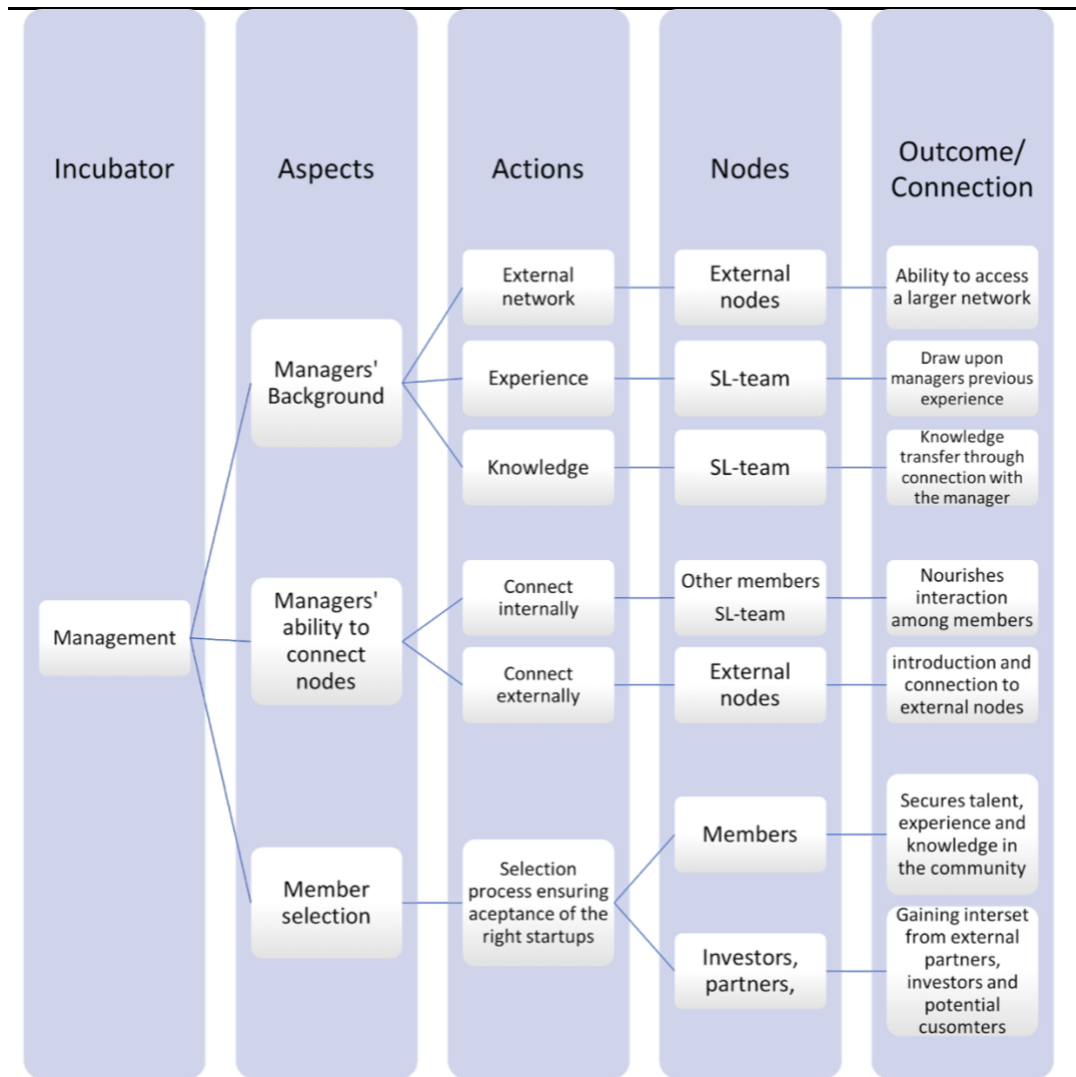


Figure 1- Management

## 5.2 Infrastructure

As the literature entitles, some dominant elements to the infrastructure are important for an incubator to be successful (shared office space and resources, the proximity to a major university, access to broadband high-speed internet and access to specialized equipment and laboratories) (Lewis, Harper-Anderson & Molnar, 2011; Theodorakopoulos, Kakabadse, & McGowan, 2014; Smilor and Gill, 1986). Evaluating these elements, combined with the literature surrounding network building, will be the foundation for this discussion part. As the interviews unfolded, the findings illustrated some elements to be more crucial and some to have close to no influence on the network. Within the term of the incubators infrastructure, landscape, location and infrastructure’s attributes were common

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*denominators throughout the interviews. In these categories, several factors appeared to have an influence on the facilitation of the network (see figure 2).*

### 5.2.1 Landscape

As the review by Eveleens, van Rijnsouwer and Niesten (2017) states; network affected by network-based incubation has a common interpretation of the involved nodes, being universities, incubators managers, consultants, investors and other startups. The interviewed subjects largely agreed upon the fact that the open landscape allowed them to establish connections with other startups and with the incubator managers.

“...the open landscape has allowed Intelec to spar and be challenged by others when developing Intelec’s concept. Also, providing a room to grow and develop a team and align a larger network” (Intelec)

Through the open landscape, glass walls and how everyone is easily accessible, has created both weak and strong connections among the nodes located within the walls of SL. The interviews gave the understanding that connections of several relational characteristics emerge. The subjects emphasize that random encounters, working next to other startups, and being situated with startups in the same situation, nourish an atmosphere for creating friendship and cooperation with both mentors/managers and other members. These loose and informal connections have allowed the members of the incubator to form stronger connections with the nodes situated close-by. This aligns with the study by Krebs and Holley (2006) that nodes located close-by tend to connect. The path length of these connections is short, as face to face relations with the other nodes are the foundation for the connection, as well as the nodes are situated in the same area. One can argue that if the community at SL were left unmanaged, the infrastructure would on its own drive homogeneous nodes and closely related nodes to connect (Krebs & Holley, 2006).

