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著者(和文)	LaitinenJouniAnter
Author(English)	Jouni Laitinen
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Theorizing Incentive Usage to Encourage Knowledge Sharing – Case of Young Startups

By

Jouni A. Laitinen

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Professor Dai Senoo

Department of Industrial Engineering and Management
Graduate School of Decision Science and Technology
Tokyo Institute of Technology

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Abstract

Innovation is critical for the survival of companies. This fact applies to companies both big and small. In the pursuit of improved organizational innovation capability, knowledge has become a critical resource that companies need to manage, which is especially important for companies in so-called knowledge-intensive fields such as software, and particularly for young startups. As innovations are created through the creation of new knowledge, including from the interaction of infrequently interacting actors, knowledge sharing activities have become more critical than ever.

Knowledge sharing, however, is a voluntary activity, which means that managers cannot just use force to make employees share more. Instead, managers needs to focus on how to encourage employees to engage in knowledge sharing activities. One way to do this is through the use of incentives. However, previous research on incentive usage to encourage knowledge sharing have resulted in conflicting results, thus pointing towards a need for a better theory on incentive usage.

This dissertation covers two major topics: first, the use and customization of incentive systems with a focus on how to use incentives to encourage knowledge sharing. Second, knowledge sharing motivation in startups. Finally, these two topics are then integrated to contribute to the management practices of young startups.

The results presented in this dissertation show that incentive system customization is not as simple as it has been previously thought to be. In more detail, incentive system designers need to consider factors not only regarding the actual incentive instrument but also how the system fits both short-term and long-term factors inside the company in addition to individual-level factors. As a result of the research carried out for this dissertation, an incentive customization framework is proposed to help managers in the incentive design process.

In regards to knowledge sharing in young startups, the results show that knowledge sharing intention is founded purely founded on the intrinsic motivation of the sharer. Additionally, it is shown that vision for the company and the company's organizational culture positively influence knowledge sharing motivation of its members. These results highlight the importance of daily activities of the founders and the core team to support the development of the organization's knowledge sharing culture.

Together these results show that if incentives to encourage knowledge sharing are to be used inside young startups, they need to be focused on changing the culture of sharing inside the organization and the sharing behavior of its members. With the careful use of the customization framework, suitable incentives can be designed in such a way that they will result in the wanted outcome of increased sharing outcome without hurting the general organizational culture.

Finally, based on the research results presented in this dissertation, future research directions for incentive customization and the management of young startups are presented.

KEYWORDS: Knowledge sharing, motivation, incentives, startups

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Chapter 1. Introduction

1.1 Context of the Dissertation

Challenging dominant players in the market is difficult. For newcomers, such as early-stage startups, leveraging innovation is the key for creating and accessing new markets and competing with the incumbents. With the increased attention paid to startups in recent years, there are more and more organizations competing to gain a share in the global markets. While recognizing the importance of innovativeness as a source of organizational competitive advantage, organizations wanting to gain a larger market share should focus on leveraging their innovation capabilities as much as possible. One way to improve the innovation capabilities of the organization is to improve the utilization of their knowledge capabilities. Along this line of though, managing knowledge as a source of organizational completive advantage has become an important factor in the management of organization.

However, Knowledge as an intangible artefact poses certain problems for management: First, there is no single standard unit of knowledge and as a result activities such as taking stock and managing the knowledge stored inside the organization is very different from managing tangible items. Second, members of the organization can create new knowledge through various activities such as sharing their knowledge with others and conducting research activities. However, due to the intangible nature of knowledge, it is not possible for supervisors to check if an individual has shared everything they know with other members of the organization during the knowledge creation and sharing process. Factors such as individuals' relationships and interdepartmental barriers can hinder the flow of knowledge. Therefore, a crucial task for managers, particularly for knowledge-intensive organizations such as IT companies and startups, which rely on cutting edge knowledge for their competitive advantage, is to facilitate the flow of knowledge between individual members, departments and with external third parties. One possible way to encourage knowledge sharing between relevant actors is by offering incentives to share knowledge. However, as will be shown in later chapters, incentive usage to encourage knowledge sharing is not as simple as it seems.

This dissertation focuses on incentive usage to encourage knowledge sharing with a particular focus on small, knowledge-intensive organizations known as startups. This topic was chosen for two reasons. First, while incentives usage has been previously studied within knowledge sharing research, the derived results have been conflicting on the effectiveness of incentives, which indicates that there is a need for more research regarding the specific factors that influence incentive usage for encouraging knowledge sharing. Second, startups have gained significant attention from both media and academia in the last few years, but most research on startups has focused on late-stage startups, i.e., companies that have been listed on public stock exchanges. As will be discussed later, while the majority of startups fail improved management practices could help decrease the number of companies that fail. Hence, understanding how to encourage knowledge sharing could have a significant impact on both the activities of practicing managers on the academic research community.

1.2 Research Questions

With the goal of increasing the level of understanding regarding how knowledge sharing can be better supported through the use of incentives, particularly in young startups, this dissertation aims to answer the following questions:

RQ1. How to design incentives to support knowledge sharing?

RQ2. What influences knowledge sharing in young startups?

Results for these research questions are presented throughout the dissertation's main sections, i.e., chapters 2 to 5, with practical examples shown in chapter 6. Final answers to the research questions are presented in chapter 7.

1.3 Outline of the Dissertation

This dissertation can broadly be divided into two streams: the first one focuses on research regarding incentive usage, and the second one focuses on topics related to young startups. An overview of the flow can be seen in Figure 1. These two broader streams are brought together in the concluding chapters. In detail, the dissertation is structured as follows:

Chapter 2 covers a literature review of existing research with the goal of providing the reader with an understanding regarding the two broader streams discussed in this dissertation. The covered topics have been divided into three broader sections: knowledge, motivation, and startups. Each of these sections also covers relevant subtopics such as knowledge sharing and incentives.

Chapter 3 covers incentive systems used to encourage knowledge sharing in detail. Particularly, theories regarding how incentives are designed and customized are discussed in-depth. This chapter expands the discussion on motivation and incentives covered in chapter 2 with a more in-depth analysis of incentive systems and incentives for knowledge sharing. As a key result of this chapter, a framework for customizing incentives is presented and used to analyze existing incentive systems used to encourage knowledge sharing. The original research covered in this chapter is based on publications by Laitinen and Senoo (2015, 2016).

In *Chapter 4,* the focus of the dissertation changes to cover startups, as case studies carried out in Japan and Hong Kong with young startup founders are presented. As a result of the case studies, two cross-sections describing the interaction between motivation, vision for the company, and incentives are presented. The original research covered in this chapter is based on Laitinen and Senoo (2017)

Chapter 5 presents the results of a survey targeting the knowledge-sharing motivation of members of young startups. Chapter 5 builds on the results of Chapter 4 by incorporating vision for the company and organizational culture into knowledge sharing motivation research. Additionally, the survey integrates the incentives discussed in Chapter 2 into the research framework. As a result of the presented research, a validated model of knowledge sharing intention in young startups is presented. The original research presented in this chapter is based on the research of Laitinen and Senoo (2019).

Chapter 6 further describes the combination of the two research streams by presenting an example of how the proposed incentive customization framework can be used in the young startup context to target knowledge sharing activities.

Chapter 7 concludes this dissertation with detailed answers to the main research questions presented earlier in this chapter. Additionally, future research directions for both startup and incentive research are presented.

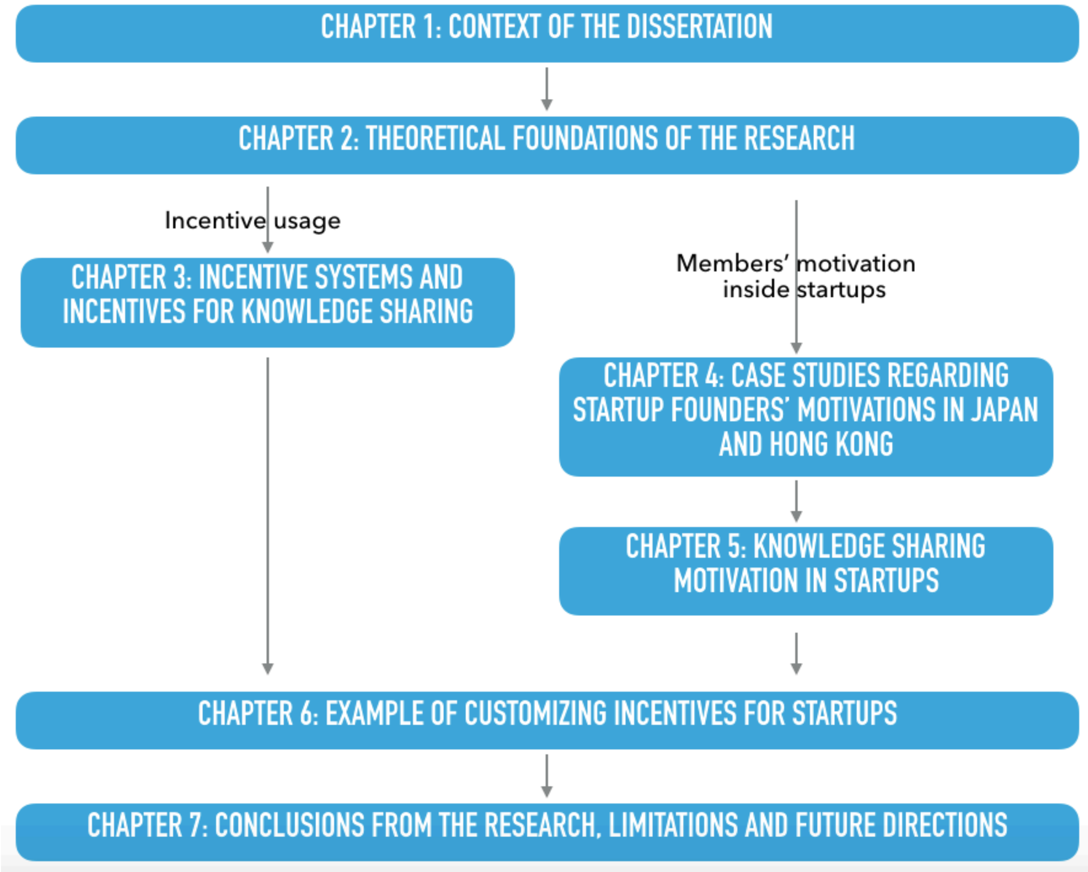

Figure 1 - Structure of the dissertation

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Chapter 2. Literature Review

Innovation is the life-line of startups (Aulet & Murray, 2013), which dictates survival or death of the company, and it implies that knowledge resources used by the startup are of critical importance. However, not much is known about how knowledge is managed, if managed at all, within startups, as was shown in a recent literature review (Centobelli et al., 2017). Hence, in order to create a solid foundation for the dissertation, the foundations of topics related to knowledge sharing in startup organizations will be discussed in this chapter. More specifically, this chapter covers relevant literature on knowledge, motivation, and startups. These topics have been chosen since each of these topics represents a key component that needs to be correctly configured in order for the amount of knowledge shared in the startup to be increased. Understanding these topics is also particularly important in regards to the creation of a knowledge-sharing culture inside an organization.