The interviewed manager strongly emphasized the importance of the infrastructure as a tool to create the so-called “planned coincidences”. The phrase

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used by Assev (SL manager) refers to the construction of the facility. By having the landscape as an open meeting place, the result is a lot of informal, and somewhat random, meetings. Because of these connections, the findings entailed by SL's members illustrate that knowledge is shared through connections by face-to-face communications (Wang & Noe, 2010). The networks facilitation can therefore be addressed through the knowledge-based view (Eveleens, van Rijnsoever, & Niesten, 2017). With a landscape that nourishes and encourages members to interact, the value of the knowledge as a resource emerges (Håkansson and Waluszewski, 2007). These relationships are a strong foundation of the internal network at SL as it leads startups to create shared values together.

### 5.2.2 Office solutions

“the office landscape makes it easy to get in touch with other startups and how it encourages members of the incubator to interact with one another”  
(Confrere)

Besides the open landscape structure, SL offers three types of working possibilities. There is the clean desk (where members find a new place to sit every day they arrive), the fixed desk (members have their own work place situated in an open environment) and closed offices (own office space with glass walls). Each of the office solutions has their own advantages and disadvantages.

On the clean desk, members experience a great amount of interaction with other members. As one sits next to different people almost every day, combined with the SL culture, the interviewed subjects find it easy to connect with the surrounding members. The management argues that the office landscape is essential in terms of creating a platform at SL to enable creation of these loose and informal connections. On the other hand, even though it is great in terms of building network, the office solution can make it difficult to work due to the disturbances from other members.

The fixed desk generates a lot of the same outcome as the clean desk. However, the findings suggest that the members located in these areas, form stronger relational connections. Several of the interviewed members has been located at

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fixed desk and proclaims to have initiated connections of strong relational characteristics leading to cooperation and information flow. With entire startup-teams located together in an open landscape, it inhabits the possibility for plural connections between any two nodes to occur. This is a common feature in a robust and effective network (Krebs & Holley, 2006). Much like the downside of the clean desk, the environment can be disturbing and thus making it more difficult to concentrate on task related objectives.