This chapter has the following structure: first, knowledge and knowledge management are discussed with a goal of better understanding the intangible nature of knowledge, and what challenges knowledge creates for managers and leaders. Second, the foundations of motivation are first discussed from a psychological foundations perspective, which is then followed by a section from the economic perspective of motivation. Understanding both the psychological and economic foundations of motivation is critical for the creation of incentives, and for understanding how to support knowledge sharing inside organizations. Third, an outline of what is a startup, how this type of companies differs from small companies, and recent research trends in startups are discussed. Finally, a summary concludes this chapter.

2.1 What is Knowledge?

It is known that as modern societies start to move towards becoming knowledge economies, the role of knowledge become more critical (Hayek, 1945; Drucker, 1969). In fact, it has been theorized that in these types of societies, knowledge resources will be more important than natural and physical resources (Powell & Snellman, 2004). This critical nature of knowledge as a resource for innovative firms is shown in the rapid rate of innovation, which actively drives companies to renew and improve their knowledge capabilities. At the same time, a shift to a knowledge-intensive society raises questions regarding the nature of the resources that firms use in order to operate, and particularly about the nature of knowledge. While there are theories to describe how firms use their resources to gain a competitive edge (Hayek, 1945; Wernerfelt, 1984; Barney, 1991), theorizing the utilization of knowledge as a critical resource of firms has gained popularity in the recent years (Kogut & Zander, 1992; Grant, 1996; Nonaka et al., 2000). This shift in the resource discussion implies that a more in-depth understanding of how the firm creates and uses knowledge can help the managers to improve the performance of the organization. This, however, a is founded on understanding how knowledge can be created, utilized, and managed inside an organization, which can be difficult as the nature of knowledge differs significantly from natural resources. Therefore, it is beneficial for managers to have a deeper insight into the working definition of knowledge and its characteristics.

2.1.1 Definition of Knowledge

The definition of "knowledge" has been debated intensely throughout the history of philosophy. Particularly in the field of, epistemology, or the theory of knowledge, research concentrating on understanding the nature of knowledge has been carried out. As a result, knowledge has become to be defined as a true, justified belief (for a thorough discussion on the nature of knowledge, see Chrisholm, 1989; in relation to management, see Nonaka, 1994), whose the three components can be defined as follows:

- Belief as what one assumes or beliefs to be true regarding the matter
- Justified implies that one has (a) reason(s) to support for the knowledge as factual
- Truth, or truth that does not depend on the views of the individual

It is important to note that the first two components of the definition are founded on the individual's subjective understanding of the matter. While definitions for each of the three components can vary, for the rest of the dissertation, the definition of knowledge will rest on the presented three factors.

In practical sense, according to Nonaka (1994), the main difference between the philosophical definition of knowledge and the managerial definition of knowledge is in what part of the definition of knowledge is emphasized: within epistemology, the main focus is on the truthfulness of the knowledge, meaning the abstract truth on the topic. In contrast to this, Nonaka places more emphasis on the belief and justified aspects of knowledge. The contrast between the use of the definition in these two fields highlights the differences in the mutability of knowledge. The focus on the truthfulness in the epistemological perspective makes knowledge into more of a static, immutable artefact. Whereas, Nonaka's emphasis on the justified and belief aspects of knowledge thus emphasizing that knowledge evolves over time when the justification and belief aspects of the knowledge artefact are modified.

Hayek (1945) highlighted the notion of completeness of information in his essay on the use of knowledge in society by discussing the impact of information availability of in order to understand the impact of knowledge on the economy. As a conclusion of his research, Hayek noted that usually all relevant information and knowledge is not available to the actor in order for them to make the optimal decision (p. 525). As more information comes available, the relevant (pieces of) knowledge about the situation are updated to reflect the current situation (von Krogh et al., 1994). Founded on this analysis, in an organizational context, the dissemination of knowledge to the right people at the right time becomes highly critical in order to achieve an optimal outcome in any given situation. This drive to have the most up-to-date knowledge usable for the operation serves as a motivator for the pursuit of creating new, usable knowledge. However, as more and more knowledge is needed, a question arises: are there different types of knowledge, and if there are, what is the difference between them? Do the different types of knowledge influence behavior in the same way or is the influence unified?

2.1.2 Data, Information and Knowledge

Data, information, and knowledge all play a critical role in understanding how companies operate. While on the surface, it might seem that the three terms are almost synonyms, each of the terms have distinct definitions that set them apart from each other. Furthermore, the three terms can be arranged in a specific order based on the level of refinement required to produce additional units.

First, data is numbers and facts. These can be gathered through means such as sensors and by keeping a record of online interactions. A commonly used example is the number of visitors visiting a website during one day. However, data, while increasingly abundance in quantity, is unrefined and needs further processing in order to become more useful. As a result of this refinement process, information can be extracted from the data (Alavi & Leidner, 2001). This processing of refinement can be done through means such as by combining data with other sources of data or by analyzing the data itself. In the website example, adding more data to the visitor numbers, for example, by tracking also the duration of the visit, results in information about the users' behavior on the website. By combining more pieces of information, the new information becomes the building blocks of knowledge (Zins, 2007). In the website analogy, this means that knowledge about users' behavioral patterns throughout the day can be derived from through the combination of lower-level information.

It is important to note that the previous analogy between the refinement process transforming data to information and information to knowledge might make it seem that the two transitions share the same transformation characteristic, which can lead to some confusion on the nature of knowledge. In the first refinement step, the combination of data to make information often happens with the help of computers, for example through the combination of multiple data sources. In contrast, the second refinement step, i.e., from information to knowledge, happens inside an individual mind. It can also be said that the amount of "raw materials" and the effort needed to refine data to information to knowledge significantly increases as the materials become more refined.

The confusion regarding the different characteristics of the three terms and the processes used to refine one type into another has led to the word "knowledge" being used as a homonym in various fields. For example, within data mining research, in the process of Knowledge Discovery in Databases (Fayyad et al., 1996) the word "knowledge" is used to describe information derived from databases based on statistical processing of data. However, it can be argued that since the combination information takes place outside of the individual's mind, this type of "knowledge" is very different from the "knowledge" that is created inside of an individual's mind as a result of combining information with relevant knowledge. As a result of this confusion regarding the fundamental definition of the terms and processses, the differences in the characteristics of the knowledge and the management processes will also differ according to the field at hand.

2.1.3 Types of Knowledge

In the previous section, knowledge was defined as a justified true, belief. This definition, however, is very crude in the sense that it does not distinguish if there is only one form of knowledge or if there are, in fact, multiple types of knowledge. As noted previously, management emphasizes justified and belief parts of the definition of knowledge (Nonaka, 1994), which implies that it is possible that there exist multiple types knowledge artefacts related to the same concept. These knowledge artefacts also vary from one another, i.e., one person's knowledge on a topic differs from one another's, based on the variations in how the knowledge artefact is defined. For the goals of management, traditionally two types of knowledge are defined - tacit and explicit knowledge.

Polanyi argues in The Tacit Dimension (1966; for other knowledge taxonomies, see Alavi & Leidner, 2001) that there are two types of knowledge: tacit knowledge and explicit knowledge. He also argues that explicit knowledge is founded on tacit knowledge. According to Polanyi's definition, tacit knowledge is intangible and can be described as the knowledge that one unknowingly knows. Polanyi founded his argument for the importance of tacit knowledge on Gestalt psychology and the notion that knowledge artefacts are greater than the sum of its parts. It is noted that an individual automatically gathers Tacit knowledge without the individual having to carefully analyze their actions through implicit learning. In practice, this means that the implicit learning process results in tacit knowledge learned unknowingly from the activity and that the subject will only become partially aware of the knowledge later when the knowledge is put to use the next time the individual engages in the same activity (Reber, 1989). Due to this peculiar nature of tacit knowledge, Polanyi famously summarized it in The Tacit Dimension (1966) as:" we know more than we can tell" (p.4). Later, Nonaka and Takeuchi (1995) built on Polanyi's work and noted on the nature of tacit knowledge that it is "personal, context-specific and therefore hard to formalize and communicate" (p.59). Both of these definitions highlight the difficulty transiting the created knowledge to others since the first individual might not even be aware of their possession of relevant knowledge.

Building on this foundation of tacit knowledge, Nonaka (1994) further divides tacit knowledge into two smaller categories: cognitive and technical dimensions. According to Nonaka (1994), cognitive elements of tacit knowledge rely on mental models consisting of "schemata, paradigms, beliefs and viewpoints" (p.16), which help the individual to understand to the world they live in. These mental models are formed and manipulated through the semantic meaning of the concepts. In other words, the original mental model is enhanced and improved to reflect the latest knowledge through the manipulation of the connections between different parts of the existing mental models (Johnson-Laird, 1980). The second type of tacit knowledge is the technical elements of tacit knowledge. Nonaka's (1994) division describes these as "concrete know-how, crafts and skills that apply to specific context" (p.16). This type of tacit knowledge is created by observing others and engaging in particular activities. Over time, through implicit learning, tacit knowledge regarding know-how and how contextual factors influence specific activities is built. In other words, through the experience and observation of numerous similar but slightly different events, the individual implicitly learns to adjust their behavior to suit the needs of that specific situation.

The second type of knowledge that Polanyi's (1966) defines is explicit knowledge. This type of knowledge is knowledge codified in a formal and systematic language. In contrast to the subjective nature of tacit knowledge, explicit knowledge is objective knowledge (Nonaka & Takeuchi, 1994), which can be easily shared with other individuals either verbally or through the creation of formal documents describing the explicit knowledge artefact. It should be noted that, while due to the formally codified knowledge nature of explicit knowledge making it is easier to manage explicit knowledge than tacit knowledge, these two types of knowledge should not be considered as entirely separate entities from each other. Instead, a more correct analogy would be to view them as the endpoints of a knowledge scale with tacit knowledge at one end of the scale and explicit knowledge at the other end with both types are present even at the extreme opposite end of the scale. Therefore, in order for an individual to understand the shared explicit knowledge artefact, the individual needs to utilize her own tacit knowledge of the subject in order to recontextualize the shared explicit knowledge according her to own mental model.

To extend the previously described example of Knowledge Discovery in Databases, the result of a statistical analysis process meet the definition of explicit knowledge, as they consist of knowledge coded in a systematic and formal language. Moreover, due to its explicit nature, the communication and transmission of the result is relative easy between people and information systems. However, in order for an individual to understand the explicit knowledge derived by the statistical methods, tacit knowledge is needed. To be more precise, in order for the result to be correctly understood, understanding the semantics of words and the various relevant mental models specific to that context is required.

While the presented Knowledge Discovery in Databases serves as an example of the data-information-knowledge refinement process in regards to the creation of new knowledge, it raises questions regarding how knowledge artefacts are transitioned to other forms since the results of the statistical process are useless if nobody can create new knowledge and insight based on it. Or if put in other words: how can tacit knowledge be made explicit knowledge? Since new knowledge plays a critical role in the creation of innovations, understanding how to support this transition between the knowledge types and the creation of new knowledge is critical.

2.1.4 Knowledge Conversion and Creation

With the transition to a knowledge economy, supporting new knowledge creation has become one of the main functions of managers. As the complexity of projects and operations grow, the knowledge requirements towards the participating individual increases (Grant, 1996). This increase in knowledge demand also means that in order to keep up with the competition, firms and individuals need to concentrate on their ability to create new knowledge (Darroch, 2005). It is important to note here that organizations are not able to create knowledge without individuals (Nonaka & Takeuchi, 1995, p.59).