“With the open office landscape and so many unique startups, the threshold for communicating with each other minimize. If everyone had their own offices, this wouldn’t have happened at all!” (FundingPartner)

Some of the interviewed candidates are situated in closed offices. Even though these have glass walls, both members and the managers experience that this makes the startups more introvert over time. The startups in closed offices still interact at the events, lunches etc., but miss out on the day to day nourishment of connections as portrayed in the two previously mentioned situations. The interviewed candidates located at closed offices are startups who have reached a certain stage that demands a more closed environment for work to be done. These members however, has lost some of the overview of the SL members as they do not interact with others in the same way they did while being stationed at clean or fixed desks.

While evaluating the importance of SL’s internet on the foundation of network, the findings find no coherence. At times, it seems to be more of a source of frustration, than a direct linkage to network building. However, one can argue that the absence of internet limits the possibility for external communication, and to some extent internally. On the other hand, a well-functioning internet is a foundation for communication. In this study, the interviewed startups experience no affiliation between the quality of the internet and SL’s facilitation of network building.

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### 5.2.3 Location

Through the interviewed subjects affiliated with SL, a clear strategy regarding the infrastructure unfolded. To create connections among the nodes situated at SL, the management emphasized the importance of the landscape as well as the location of the facility. With proximity to major universities, research institutes and university hospitals, and being situated at Oslo Science Park in the most knowledge-oriented area in Norway (forskningsparken.no, 2018) creates an environment for both homogeneous and heterogeneous nodes to be connected (see Figure 2).

The question however, is whether the locations nourish connections. The findings suggest a perceived positive linkage between SL's location and the area surrounding the incubator, but a clear and direct linkage was not observed. On one hand, SL's location aligns with what the literature proclaims to be a key criterion of success in terms of a successful incubator (Theodorakopoulos, Kakabadse, & McGowan, 2014). On the other hand, the findings did not portray SL's location as an influential aspect on the network facilitation. However, one can argue that the location of SL is beneficial in terms of being connected to a larger network at both Oslo Science Park and the proximity to external nodes such as the university hospital, the University in Oslo and high technological environment. But the study refers to the managers' ability to interact and connect members at SL to the surrounding nodes to be essential. The reason for absence of specific examples may be found in the lack of depth on the study regarding SL's location and its direct potential to connect external nodes situated in the area.