As detailed before, there are two types of knowledge: intrinsic and tacit knowledge, both with varying dimensions. Explicit knowledge is easier to share as it has been already codified, for example, in in the form of a codified text for easy sharing. Tacit knowledge is by definition hard to share, as the individual is not fully aware of all the things she knows. Before sharing the tacit knowledge artefact, the knowledge needs to be converted from tacit knowledge into explicit knowledge. Nonaka and Takeuchi (1995, p.72) describe this tacit-to-explicit-to-tacit conversion process of knowledge in the SECI model, shown in Figure 2.

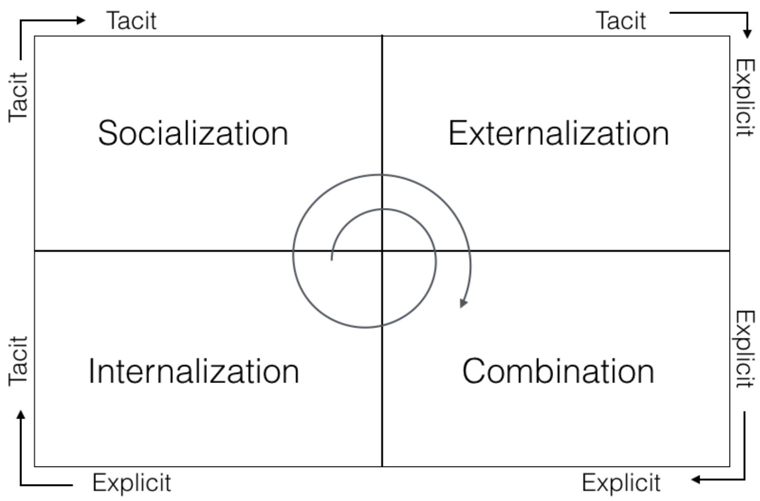

Figure 2 - SECI Model (Nonaka & Takeuchi, 1995)

The SECI model (Nonaka & Takeuchi, 1995), consist of four different conversions between the two different types of knowledge:

1. ***S**ocialization*, or the conversion of tacit knowledge to more tacit knowledge. The key in this transition, according to Nonaka and Takeuchi (p.62) is the fact that discussions and observations help individuals to adjust and expand their mental models. That is, for this transition to happen, it is critical for one to be exposed to new experiences and new knowledge. For example, sharing opinions amongst the group on what to do next in order to achieve a specific project goal based each individual's previous experiences in similar projects or observing others carry out tasks to learn technical skills results in increasing the amount of tacit knowledge each individual possesses.

2. ***E**xternalization*, or the conversion of tacit knowledge to explicit knowledge. This conversion consists of translating tacit knowledge into explicit knowledge through codifying the essence of the tacit knowledge. Activities such as documenting previously undocumented company processes exemplify this conversion. However, this task is costly and time-consuming, and it does not capture the whole knowledge artefact from the individual's mind as the individual is not fully aware of the entirety of the tacit knowledge they possess related to that knowledge artefact. Nonaka and Takeuchi note (p.64) that this form of knowledge conversion is frequently found in concept development as

new concepts are being elicited for their true nature. They also mention the use of metaphors in an attempt to capture the differences in the meaning of words between individuals as particularly fruitful and which can result in the creation of even more knowledge.

3. ***C****ombination*, or the conversion of explicit knowledge to explicit knowledge. This mode of transition comprises of combining various sources explicit knowledge mental models the individual has in order to understand one or both of the concepts better. The described conversation happens when new codified knowledge is used to modify and reconfigure the individual's existing mental model, which can lead to the creation of new knowledge. Nonaka and Takeuchi (p.67) highlight that this mode of transition is most frequently found in formal education and training. In an organizational context, this conversion can take place, for example, due to the reconfiguration of explicit knowledge after new knowledge from a computer database is introduced and it can result in the creation of new knowledge.

4. ***I****nternalization*, or the conversion of explicit knowledge to tacit knowledge. In this transition, the individual internalizes explicit knowledge by adding it to her own map of relevant tacit knowledge, thus updating mental model and tacit know-how. With the addition of relevant tacit knowledge to the existing, internalized knowledge, the individual can create a deeper understanding of the subject thus creating new knowledge. This newly created knowledge should be

shared, and as a result, the internalized knowledge needs to be socialized with others leading to a relaunching of the circle of knowledge conversion and creation. This circle of knowledge transitions between the two knowledge types is called the knowledge spiral (depicted in Figure 2 as the spiraling arrow with individual transitions noted on the outside of the main figure).

In an organizational context, the knowledge creation process should be thought as something that relies on the individual but also as something that the organization needs to take part in through supporting knowledge creation activities and by facilitating members' opportunities to engage in activities related to the various knowledge transitions. While knowledge can be created through partial transitions in the knowledge spiral, for example by the tacit-tacit conversion through socialization, the conversion's impact will be limited and will not significantly extend the organization's knowledge base. The limited effect of knowledge creation in these cases is due to the resulting created knowledge having been created based on only superficial factors, and it will not capture the full knowledge artefact (Nonaka, 1994). However, if individuals from various backgrounds can be engaged in the various stages of the whole knowledge spiral, the process will result in the creation of rich knowledge (Nonaka & Takeuchi, 1995).

The creation of rich knowledge is particularly important in developing products where access to knowledge from various backgrounds is critical (Brown & Eisenhardt, 1995). The importance of the diverse participants in the knowledge creation process has been previously theorized by Granovetter (1977), who emphasized the importance of variation in relationship strength between interacting individuals. In other words, for improving the efficiency of knowledge creation, it is essential to facilitate interaction opportunities between individuals who do not regularly interact since this can give access to new individuals and knowledge (Brown & Duguid, 1991). These factors place a high importance on knowledge sharing activities.

According to Nonaka (1994), this is where organizations can help the knowledge creation process: by managing the knowledge creation process from an organization's point of view, the organization can facilitate opportunities for all of the transitions in the knowledge spiral to take place. For example, for socialization, the organization can create teams from varied backgrounds to work on the same topic, which creates opportunities for the individuals to socialize their tacit knowledge with the other members, and as a result, new knowledge can be created. The results of the teamwork can then be shared with other teams, which increases the amount of knowledge created in the organization. Similar supporting actions can be taken to support the other knowledge transitions, which will result in the knowledge spiral becoming a process that encompasses the whole organization. In this process, von Krogh et al., (1994) emphasized the underlying role of social norms and noted that the conversion relies on the individuals' abilities to share the knowledge with others.

2.1.5 Knowledge Sharing

In organizations, the knowledge of the organization is embedded its members, who can share, combine, and refine knowledge into new knowledge. A common knowledge base for all employees is required since the sharing of knowledge is facilitated by common knowledge and parts of knowledge which overlap for both individuals or organizations (Grant, 1996). However, before proceeding with a more in-depth analysis of knowledge sharing, the definitions of two often confused terms (Paulin & Suneson, 2015), that is "knowledge sharing" and "knowledge transfer," should be clarified.

For the purposes of this dissertation, knowledge sharing shall be defined as: "the provision of task information and know-how collaborate and help others to solve problems, develop new ideas or implement policies or procedures" (Wang & Noe, 2010, p.117). Based on the presented definition, it can be stated that sharing takes places on an individual level. In contrast, knowledge transfer is used to describe sharing between units and organizations. Overall, emphasis will be placed on knowledge that has not been made into any tangible form.

According to Grant (1996), knowledge sharing relies on the interacting parties sharing the following: language and other forms of communication, a commonality of specified knowledge, shared meaning, and recognition of each individual's knowledge domains. These all factors facilitate the understanding of the shared knowledge.

The first two of the list are relatively self-explanatory as without language or any other communication form means to share the knowledge, convey meaning to the other party is extremely challenging. The commonality of specialized knowledge required for the two parties to understand each other, particularly in highly complex situations, since the interacting parties will not be able to understand what is really meant with the shared knowledge and as a result sharing will be limited on at a to an elementary level. This, in turn, will mean that the other party will not be able to understand most of the shared knowledge without the understanding of complex language and concepts. However, if both already share the same capabilities, then the amount of knowledge that can be shared by the two parties is limited due to the similarities between the two parties. A very crude example of this is explaining a new task to a child. The commonality of specialized knowledge between the adult and the child is very limited, which in turn can cause significant difficulties in communicating the simple task to the child.

An overlap in shared meaning is required when the two interacting parties start to share knowledge. Polanyi (1966) describes this requirement as "indwelling" (p.61) and Nonaka and Takeuchi (1994, p.64) emphasize the role of metaphors and analogy in helping to reach a shared meaning. Without shared meaning, there is a loss of knowledge before both parties can hone in on the goals of the sharing. Fundamentally, this process relies on the alignment of the common parts of the two parties' mental models. The alignment is particularly important for the receiver since, without an understanding of the mental models and goals of the sharer, it is not possible for the receiver to understand the contextual factors of the shared knowledge (Nonaka &

Konno, 1998). The final requirement stated by Grant (1996) is the recognition of individual's knowledge domains. Understanding the difference in what other parties know in a given situation allows for each of the interacting parties to adjust their coordination to be more efficient through the contribution of more on the domains that they are more knowledgeable on. For example, in the adult-child sharing example, this would mean that the adult understands what the child's capabilities, and by understanding this, the adult can adjust their communication methods to more effectively communicate knowledge to the child.

As noted by Nonaka (1994), organizations can facilitate opportunities to share knowledge. However, as sharing is fundamentally a social act, the individuals themselves need to choose to engage in the activity (Cabrera & Cabrera, 2002; Connelly et al., 2012). Reasons for not sharing knowledge are numerous, and can range from the individual not seeing the benefits of sharing with others (Connelly et al., 2012) to being too busy with other tasks to meaningfully share knowledge with others (Connelly et al., 2014). Hence, the role of the organization, and particularly the managers, is to facilitate and manage knowledge use and sharing is critical for the success of the organization (McDermontt & O'Dell, 2001). This focus on knowledge sharing as a critical source of a competitive edge is also where the academic research has focused lately. Examples of these include Witherspoon et al. (2013) and Wang and Noe's (2010), who both reviewed the factors influencing intention to knowledge sharing, activities related to the creation of a culture of sharing (De Long & Fahey, 2000), and the creation of incentives to encourage knowledge-sharing (Bartol & Srivastava, 2002) In addition to studying the antecedents to knowledge sharing, recent research has also focused on understanding how specific industries influence knowledge sharing (e.g. Navimipour & Charband, 2016; Yan et al., 2016).

2.1.6 Organizational Learning and Knowledge Management

The knowledge residing inside an organization can be a significant source of completive edge for the organization (Grant, 1996). However, due to its nature, knowledge inside the organization is ever-changing and intangible (von Krogh et al., 1994), which creates a challenge for managers who need to tackle how to manage the organization's knowledge stock. While definitions for knowledge management vary, for the purposes of this dissertation, knowledge management is defined to be concerned with the "planning, organizing, motivating, and controlling people, product and systems" (King, 2009, p.4) with the goal of increasing the utilization of the knowledge assets inside the organization. This definition supports the notion that knowledge a critical resource of the organization which needs to be carefully managed.

While having roots in the 1950s (Easterby-Smith et al., 2000), knowledge management as a research field got its foundation around the early 1990s (Nonaka & von Krogh, 2009) as more and more attention started to be paid to the competitive edge that could be derived from viewing knowledge as a resource. Addition to the knowledge-based theory of the firm approach (e.g. Grant, 1996; Spender, 1996), Nonaka & Takeuchi's The Knowledge-Creating Company (1995), which focused on knowledge creation inside an organization, and Senge's The Fifth Discipline (1990), which focused on organizational learning and systems thinking, sparked interest in how knowledge works inside organizations. The overall goal of all of these researchers was to understand better how knowledge can be a source of a competitive edge and how the creation of new knowledge in organizations can be supported. It can be argued that the reason for the increased activity in the field in the 1990s can be traced back to the advancements of information systems and the early adaption of the Internet. Additionally, It should also be noted that in the context of knowledge as a source of organizational competitive advantage, organizational learning and knowledge management both focus on how knowledge is created and how organizations utilize knowledge. As a result, these two terms are frequently used as synonyms.

The SECI model describes how knowledge converts between different types, and places emphasis on the continual accumulation and modification of the knowledge stock. However, from the perspective of practicing managers, Nonaka and Takeuchi's knowledge creation theory (1994) needs to be adapted to the company-context before it can be put to practical use. Hence, a significant proportion of previous research has focused on improving the understanding of how knowledge management can be better used to support knowledge creation processes and what are the most significant problem points in real organizations. These factors are commonly called as barriers for knowledge management. According to Riege (2005) and Bahtt (2001), the barriers to successful implementation of knowledge management can be divided into three categories:

- Individual-level barriers ranging from lack of motivation and trust to lacking communication capabilities.
- Organizational-level barriers ranging from barriers created by organizational culture, policies and structure.
- Technology-related barrier ranging from members' reluctance to use new technologies to lack of integration of the technology into the daily organizational practices.

When implementing knowledge management policies and practices, management needs to consider how the policies fit into the context of the specific organization (Nonaka & Konno, 1998). Particularly, understanding how knowledge is acquired, created, shared and used, by who. and in what specific context is critical for the success of any knowledge management initiative (Alavi et al., 2005).

Overall, with the increasing reliance on knowledge-intensive industries and technologies, it can be stated that the view of knowledge as a source of competitive edge for companies has gained significant traction. However, for most organizations, the efficient management and utilization of knowledge resources is still a challenge (Alavi & Leidner, 2001; Babcock, 2004; Pirkkalainen & Pawlowski, 2014). Therefore, it is essential for managers to understand how to manage and support knowledge creation and knowledge management processes in their organization with the goal of increasing the future likelihood of success of the organization. A crucial part of leveraging the organization's knowledge capabilities for organizational success is to have each member of the organization to engage in frequent sharing of knowledge. However, creating an active sharing culture can be challenging as individuals share only as much or as little knowledge as they want (Connelly et al., 2012) and individuals sharing too much already known knowledge is also something that should be avoided due to a resource waste. Therefore, it is essential for managers to have an insight into what motivates their members to work at that specific company and to understand what motivates individuals of that specific organization to share critical knowledge before proceeding forward with any knowledge management initiative. With the goal of helping managers understand how to gain the needed insights into motivation, the next chapter will cover the foundations of motivation, and how incentives can influence an individual's motivation to carry out specific tasks.

2.2 Foundations of Motivation

As discussed in the previous chapter, knowledge sharing is fundamentally founded on the individual's motivation to take part and contribute by sharing knowledge with other individuals (Cabrera & Cabrera, 2002; Connelly et al., 2012). Therefore, for managers, it is essential to understand how to motivate individuals to share more knowledge with other members of the organization. For insights into this dilemma, having multiple perspectives on motivation will come handy, as they will prepare the manager to deal with individuals with a wide range of motivational factors.

The factors that motivate the individual can take on a wide range of forms ranging from, but not limited to, want to help others to a desire to receive a payment for the completion of the task. Generally, Ryan and Deci (2000, p.54) define motivation as "to be moved to do something." This definition, however, does not give any insight into why certain things motivate individuals to carry out given tasks nor to the underlying conditions of motivation. Hence, the goal of this chapter is to introduce how motivation can be understood in an organizational context. While noting that there a plethora of factors that influence motivation, as shown in Figure 3 (for a broader overview of previous research on motivation in organizational behavior, see Kanfer & Chen, 2016), this chapter focuses on individual-level factors. These factors are related to the "*why*" of motivational theories.

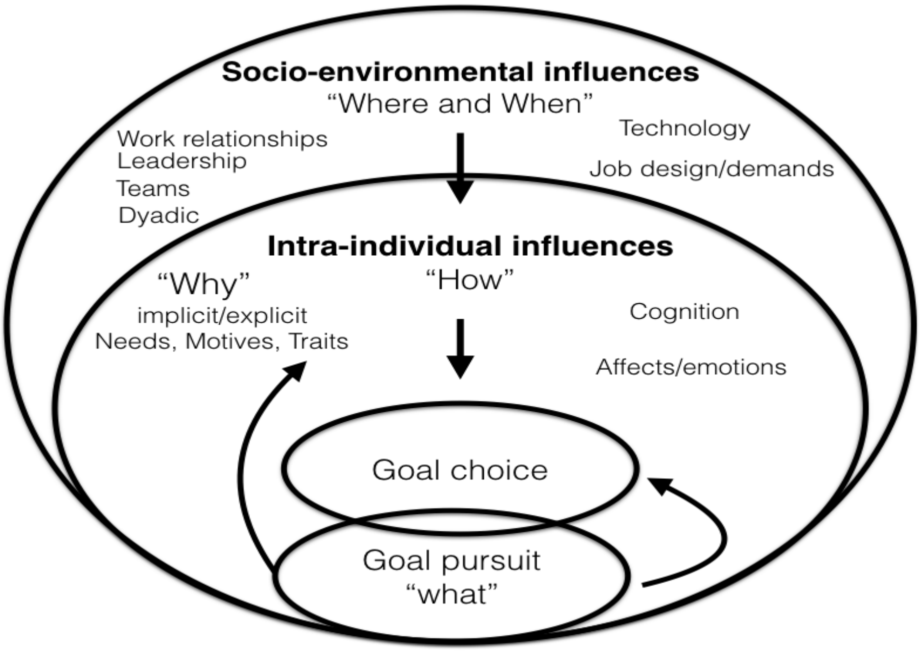

Figure 3 - Meta-model of factors influencing motivation (Kanfer & Chen, 2016)

Research on motivation can be broadly divided into two streams: psychological research founded on experimental research and economics research founded on mathematical models of actor behavior. While the two streams of research seem to have significantly different foundations, as will be shown later in this chapter, both streams offer insights into how motivation influences the daily behavior of individuals.

This section on motivation is divided as follows: First, the psychological foundations of motivation will be presented along with recent key developments followed by a look at the foundations of economic foundations of motivation.

2.2.1 Psychological Foundations of Motivation

In psychological research, one of the most influential theories on motivation comes from Maslow's Hierarchy of Needs (1943), which details how individuals fulfill their needs. According to the theory, individuals strive to fulfill their psychological drives and physiological needs. The theory describes that there are fundamental physiological needs that should be fulfilled before an individual is able to pursue her higher level psychological drives which include factors such as the desire to know and to understand (p.384) and the need for self-actualization (p.382). Hierarchy of Needs, therefore, states that before individuals can concentrate on fulfilling their higher-level needs, lower level requirements have to be addressed. However, the theory states also that there are differences between people, which cause the ranking of drives to vary, and that lower-level needs, that is more fundamental drives and needs, do not need to be 100% fulfilled in order for the individual to become aware of the further, higher-level, needs (p.388).

From an organizational and management perspective, Maslow's theory seems quite convenient as it ranks the fundamental needs that the organization should meet in order for its member to have a higher motivation to carry out their tasks. However, as employees are free to choose their place of employment, then competing to meet basic, fundamental needs is no longer enough to attract the best talent, which is crucial for the future success of knowledge-intensive companies. Hence, from the perspective of motivating employees as much as possible, a more granular theory is required. While Maslow's theory was revised by Alderfer (1969), who revised Maslow's classifications into three categories, which gained some support from psychologists, critique from Wahba and Bridwell (1976) and others ultimately pushed researchers to move away from classifying human motives.

One of the new strands of research that substituted the interest in organizing motives is research on intrinsic motivation. This stream was started in 1975 when Deci and Ryan published their seminal work, Intrinsic Motivation, where they divide motivation into two different types: intrinsic motivation and extrinsic motivation. According to their definitions, intrinsic motivation is said to be engaged when an individual carries out a task out of her own interest in the task, and no reward is offered in relation to engagement in the task. In contrast, when any type of reward is offered in exchange for engaging in an activity, extrinsic motivation is said to be engaged. In regards to intrinsic motivation, Deci and Ryan (1985) place affective factors, such as enjoyment and interest, and self-determination in the task as the foundation of intrinsic motivation. According to the original form of the theory, all other factors would be categorized as extrinsic motivators. While there have been updates to this theory of motivation, for example, Self-determination Theory (Cagné & Deci, 2005), which divides motivation into six different subcategories based on the level of self-determination, the two-category classification is still mostly used in research (Kanfer & Chen, 2016).

However, the use of this two-categorization theory is not without critique. In 2001, Lindenberg noted that Deci and Ryan's (1985) elaboration of intrinsic motivation could not account for factors such as obligation-based intrinsic motivation. He elaborated with an example of paying tax, which is an activity that the individual might not like but still carries out it out due to social norms of behavior. Founded on a counterargument regarding the importance of norms, Lindenberg (2001) proposed a new theory of intrinsic motivation consisting of enjoyment-based and obligation-based intrinsic motivations with additional considerations for the goals of the behavior.

Fundamentally, the essential difference between Deci and Ryan (1985) and Lindenberg's (2001) theories is how do goals and context function: for Deci and Ryan, goals and context do not significantly influence the motivation whereas for Lindeberg there is a significant effect. This difference was summarized by Lindenberg (2001) by writing that:" to simply assume that either money or enjoyment will dominate the activity without looking at the roles of the goals in the background leads to wrong conclusions about motivation" (p.399). Hence, when analyzing the motivation of individuals, understanding their goals in addition to the underlying motivators is crucial. In an organizational context, should they use Lindenberg's model of motivation, this means that managers need to understand not only what motivates individuals to engage in a given task but also to understand how does the activity fit the organizational context.

In addition to the types of motivation, one of the main questions has been if the different types of motivations can interact. Particularly, given that the definitions for the two types of motivation are distinct from each other, then can the two types of motivations work together to increase motivation in an adative manner, does the increase of extrinsic motivation subtract from the level of intrinsic motivation, or is the interaction of the two types impossible. While previous meta-analyses have found conflicting results on the influence of extrinsic motivators, a recent meta-analysis carried out by Ceracoli et al., (2014) concluded that the two types can work together if the used incentives have been properly configured. That is, the results of the analysis show that the detrimental effects of extrinsic motivators on intrinsic motivation, i.e., crowding-out of intrinsic motivation, can be avoided with a careful configuration of the incentives used. The general pattern from experimental evidence on motivation research is that tangible, expected rewards increase extrinsic motivation but decreases intrinsic motivation while non-tangible rewards such as verbal feedback for good result increases intrinsic motivation (Ceracoli et al., 2014; Deci et al., 1999; Lindberg, 2001). Additionally, it has shown that intrinsic motivation influences the quality of performance, whereas extrinsic motivation influences the quantity of work (Ceracoli et al., 2014).