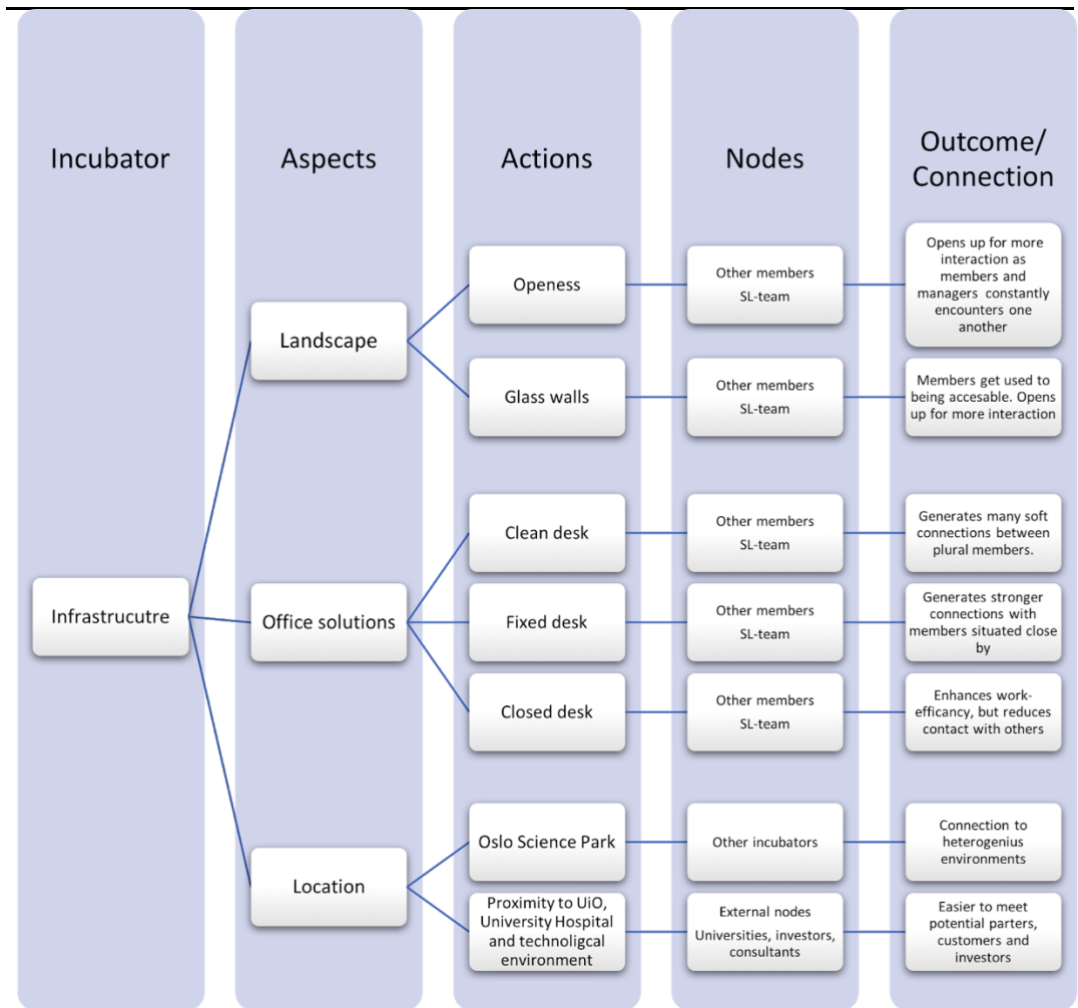


Figure 2 - Infrastructure

### 5.3 Support Services

While analyzing the interviews and evaluating SL’s services onto the foundation for network building, a clear pattern arises. By analysing the support services through some subsections, one can more easily get a grasp of the breadth of the services’ effect on the network building. Analyzing the services within the accelerator program, mentoring, events and developmental services, one can portray an image of where connections with different types of nodes are facilitated (see figure 3).

#### 5.3.1 Accelerator program

Several subjects emphasized that through SL’s accelerator program they made friendships with other startups, and both friendship and cooperation with the

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assigned mentor. Through the intensive three months accelerator program, these loose and informal connections allowed the members of the incubator to form stronger connections with the nodes situated close-by. Again, creating connections with short path length face-to-face relations with the other nodes. During this period, more resources are at disposal and the mentors/managers have weekly follow-ups ensuring progress.

Through SL's corporate partners, the SL team and the members have observed collaboration among the members and the corporate partners. With the members looking for potential partners, customers, etc., and the corporate partners looking to either invest, collaborate, buy, etc., one has witnessed a ripple effect as more and more connections arise.

### 5.3.2 Events

SL holds a wide range of events, such as "Tech-talks", "meet the corporate", "summer- and- winter pitch party" and more. The interviewed members also emphasised the importance of creating small connections over lunch events to connect with internal nodes, that could potentially lead to collaboration and sharing of knowledge and resources. With "Tech talks", SL invites external expertise to share knowledge and discuss with members on a specific topic. This allows members to get a connection to external individuals with knowledge in a specific domain, as well as creating an arena for members with common interests or needs to meet. Through these events internal nodes are connected as homogeneous nodes interact in the same environment. Further, the members are introduced to external nodes that hosts the "Tech-Talks" and are valuable in the essence of connecting external knowledge on the topic of interests. "Tech-talks" is a perfect of example of how the incubator can facilitate a network for extracting knowledge and shows the importance of the network in knowledge-based view regarding interpretation and how to acquire knowledge (Eveleens, van Rijnsoever, & Niesten, 2017).