In their review of motivational research in an organizational context, Kanfer and Chen (2016) summarize that the latest research trends on understanding how motivation works on an individual level have been focused on how social relationships in the workplace influence motivation, and on how implicit motives influence motivations. These development directions align with Lindenberg's (2001) notion that understanding the context of motivation is fundamental for the correct analysis of motivation.

2.2.2 Economic Foundation of Motivation

Traditional economic foundations of motivation are concerned with the utility, that is the outcome or payoff, derived from actions. According to Goodwin et al., (2013) The neoclassical model of behavior, which started gaining popularity in the 1950s, is founded on the assumption that the goal of any rational actor, that is the individual or an organization, is to maximize their utility derived from their activities. Hence, for each situation, the individual will aim to derive the best possible outcome by optimizing their behavior. This optimization problem assumes that the actor has so-called perfect information of the situation, is aware of all relevant information, and can correctly assign a utility for each of the possible outcomes according to a set of preferences the actor has over the outcomes. Out of all of the possible outcomes, the actor then chooses the one that results in the most utility. However, the requirements set for the maximization process, i.e., the need for perfect information, utility maximization and stable preferences, have been criticized in the last decades, which has resulted in the development of models with less strict assumptions.

While the assumption that the actors behave in a rational manner has been criticized from the 1840s (for an overview of the historical developments, see Klaes & Sent, 2005), the works of Herbert Simon on bounded rationality pushed the critique of the rationality assumption to the main steam of research. Particularly the revised versions of his seminal 1947 book Administrative Behavior (1997) have had a significant impact on how rational actors are assumed to be. Simon's proposed bounded rationality moved the used rationality assumptions towards a more realistic model of behavior. Simon particularly criticized the utility derivation process and noted the cost of the optimization process in the utility maximation. As a result of his work, Simon received a Nobel Prize in 1978.

Additional work in the field of psychological economics has resulted in new models describing why individuals behave the way they do. Out of all of these possibly the most well-known are the works of Kahneman and Tversky. Their research on the fundamentals of economic behavior has highlighted differences between the fundamental economic assumptions and the derived experimental results. Of particular interest are their results in regards to how individuals use probabilities in risky situations (Kahneman & Trevsky, 1979) and the heuristics individuals use to make decisions (Trevsky & Kahneman, 1974). Overall the research carried out by Kahneman and Tversky shows that the real-life applicability of some of the fundamental economic theory assumptions for rational choice are limited (Tversky & Kahneman, 1986). Their work further added strength to the arguments that the fundamental assumptions of the neoclassical economic model might be at least partially flawed.

In addition to the considerations for rationality, key developments in the understanding of why individuals behave the way they do regard the understanding of how preferences influence decision making. In contrast to the traditional model of preferences were considered to be stable over time (Stigler & Becker, 1977) and focused on the goal of maximizing one's payoff (Simon, 1959), recently other types of preference theories have gained attention. Particularly, so-called endogenous, or other-regarding and social, preferences have recently gained attention from researchers (Bowles, 1998; Bowles & Polania-Reyes, 2012). Individuals with these types of preferences will choose not an action that maximizes their utility but instead will choose an outcome that results in a smaller utility that the optimal choice with ulterior goals. These types of preferences include such considerations as the concern for the welfare of others, such as altruism (Simon, 1993), and fairness of the outcomes, such as reciprocity (Ferh & Gächter, 2000). Notably, recent research has discovered that due to these preferences, individuals will on purpose chose actions that result in a lower utility outcome for the group in order to punish others, who have previously broken the prevailing social norms of the relevant group (Fehr & Fischbacher, 2004; Fehr & Gintis, 2007).

As a result of all of the work on updating the assumptions regarding how individuals behave, the field of behavioral economics, a subfield of microeconomics, has gained traction in its efforts to more accurately describe how and why actors behave the way they do (for a review of recent developments, see Laibson & List, 2015).

In an organizational context, the interaction of actors can be described based on multiple theories. Out of these theories, game theory and agency theory are the most well-known (Rogers, 2001): The two theories can be summarized as follows:

- Game Theory: rational actors make decisions to maximize their payoff given certain limitations. If broadly divided, game theory can be divided into two subsections: cooperative and non-cooperative game theory. This division fundamentally is founded on the criteria if agreements and coalitions of players are enforceable or not. Game theory has been widely used in economics and to analyze how individuals behave in given situations. For the organizational context, of particular interest is the prisoners' dilemma model, which can be used to model the interaction between management and employees. Futhermore, prisoners' dilemma can also be applied to knowledge sharing situations (Shis et al., 2006).

- Agency Theory: delegation of a task by one actor, the principal, to another, the agent, where the outcome derived from the task influences the payoff of both individuals. In other words, Agency Theory is focused on how the principal should use incentives or other influencing-methods in order to

> elicit specific patterns of behavior from the agent. The elicitation of specific behavioral patterns is particularly important as it is assumed that monitoring the agent is costly for the principal. As a result, the principal wants the agent to adhere to the behavior even when the principal is not observing the behavior of the agent. Agency theory can also be used to analyze knowledge sharing in organizations (Nan, 2008).

While the fundamentals of these models have been criticized due to factors such as reliance on actor rationality (Shapiro, 2005), both theories can offer insights into how managers can influence the activities carried out by other members of the organization. Notably, since both theories are fundamentally concerned with aligning the self-interests of the actors, the key activity of management is to understand what types of incentives to offer and to whom in order to align any misaligned interests with the ultimate goals of the organization. In this realignment process, incentives can be a potent tool for managers if correctly utilized.

In contrast to pure mathematical models, Bowles (1998) argues that institutions and markets influence the preferences of individuals and that these factors should be better understood in order for a more accurate understanding of why individuals carry out the actions they choose to engage in. Hence, while Game Theory and Agency Theory can be used to describe behavior in organizations, additional factors regarding the individuals should be considered when carrying out the analysis. According to Bowles

(1998, p.77), the structures of markets and economic institutions influence an individual's behavior in five ways:

- Framing and situation construal, or how the situation is presented. If the situation resembles a normal market-like situation or if it has some other features, which might influence how the situation is perceived.
- Intrinsic and extrinsic motivation, or what are the underlying motivations of the individual in regards to the possible activity.
- Effects on the evolution of norms, or how do the prevailing norms of behavior influence the set of actions available to the individual. It is possible that the prevailing norms prevent the individual from considering certain actions.
- Task performance effects, or how the tasks individuals face in their daily lives not only influence how the individual behaves but also what are her capabilities to carry out specific actions. In other words, preferences, just as skills, are updated through daily activities.
- Effects of the process on cultural transmission, or the ways that the individual acquires values and preferences from the prevalent environment.

The work of Bowles and others highlights the need to consider the contextual factors of action in addition to analyzing the payoffs that individuals can be derived from specific activities. The implications of this change in the scope of the analysis are particularly critical for practitioners who use the economic perspective to analyze and understand the behavior of other members of their organizations.

As has been discussed, both psychological foundations and economic foundations of motivation discuss how specific patterns of behavior can be elicited from members of the organization. In both, particular focus has been placed on the influence of incentives. For psychology, the focus has been on if extrinsic motivators work and if they are detrimental to intrinsic motivation. The latest research seems to point towards extrinsic incentives being superadditive if configured in such a way that they do not undermine the intrinsic motivation of the targeted individual. For economics, the main question is about aligning incentives of the worker with the goals of the organization. While there are some fundamental differences between the two approaches, for example, regarding the influence of context and the rationality of actors, both of these perspectives give insight into what influences the behavior of individuals. With the increased importance of behavioral economics, the two presented main approaches will certainly continue to become more similar. As a result, for practitioners, understanding when to use which perspective is critical in understanding how to encourage the organization's members to engage in specific activities.

2.3 Startups

References to startups have been made throughout the beginning of this dissertation, but what is a "startup"? A startup is a particular form of a knowledge-intensive, young company, which has recently gained significant attention both in popular media and in academia. The reason for startups, and particularly technology startups, gaining so much attention is because investors, governments, and company founders all aim to take part in the creation of a billion-dollar company or so-called unicorn. Example Unicorns include companies such as Uber, Airbnb, WeWork, and many others. However, what is frequently forgotten in this discussion is the fact that startups differ from traditional young, small companies, and therefore understanding the differences is critical for the startup's operation.

2.3.1 Differentiating Startups from Small Companies

There are multiple ways to define a small company. The European Commission (2018) defines traditional small companies based on two factors: the number of employees and turnover or total balance sheet. In contrast, The Small Business Administration of The United States varies its definition additionally according to the industry of the company (Dilger, 2012). Neither of these definitions considers the age of the company at all and as small companies can stay as "small companies" for their whole life even if it spans multiple decades. This effect of not having a limit to the age of a young company has been seen in previous research as earlier studies of startups have used age as a proxy measure for defining a startup (Zaech & Baldegger, 2017). However, the reliance on age as a distinguishing characteristic raises a fundamental problem: at what age does a startup stop being a startup? Unfortunately, given that startups can grow at significantly different paces, having a stringent age limit as the only qualifier for being a startup could lead to flawed characterization. Instead, it is proposed that startups should be defined based on the organizational characteristics that make them different from traditional small companies.

Aulet and Murray (2013) studied the differences between the two small companies from the perspective of what types of characteristics the organization has. For their purposes, Aulet and Murray contrast traditional small companies with innovation-driven small companies. Based on their analysis, they raise awareness of the fact that these two types of companies should not be classified as the same because the companies face significantly different challenges in the early stages of their life. In their report, Aulet and Murray (2013) highlight the following factors (p.6):

- Differences in market focus
- Difference in leveraging innovation for business operations
- Difference in the locations of jobs
- Difference in the ownership and the possible funding sources used
- Differences in the growth rates of the two company types

Additionally, previous research has found multiple other dimensions that distinguish different types of small companies and influence how they operate and what are the organization's goals. For example, Ruvio et al., (2010) compared non-profit and for-profit entrepreneurial companies and concluded that the companies' internal practices differ significantly due to the differences in the goals of the companies. The findings such as these support the separation of startups from traditional small companies and create a foundation for the creation of a standard definition for startups.

2.3.2 Definition of a Startup

Based on the previous discussion on the characteristic differences between startups and small companies, a question arises: what is the definition of a startup? Unfortunately, there is no single accepted description of what a startup is. As a result, various definitions have been used by previous researchers in order to meet their research goals.

As discussed before, Aulet and Murray (2013) categorized how startups differ from traditional companies and as a result defined startups as innovation-driven small companies to show the critical dependency of startups' capability to leverage innovation to outcompete others, particularly incumbent companies. Unfortunately, this definition does not set any clear criteria when startup stops being a startup and transitions into another company type.