The interviewed members emphasised the importance of creating these small connections to other members at events, meetings or lunch. Through events like "meet the corporates" members initiate loose and informal connections to external

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nodes through rounds of speed dates. The perceived outcome for the members are that it generates many soft connections to external nodes that can lead to investments, cooperation and knowledge transfer.

“...through speed dates with many external companies. It has created connections to people with many interesting possibilities. The access to external network also provides the members with an easier process when looking for investors” (Globus.ai on “Meet the Corporates”).

Also, the pitch parties allow members to get introduced to external nodes. Through presentations of their startups’ business they can form connections to both external and internal nodes that may share the same interests. Potential outcome is portrayed to include investments, collaboration and connection to buyers.

“These are persons that has great experience with broad expertise areas, that are helpful and easy to talk with. Collaborating with resource persons further down career-wise, has provided us with much greater impact than communicating with persons in the same situation” (Learnlink on events hosted at SL).

### 5.3.3 Developmental services

As technology entrepreneurs tend to lack both the focus and the insight on the commercial side of the entrepreneurial process (Evers et al., 2014), services at SL are made to fill those gaps. Through support services such as legal services, accounting counselling, marketing strategizing, funding and recruitment, the members are connected with experienced people within these fields. These contacts can be valuable in the essence of knowledge transfer (see Figure 3) and is an unique aspect of being a part of the incubator (Díez-Vial & Fernández-Olmos, 2015)(Lambooy, 2010).

Through the external validity from being a part of the community, SL provides members an easier access to external nodes that can be crucial in the essence of access to capital, connection to expertise, potential customers and investment (see



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Figure 3). The findings suggest that these services are sources contributing to the development of the startups, and an important part of facilitating a network for its members to harvest valuable resources, knowledge and investment *aligned with the needs of their startup* (Aldrich, 1999). The members entail that the services provide them with an external network not easily attained elsewhere.

The literature states that support services, such as the ones offered at SL, is criteria for a successful incubator (Theodorakopoulos, Kakabadse, & McGowan, 2014). By creating contact with a legal or accounting service, the member is provided with resource persons that allow knowledge transfer of crucial insight and expertise that are affordable for startups. Further, the findings portray legal assistance to be beneficial when developing contracts and accounting assistance to create connections to nodes that allows knowledge transfer to the members.

Help with recruitment makes it possible for the members to save time on this issue and allocate their time to more important issues. The findings suggest that this service helps the members with the first screening of applicants and that it connects the members with mostly young professionals. The outcome for the members is that they have more time to spend on more important issues, which is a key factor at SL: *“To help the members spend their time as effectively as possible to excel”*.