In their study of software development startups, Giardino et al., (2014) defined a startup as: "a small company exploring new business opportunities, working to solve a problem where the solution is not well-known and the market is highly volatile" (p.1). While employing key aspects of startups, their definition does not set strict criteria when a small company stops being a startup. Additionally, the presented definition does not mention the search for profitability the young startups engage in, which is one of the main reasons why startups fail (Marmer et al., 2011).

An often-used definition comes from Blank and Dorf (2012) who defined a startup as a "temporary organization in search of a scalable, repeatable, profitable business model" (p.xvii). While this definition also leaves out any concrete criteria for the cutoff for being a startup, Blank and Dorf (2012) manage to capture most of the aspect highlighted by Aulet and Murray (2013). This definition also highlights the importance of aiming for profitability right from the start in the startup process.

One key factor, which both Giardino et al., (2014) and Blank and Dorf (2012) captured is the idea of searching or exploring the market for new business opportunities. In contrast, this idea was left out from the factors listed by Aulet and Murray (2013). The importance of exploring the market and the idea of business model flexibility has been further developed in the hypothesis-driven startup by Eisenmann, Ries, and Dillard (2012), who emphasized the importance of testing out the critical business model assumptions and revising the model based on the received feedback. This revision process allows the startup to be more efficient by honing in on a sustainable and repeatable business model as soon as possible. If the received feedback significantly mounts against the working assumptions, the startup can pivot to serve another market segment or try to modify their product to fit the target market better.

Based on the previous definitions, the following definition for a startup is suggested:

A ***startup*** *is a young innovation-driven company searching for a repeatable and profitable business model by creating innovative products and services that target the uncertain global markets.*

While this definition also does not include a specific cut-off for the definition of a startup, an additional restriction is proposed: once the startup reaches series B funding, a funding round that is usually used for scaling up operations after a product has been developed, the organization reaches a point when another classifier should be used to describe it.

The challenges startup faces show that knowledge has a significant impact on how the young organization operates; innovation is critical for the success of the company, but the organization needs to leverage the created innovations in an environment with significant uncertainty. As the startup aim to create a successful, global company, internal operations of the startup need to be organized in such a way that it enables the flow of knowledge between its members. As a result, it can be argued that knowledge management plays a significant role during the growth of the startup.

2.3.1 Theories on New International Ventures

In business research, the creation of new business ventures has been studied in depth (Johanson & Vahlne, 1977; Gartner, 1985; Bhave 1994; Oviatt & McDougall, 1994, for literature review, see Salamzadeh, 2015). Particularly the Uppsala Model of Internationalization (Johanson & Vahlne, 1977) and the International New Venture (Oviatt & McDougall, 1994) have dominated the theoretical discussion regarding how young companies grow to be successful international companies.

The Uppsala Model of Internationalization (Johanson & Vahlne, 1977; Johanson & Vahlne, 2009) describes the process of how companies become international. The process has two change mechanisms: market knowledge influence on commitment decision and current activities of the firm influence on market commitment. Recently, the model was revised, both in 2009 and 2017, to reflect the changes in the way businesses operate in modern times. The changes reflect the vital role that networks and knowledge creation play in the internationalization. In the first version of the model, it was implied that internationalization first takes place in countries with a small psychic distance. In other words, internationalization begins with companies going to foreign markets that closely resemble the firm's home market. With the change in the global business environment, this factor has changed radically as Johanson and Vahlne (2009) note. Johanson and Vahlne (2009) also note that they believe that the so-called startup companies are captured by their model, as most rapidly internationalizing companies are "born regional" through activities that focus on specific regions at the beginning of the life of the company.

In their Theory of International New Ventures, Oviatt and McDougall (1994, p.31) define the target companies as young companies that "from inception, seeks to derive significant competitive advantage from the use of resources and sale of outputs in multiple countries." These types of companies are then contrasted to multinational enterprises, which have been usually described as large, mature companies. Based on this comparison, Oviatt and McDougall (1994) identify specific requirements for a company to be an international new venture. Finally, four distinct types of ventures are identified based on a two-dimensional matrix with the number of countries involved (few vs. many countries involved) in one axis and coordination of value chain activities (few activities vs. many activities coordinated) on the other axis. The four types of companies that this classification describes are as follows: Export/Import Startup, Multinational Trader, Geographically Focused Startup and Global Startup. From these geographically focused startups, and global startups are the most interesting as they closely align with the definition of a startup that was given earlier in the chapter.

Based on the International New Venture theory, an additional new company type has been suggested: a born global company (Rennie, 1993). Knight and Cavusgil (2004, p. 124) define this type of companies as organizations that “from the or near their founding, seek superior international business performance from the application of knowledge-based resources to the sale of outputs in multiple countries.” The two theories, International New Venture and Born Global, have been widely used as synonyms (Crick, 2009) as there are some indications that the two company types are not distinct (Fan & Phan, 2007). However, from a theoretical point of view, the two theories differ in the geographic focus of the typical company. To be more precise, Born Global are described as companies that target the global markets from inception whereas International New Ventures theorizes that companies can start with a regionally focus instead of a global focus from the start.

When comparing the three presented company types, only International New Ventures and Born Global companies focus on starting an international operation from inception or from very early in the company’s life. In contrast, the Uppsala Model does not consider age in theory but instead focuses on the factors that influence how companies become international over time as their operations slowly start to become more international through maturation. Since startups are young companies that are focusing on creating a new business that has the possibility to achieve rapid growth from the start (Blank & Dorf 2012; Giardino et al., 2014), International New Venture and Born Global theories are the closest theories of the presented here to capturing the characteristics of the so-called startup companies.

When comparing International New Venture and Born Global companies studied, both of these types of companies resemble startups since they consider factors such as While turbulence of the market (Oviatt & McDougall, 1994; Ries, 2011; Tanev et al., 2015), but the company types are, in fact, different when compared on a theoretical level (Knight, 2015). Rasmussen and Tanev (2015) argued that the both International New Venture and Born Global research focuses on international operations, marketing and partnership development whereas hypothesis-driven startup approach, discussed further later, has its foundation on rapid, innovative product development. Or in other words: companies described by the International New Venture and Born Global theories are describing company entry into the global markets with an already existing product whereas startups start by focusing on the development of new products and services that can be used to reach a large customer base in a short time through an interaction with the customers. Given that startups look to solve “specific customer problems” (Rasmussen & Tanev, 2015; Eisemann et al., 2012), the focus of the theories is different. This difference in the foundations of the theories used to describe the typical companies in business research and startup research suggests that startups should be treated as a separate company type from traditional company models.

2.3.2 Recent Trends in Startup Research

Recent trends in startup research have been focusing on the Lean Startup, or hypothesis-driven startup, methodology discussed by Reis (2011) and Eisemann et al., (2012). Lean Startup is founded on the rapid iteration of product and service ideas based on customer feedback. This idea of rapidly testing ideas and learning from the experiments is captured in the build-measure-learn feedback loop, shown in Figure 4. In each iteration, a hypothesis is formulated to test an assumption related to the company's business model after which an experiment is created to target the hypothesis. Once the experiment has been carried out, the results of the experiment are measured and analyzed. Based on the analysis, a decision is made to either reiterate experimentation in order to further improve the product or to escalate by investing more resources into the execution of the business with the goal of creating a business around the product. Should the analysis show completely unexpected results against the working hypotheses, a decision can be made either to pivot the product to target a different market or to give up working on this version of the product.

As Lean Startup has its origins outside of the academia, special effort has been made to align and track its roots to corresponding academic research. Bortolini et al. (2018) situate the components of the Lean Startup methodology close to the lean manufacturing methodology used in the Toyota Production System. In detail, Bortolini et al., break down each of the steps in the Lean Startup methodology into related theories that can be found in existing business research. Similar efforts have been made by Contigiani and Levinthal (2018) who compare Lean Startup with organizational learning, real options, new product development, and technology evolution. These four research fields are then used to recontextualize the various perspectives that can be taken to view Lean Startup in line with more traditional academic contexts. For example, in the organizational learning perspective, Lean Startup emphasizes the required learning from the hypothesis testing that takes place in each of the iterations, as in iteration concrete, testable hypotheses are created and tested with customers before conclusions are drawn from the analysis. This testing serves as the fundamental process of how the company learns about its business model. As a result, the organization and each of its members have a responsibility to learn from the experiments and to share what they have learned with other members. Additionally, since Lean Startup recognizes the difference between development and scaling of the product, there are differences in the requirements for methods used to create new knowledge inside the startup in the different phases. As knowledge is a critical resource that companies aiming for global success have (Knight & Cavusgil, 2004), it can, therefore, be stated that knowledge management has a significant role in the utilization of the Lean Startup methodology.

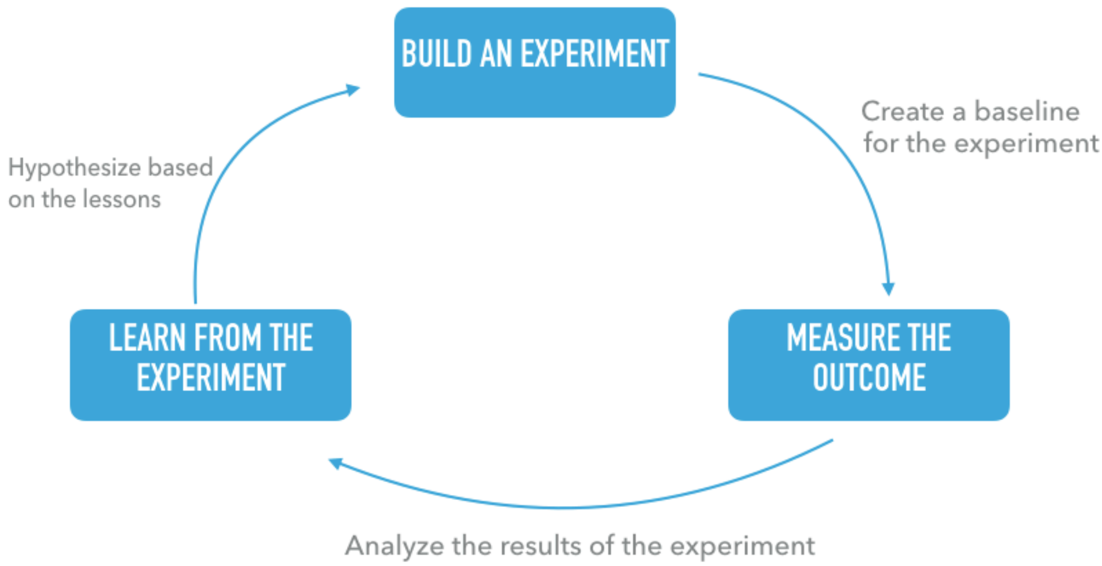

Figure 4 - Build-Measure-Learn Loop (Ries, 2011)

A more comprehensive literature review on knowledge management in startups (Centobelli et al., 2017) noted that the current existing body of research in the domain is very limited leading to a need for more research in this specific context. The existing studies that focus on how knowledge is used in startups include studies on the influence of founder's previous experiences on profitability (Oe & Mitsuhashi, 2013), leadership styles (Zaech & Baldegger, 2017) and the influence of reciprocal knowledge sharing relationships with other startups (Allen et al., 2016). One common pattern seen in the existing studies is a focus on mature startups, meaning that the studied startups are no longer in their early stages of funding. For example, one of the most extensive studies undertaken in the startup community was carried out by Baron and Hannan (2002) who studied organizational patterns in startups which had already gone public. While the results contain significant insights into startups, the research, however, opens a question regarding the organizational practices inside younger startups, and the applicability of the results derived in mature startups to young startups. Particularly, questions are raised from the perspective of knowledge since knowledge-usage patterns are created during the foundation and first years of the startup's life. These uncertainties raised by these questions emphasize the need for the early team members to remember to pay attention to the patterns of behavior inside the startup.

2.4 Summary

In this literature review chapter, previous research related to knowledge and knowledge sharing, motivation, and startups have been covered. Based on the presented research, and as a preface for the rest of the thesis, it can be stated that motivated individuals (Connelly et al., 2012) engage in knowledge sharing that takes place in a specific organizational context (Nonaka & Konno, 1998). As the knowledge residing inside individuals is by definition intangible (Polanyi, 1966; Nonaka & Takeuchi, 1995), it is challenging for managers to check if the members of the organization are sharing everything that they know. Hence, an essential task for all managers is to facilitate the sharing of knowledge between employees. One way of increasing knowledge sharing motivation is through the use of properly configured incentives. This described situation is the underlying foundation for the research questions presented in this dissertation. In other words, if and how incentives can be used to encourage knowledge sharing in a specific context. Knowledge sharing is essential for the success of the company, but more research is needed into how context influences the use of incentives is required, particularly in the startup context. With the discussion contained in this chapter, a theoretical foundation has been created that will help the reader to prepare for a more in-depth inquiry into the relationship between incentives and startups.

In regards to incentive usage to encourage knowledge sharing, from the perspective of motivating employees, it is crucial for managers to understand what type of behavioral model to use when analyzing the underlying motivations of the employees. However, this analysis process, is not as easy as it seems, and unexpected patterns of behavior can arise if the underlying motivations of actions are not thoroughly considered (Magee et al., 2011). Based on the presented literature review, there are two streams of motivation research, i.e., psychological and economic perspectives, that can be used in the analysis. From the first perspective, members have intrinsic motivation towards carrying out at least some parts of some of the tasks they have been assigned to. In these situations, managers need to understand what type of motivation is engaged, when, and how to support each of these motivation types in order to understand what types of incentives should be created or if no incentives should be used all. From the second perspective, members of the organization are only motivated by the utility they derive, i.e., the members are purely motivated by the benefits they can receive from the activities. Therefore, motivating members of the organization is an incentive customization process that is fundamentally a cost-benefit analysis problem that considers the cost of creating incentives versus the expected increase in output by the organization members. Regardless of the scenario, there is a significant emphasis on the manager having the theoretical tools to analyze the underlying motivation of the members. By deriving a solid understanding of the underlying motivation, managers design effective incentive programs targeting knowledge sharing. A deeper discussion of this incentive customization process will be presented in the next chapter with the goal of answering the first of the research questions that this dissertation targets. Through the results presented in the next chapter, the reader will gain insight into how incentives can be customized in order to target specific activities in specific contexts.

Following that, the nature of startups. As could be seen already from the literature covering the definition of a “startup,” and from the recent research trends, understanding the nature of startups can be a challenge. Moreover, understanding how these organizations function internally, and what motivates the individuals working in them can be a challenge. Untangling this web of motivations of startup members is a critical task for managers, as startups heavily rely on innovation to survive (Aulet & Murray, 2013). Given that knowledge sharing can help companies be more innovative (Wang & Noe, 2010), it is important for managers to create a solid foundation for knowledge sharing to take place. This is the foundation for the latter part of this dissertation. In that section, a deeper into the specifics of motivating knowledge sharing and the startup context will be presented with the aim to answer the second research question presented at the beginning of this dissertation. Through an in-depth analysis of the factors influencing knowledge sharing motivation in the startup context, understanding how, and more importantly if, incentives can be used to encourage knowledge sharing in startups becomes clearer.

However, before starting the inquiry into the interaction between specific context and incentives for knowledge sharing, the next chapter will cover the creation and analysis of incentive systems with a particular focus on knowledge sharing.

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Chapter 3. Incentives, motivation, and knowledge sharing

The last chapter covered the basics of understanding motivation and concluded with a note stating that it is crucial for managers and leaders to understand the motivations of their organization's members so that, if needed, employees' motivations to carry out specific actions can be supported. One key way of supporting, or even improving, motivation is through the use of incentives.

There are many definitions for "incentive" which depends on the field where the term is used. For example, Grant (2002), who studied the definition of "incentive," noted that early definitions of the word "incentive" was used with the meaning of "inciting or arousing to feeling or action, provocative, exciting" (p.144). This definition already gives insight into how incentives influence behavior as incentives could be used to arouse the target's interest in a given task. Later, Hull (1943) defined incentives as "substance or commodity in the environment which satisfies a need" (p.131), which switches the definition to be related to a substance instead of a description of a feeling. This second definition, founded on behavioral theory, disregards the fact that incentives can also take on non-tangible forms. For the purposes of this dissertation, based on Grant's (2002) definition, an incentive is defined as:

An incentive is an offer of something of value with a cash equivalent and sometimes not, meant to alter person's course of action

In contrast to Grant (2002), this definition leaves out the notion of linking incentives to utility calculations due to the fact that utility calculation is firmly linked to an economic perspective. Therefore, to allow also for a discussion of the psychological factors regarding incentives, and the link to utility calculation has been purposefully left out. Furthermore, the presented definition also allows for discussion regarding non-tangible & non-monetary incentives, which need to be consider in situations such as when incentives are offered for online sharing of knowledge.

The definition used implies that incentives are used to influence behavior in such a way that a wanted behavioral pattern emerges. However, not all incentives are effective and, in fact, some might be even detrimental to motivation levels (Magee et al., 2011; Ceracoli et al., 2014) or even cause long-term harm to the underlying motivation of the targeted person (Gubler et al., 2016). The variation in the results derived from incentive use is due to the fact that incentives, which usually target behavior in short-time scale, influence the overall organization's behavioral norms and organizational culture, both of which have an impact on a longer-timescale (Jansen & Von Glinow, 1985). As a result, it is often hard to predict the exact results of a created incentive, and calls for incentives be customized to meet the motivational needs of the organizational members in order for an incentive to result in the wanted outcome.

Questions regarding the ethics of using incentives to encourage specific forms of behavior have been previously raised. According to Grant (2002), this discussion is founded on the dilemma regarding control in the organization where power, that is the use of incentives, can be both used both as means of persuasion and coercion to influence the behavior of individuals. This problematic persuasion-coercion dichotomy is often disregarded in the discussion about incentive use as the definition of incentives and the morality of the use of incentives is left out of the scope of considerations. Readers interested in the ethics of incentives are directed towards the work of Baucus and Beck-Dudley (2005), Grant (2011), and Jansen and Von Glinow (1985) for a more thorough discussion on the topic.

For the goals of this dissertation, it is assumed that incentives are used to persuade individuals to engage in a specific behavior. The reason for this limitation is because knowledge sharing is ultimately a voluntary activity to which individuals need to choose to take part in. As (tacit) knowledge is intangible, it is by definition hard to know exactly how much knowledge has been shared. While explicit knowledge is easier to share, the knowledge that has not been documented or has been inaccurately documented still shares similar characteristics to tacit in regards to sharing. That is, it is hard for managers to check if all relevant knowledge has been shared with relevant individuals. Hence, individuals need to choose to share the most critical knowledge, which, however, can be missing some key aspects that the receiver would need to carry out their activities. As a result, from the managers' point of view, individuals cannot be forced to share knowledge as this might not result in sharing of all critical components needed for other to carry out their activities. Therefore, for managers, incentives that persuade people to share more crucial knowledge are the only types of incentives that can be used.

Overall the goal of this chapter is to help leaders use incentive systems with particular focus on the creation and analysis of incentive systems. This chapter can be broadly divided into two sections: in the first part, incentives and incentive systems are presented, and an incentive analysis framework is introduced. In the second part, previously created incentive systems are analyzed with the presented framework, and the impact of the incentive system on the organization and its members are discussed. The original research covered in this chapter is based on publications of Laitinen and Senoo (2015, 2016) can be found in the latter part of the chapter.

3.1 Analyzing Incentive Systems

3.1.1 On Incentive Systems and Incentive Types

Structured incentive systems are often referenced when talking about incentives in an organizational context. According to Magee et al., (2011) incentive systems consist of three factors: First, an incentive system includes a *performance measure* to understand how well the target performed in the targeted task. Second, the performance level of the targeted individual is compared to the *wanted performance level*. Third, if the targeted individual has performed better than the wanted level, the *incentive instrument*, is given to the target. Additionally, it should be noted that the incentive instrument can be both positive or negative. A positive incentive instrument is called a reward and is given to the targeted individual after the completion of the task. In contrast, a negative incentive is punishments for not carrying out the given task. For the incentive system to function correctly, it is crucial to understand all three components of the incentive system.

Most of the existing body of research on incentive systems has focused on the incentive instruments. Notably, a significant body of research has been created within experimental psychology with the goal of better understanding how the incentive system influences individual's motivation to carry out a task (See Ceracoli et al., 2014 for a recent literature review). In managerial and organizational sciences, the research focus on incentives has been on the forms that incentives can take (e.g., Chen at al., 1999; Magee et al., 2011; Gupta & Shaw, 2014). Performance measurement has also received attention, but creating a suitable measurement standard has proven to be challenging (Franco-Santos et al., 2012; Gibbs et al., 2009).

From an economics point of view, the use of incentives is driven by the goal of realigning the self-interest of the targeted individual with the organizational target. This can be done by creating incentives that encourage the individual carrying out the task by engaging in a specific pattern of behavior in order to achieve the incentive used. The reverse is also possible: if the disincentive, i.e., punishment, is significant enough, then the individual will likely refrain from engaging in the targeted activity. As the traditional economic model of behavior was based rational individuals engaging in utility maximization for a given activity (Goodwin et al., 2013), the task at hand for the incentive creator is to balance the cost of the incentive for the company with the utility outcome for the employee. This cost-benefit perspective on incentive use has been particularly useful in situations where the inputs and outputs of a given task are easy to monitor, for example, activities such as piece rate work (Fehr & Schmidt, 2004). Notably, while the utility outcomes of specific activities are based on the utility offered by the incentive instrument, the comparison between the utilities that can be derived from the various activities should, in theory, be relatively simple for the targeted individual. However, when monitoring the resources used by the task or the task itself becomes more complex, creating a utility-maximizing incentive becomes more challenging (for an overview of contract theory, see Koszegi, 2014). As a result, relying on purely utility maximizing behavior in a modern organizational context, where tasks are increasingly more complex and difficult to monitor, could be problematic.