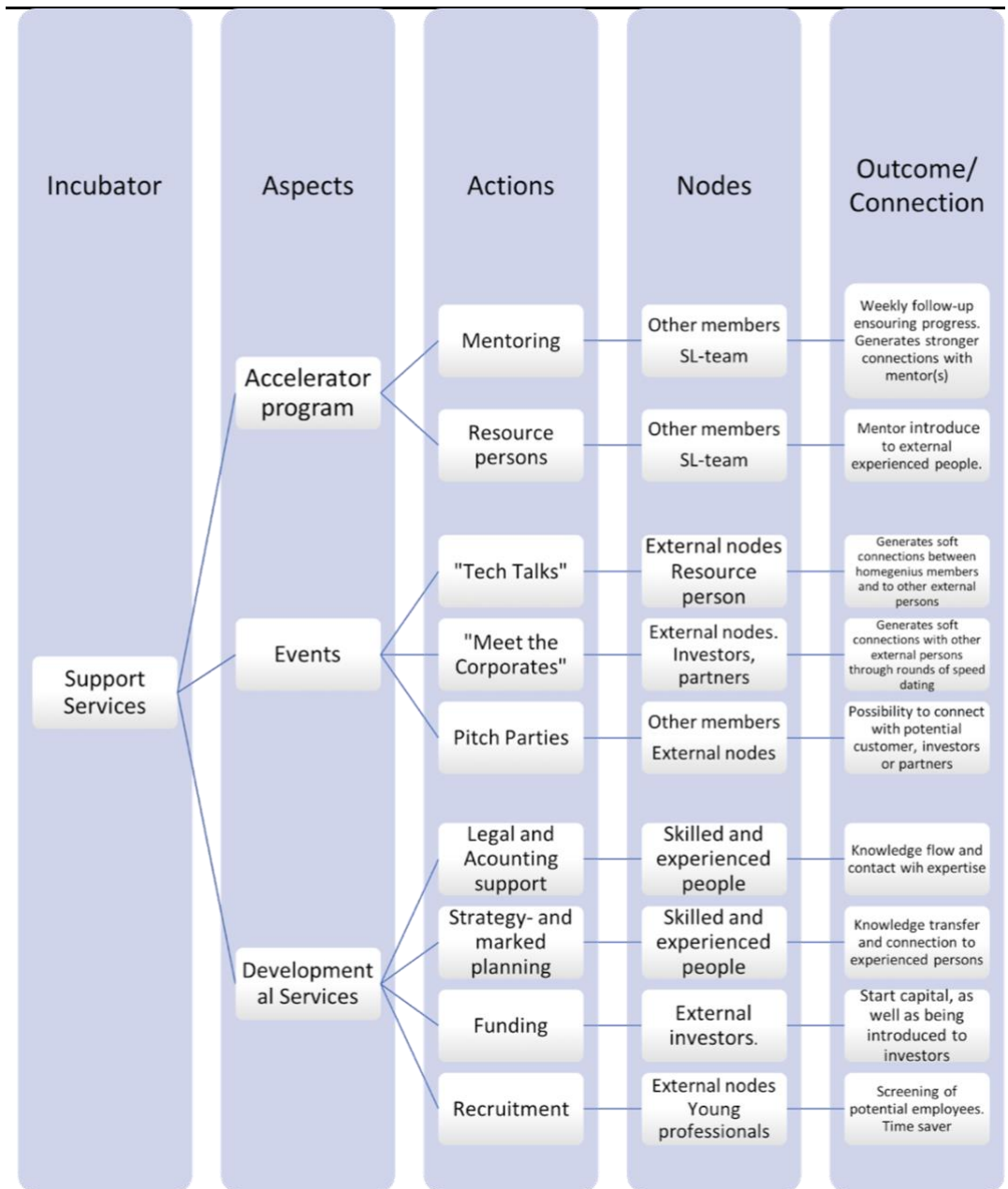


Figure 3 - Support Service

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## 6.0 Implications

The implications of this study can be summarized accordingly:

- Infrastructure as the baseline for internal network building
- Management as the crucial factor for both internal and external network building
- Support Services as a tool to connect members to both internal and external nodes to gain access to investments, customers, experience and knowledge, and the possibility to collaborate with external and internal actors

### **Infrastructure as the baseline for internal network building**

Based on the findings, the infrastructure can be viewed as the baseline for network building. A purposeful and intentional specialized infrastructure is the foundation for creating loose and informal connections among the members. The connections based on friendship and cooperation (Eveleens, van Rijnsouwer, & Niesten, 2017) can open for new connections with other nodes as a door opens to a broader network. The open landscape opens for interactions with incubator managers and other startups allowing the internal nodes to create relational connections with short path length. The result is enhanced information flow and collaboration among the local nodes.

It was hard to find evidence of the importance of the location onto the facilitation of network. One can argue that the proximity to university and technological environment provides easy access to other environments. And this combined with introductions made by the incubator managers can allow new connections that opens for new customers and collaboration. Nevertheless, this study cannot find data supporting this.

In terms of the infrastructure, this study implicates that the baseline for the network building lies in the construction of the incubators' infrastructure. To connect local nodes, the landscape must be open, have meeting points for members to interact and have an uplifting atmosphere as this nourishes and encourages a positive culture of sharing and collaboration. To succeed with

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informal and loose connections among members in an incubator, the incubator must focus on the foundation of its infrastructure.

### **Management as the utmost important factor**

The study confirms a lot of previous research regarding the management's importance of creating a vibrant and diverse environment. Regarding the external network, this study emphasizes the importance of managers' experience and knowledge. Through the study the managers' external network reveals itself as the most important factor for the members of the incubator. However, to connect members to various nodes in the external network, the study finds managers' ability to link nodes to be the crucial factor for network facilitating. This should do with the fact that the management is the prominent and crucial factor to the networks sustainability.

Further, an interesting aspect regarding the selection policy was revealed. As the selection processes ensures a community of knowledgeable and desirable members for the outworld, a strong interest from external nodes was portrayed. Referred to as a synergy effect in the discussion part, the highly competent community attracts external nodes such as partners, potential customers and investors, who again makes it desirable for startups to apply at SL. The strong and positive reputation for being a part of SL, brings external validity to its members.

In terms of the management, this study implicates the management as the crucial factor for network building. To connect external nodes to the incubators members, incubators must ensure that the managers running the incubators possess a large external network and inhabits the ability and social skills to connect nodes.

### **Support Services as a tool to connect members to both internal and external nodes**

A lot of previous research portrays support services as an important criterion for successful incubators. With services helping with developmental aspects of the startups process, the members form connections with skilled individuals who can

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transfer knowledge and experience in business operation. These connections are without doubt beneficial for the startups to survive and excel.

The support services regarding incubators' facilitation of events are important to broaden the members network. Members are introduced with both internal and external nodes, that generates many soft connections that can lead to investments, cooperation and knowledge transfer. The study however portrays the managements' external network and their ability to connect nodes as the fundamental aspect of the events.

### 7.0 Limitations and Suggestions for Future Research

First, it is important to emphasize that this paper is practically oriented and based solely on the interviews with individuals from the respective startups and management at SL and Oslo Science Park. The broad conceptualization of the available literature made it challenge to connect the related theory to the findings due to the study's explorative and practical nature.

Even though interviewing 7 members at SL, a manager at SL, and a community manager at Oslo Science Park, a possible limitation to this study is that many of the interviewed members has the interviewed SL manager as a mentor. One can argue that the study lacks some depth around how the different managers may influence the network facilitation for SL's members. Another limitation regarding the sample selection is shown in the lack of findings surrounding the location-aspect of the incubator. By interviewing individuals affiliated with surrounding incubators and/or nodes geographically located in the same area, the findings may have better portrayed SL's visibility and connection in the local community. Further, we believe it may strengthen the findings if one did a comparison with another incubator with geographical proximity to the studied incubator.

With a qualitative study based on open-ended, semi structured interviews, the study is difficult to replicate. All the findings provided are context dependent, making us unable to generalize the findings to other countries and industries.

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As the interviews may deviate from each other based on different directions during the interview, the study therefore has low external reliability. Moreover, with the small sample size (less than 10 % of the members at SL), the external validity is low and thus making it difficult to generalize the findings. With the low external validity of this study, it would be interesting to conduct the same study in other incubators and countries to see if the results provide reliable outcome. A larger sample of companies and managers could also be interesting.

We also acknowledge that due to an incubator's complexity, the network facilitation may be subject to other relationships than the once portrayed in this thesis. Other variables that are left out of the model in this study may also affect network facilitation in an incubator such as SL

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Appendix