In psychological research, incentives are broadly divided based on what means are used to target extrinsic motivation. The variation in the incentive instruments is based on the fact that extrinsic motivation is engaged when an individual engages in an activity due to any type of external reward (Ryan & Deci 2000). A well-known classification of incentives comes from Deci, Koestner, and Ryan (2001), who divide incentive instruments into four categories based on how incentives are related to the performance of the task, i.e., the contingency of the incentive. The categories are engagement-, completion-, performance- and non-contingent incentives. Based on a meta-analysis of incentive research (Ceracoli et al., 2014), it can be stated that, while incentives can influence extrinsic motivation positively, they have a more complicated relationship with intrinsic motivation. This is because the incentive system causes a stricter control over the task, which is detrimental to the levels of intrinsic motivation. In contrast, less controlling incentives systems influence motivation positively. While the experimental is mostly based on controlled experiments in laboratory setting, these results call for more attention to how incentives are created for the workplace since the translation of the laboratory results to organizations are not as straightforward as it seems.

In regards to the actual forms of incentive instruments used in companies, Chen at al., (1999) surveyed companies on what types of organizational benefits are used to reward employees. As noted before, the difference between "a reward" and "an incentive" is the timeline – an incentive becomes a reward once the task has been completed. Based on the results of the survey, the used incentives can be divided into four dichotomous groups:

- *Intrinsic and extrinsic:* Intrinsic rewards are factors such as the feeling of competence from carrying out a given task while extrinsic rewards are such as a bonus. Chen et al., (1999, p.49) note that content factors related to the job such as responsibilities and autonomy are intrinsic, whereas job tenure and job title are extrinsic rewards. While it is possible to argue that an intrinsic incentive is an oxymoron, intrinsic motivation to carry out the task is an important factor in the enjoyment of the job.
- *Monetary and non-monetary*: Monetary rewards such as a bonus (which is an extrinsic reward taking a monetary form) or stock options are frequently used in various types of businesses. Non-monetary rewards can various forms such as recognition for good performance.

- *Collective and individual:* Incentives can be made to target individuals or groups. An example of a collective incentive is profit sharing where if the organization performs better than the set requirement, the excess profits can be divided amongst its members. For individual-level incentives, the incentive is targeted at a specific individual for carrying a specific task.
- *Fixed and variable:* incentives can also be configured in such a way so that they consider the success level of the performance. For example, by achieving 150% of the sales goal, the incentive can be 50% bigger than the base level. This variability in the incentive is in contrast to an all-or-nothing incentive system, where failure to meet 100% of the required level does not trigger the payment of the incentive. Additionally, performing at 150% level against the expected level in a fixed incentive system triggers the incentive but does not give more than the base level of the incentive instrument.

These four dimensions are not necessarily exclusive as the form of incentive instruments can overlap in some of the dimensions that they share. For example, a bonus stock option given at the end of the year to all members of the organization can be more precisely be categorized as an extrinsic-monetary-group-targeting incentive.

This multitude of incentive instruments highlights the key problem in creating incentives: what incentives should be used and when? In order to solve this problem, the incentive creator's understanding of what type of motivation theory to use to analyze the employees' underlying motivations becomes critical, since it is hard to motivate other employees if the manager does not understand what normally motivates them. Therefore, the key role of management is to understand what currently motivates employees to carry out their tasks. If members of the organization are more motivated by intrinsic factors, then the used incentives should be created in a way that aligns with the underlying motivations. Intrinsic motivation is particularly delicate to the use of incentives since the extrinsic motivators can crowd-out intrinsic motivation for the task itself (Frey & Jegen, 2001; Gubler, et al. 2016). In contrast, if the manager knows that the members of the organization are motivated by extrinsic factors, such as pay, then creating a suitable incentive is targeting a specific task is relatively more straightforward.

While guides for managers on how to create incentives exist (Aguinish et al., 2013; Gneezy et al., 2011), there have been recent calls for research to target incentive instruments in real life situations (Gupta & Shaw, 2014). The need for more practical research is founded on previous research that has pointed out that the relationship between monetary compensation and other types of compensation (Shaffer & Arkes, 2009; Gneezy & Rustichini, 2000; Lea & Webley, 2006) and whom to target (Dickinson, 2001; Barnes et al., 2011) is very complicated. The conflicts in the previous research also emphasize that incentive systems should not be just copy-pasted from other organizations since the organizational context and members' motivations are likely to be completely different. If these factors are not considered, it is possible that the copied incentive system could have unexpected long-term influences on the targeted individuals and on the organization itself. Hence, incentive systems should be carefully analyzed before implementation.

3.1.2 The Influence of Incentives on Individuals

As discussed in the previous section, incentives are used to encourage members of an organization to engage specific behavior, which is then compared against a previously set performance measure. If the performance exceeds the wanted level, the used incentive is given to the individual. While abstract description captures the essentials of an incentive system, it disregards the perspective of a member of the organization and the organization itself which raises a variety of questions regarding the use of incentives. Indeed, how does the targeted member perceive the incentive system used? For example, if participation in a knowledge sharing program is encouraged through the offering of incentives, then how does a specific person being targeted by the incentive system decide if they should engage in the suggested behavior?

Bowles and Polania-Reyes (2012) argue that any created incentive system carries more information that is perceived by the creator of the system. That is, the targeted member of the organization will receive more information than just the brief overview of the performance measure, performance standard, and the incentive instrument. The extra information, in turn, influences how the individual behaves. The influence of the extra information on the behavior of the individual is based on how the targeted individual's preferences align with the incentive. In other words, social preferences (e.g., Bowles, 1998), that is other-regarding preferences such as altruism and reciprocity, should also be considered instead of just considering individual's preferences for maximizing material payoff. This notion of the importance for social preferences has been supported in previous research (Camerer & Fehr, 2004; Fehr & Fischbacher, 2002; Levitt & List, 2007).

Building on the work of Bowles (1998), Bowles and Polania-Reyes (2012, p.376) argue that incentive systems carry signaling information in addition to the plain facts of the incentive instrument and the performance measurements. The researchers divide the information into two categories based on what the incentive influences. The two categories are state-dependent preferences, or how incentives influence behavior through signaling information, and endogenous preferences, or how incentives influence the evolution of norms of behavior. Furthermore, Bowles and Polania-Reyes (2012) divide the short-timescale signaling information into three types: information, framing, and self-determination. Each of these three components informs the targeted individual something about the incentivized task and the creator of the incentive:

- *Information (i.e., "bad news")*: Signaling information about the incentive system designer's type and attitude towards the task. To be more specific, this information can inform the targeted individual about what type of person designed the incentive, how the designer understands the task, and about the nature of the task.

- *Framing (i.e., "moral disengagement"):* Information about how the incentive system frames the incentivized task also suggests about the context of the task.

More specifically, in situations where incentives are used, the way the incentive is presented influences the set of suitable actions, and it can trigger own-utility maximization frames of mind, where the downsides of the taken actions are not considered due to the large gains that can be made.

- *Self-determination (i.e., "control aversion"):* The incentive system can also imply that the designer wants to strictly control the behavior of the targeted member. More specifically, this type of information about an incentive designer setting stringent behavioral conditions can inform the targeted member about attempts to control how the individual engages in the incentivized activity. This, however, can dangerously undermine self-determination, a key element of intrinsic motivation. As a result, the targeted member might begin to resist the incentivized activity.

The information categories listed above show the extra information that any proposed incentive system gives to the targeted individual extra information about the designer and the task. As this extra information is usually not considered by the designer, it can lead to the rise of unexpected results from the incentivized activity.

Overall it can be stated that, for an incentive designer, the presented analysis framework means that she not only needs to understand how to design incentives that target changing specific goals but also have an insight into the motivations of the targeted individual. The framework by Bowles and Polania-Reyes (2012) is a good starting place for analyzing the extra information carried by incentive systems. The use of the framework is particularly critical in situations where utility maximization behavior might occur as theoretical models have shown that these situations can result in patterns of behavior where the targeted individuals disregard all of the non-incentivized activities (Fehr & Schmidt, 2004).

3.1.3 The Influence of incentives on Organizational Norms

An often-neglected factor of incentives is their influence on the long-term timescale. It is quite surprising that frequently incentives target only short-term factors given that attention that effects such as crowding out, which have a long-term influence on the organization, have received significant attention in psychological research (Bareket-Bojmel et al., 2017). This implies that incentives do not work in a vacuum but take place in a context (Bowles & Polania-Reyes, 2012). Misunderstanding the context of the incentive is damaging to the goals of the incentive and can result in unexpected results. Therefore, the relevant contextual factors of the incentive system should be understood before the system is finalized and deployed. In a broader sense, this includes understanding contextual factors such as organizational norms and the relationships between the interacting individuals. The logic behind the argument for the importance of understanding contextual factors derives from the definition of context, which Johns (2006, p.386) summarized as follows:

> *"context as situational opportunities and constraints that affect the occurrence and meaning of organizational behavior as well as functional relationships between variables."*

Based on this definition, understanding that incentives do not exist in a vacuum but are embedded in the organizational and relational context can help managers better understand what are the possible unexpected impacts the proposed incentive system might have. Within economic research, these factors have also been called endogenous preferences (Bowles, 1998).

As discussed by Bowles and Polania-Reyes (2012), incentives need to fit the prevailing preferences of the group of people, which in an organizational context equates to the culture of the organization. Organizational culture can be defined as "the basic assumptions and beliefs that are shared by the organizational members" (Schein, 1985, p.9). Based on organizational culture, behavioral norms are created through the daily patterns of behavior that exists between the organization's members. Of particular importance to the development of norms are the actions of early members (Schein, 1983) and of those members, who are in positions of power and influence (O'Reilly et al., 2014). Once a new member joins the organization, they start to adapt their patterns of behavior to those of the prevalent in the organization (Antonacopoulou & Güttel, 2010; Bowles & Polania-Reyes, 2012). The process of change in the prevalent preferences of the organization happens gradually over time as more individuals adapt to the preferences and patterns of behavior of the most influential individuals. As a result, over time, the preferences of all of the members of the organization will start to resemble the prevalent organizational norms (Bowles, 1998).

In order to be able to design effective incentives, it is important to understand the relationships and norms that govern the interactions between individuals of the organization. As endogenous preferences have a significant effect on the behavior of the individual, studying the relationships and behavior of individuals can give insight into the governing norms of the relationship and the motivations of the interacting individuals. Fiske (1992) notes this in his theory of Relational Models and predicts that these types of dyadic relationships can be classified into a limited number of stereotypical relationships that are governed by distinct norms of behavior, which dictate what suitable actions and expectations towards the relevant parties in any given relationship. The relationships are categorized in the Relational Models Theory (Fiske 1992, p.694) as follows:

- *Communal sharing.* Emphasis is on the members belonging to a common group that shares something bigger in common. Members give what they can and take what they need from a common pool of resources, and results of work are considered to be a part of the common resource pool. As a result, the group makes decisions through consensus decision-making, and members seek to find similarities between each other. Typical examples of these types of organizations are religious groups and tribes.
- *Authority ranking.* Superiors receive tribute from their inferiors while superiors have a responsibility to provide and protect inferiors. The superior receives the best things and controls all of the resources of the group. Superior makes all the decisions and do not engage in daily activities to benefit the group. These types of organizations usually have clear levels of hierarchy that needs to be obeyed.

Some Typical examples of this type of organizations are military and governments.

- *Equity matching.* Balanced reciprocity between members transferring similar things between them. Individuals in these types of relationships seek to maintain a balance between what has been received and given. This means that when an individual receives something from the other member, she is obliged to give something of equal worth back to the original giver. Decisions are made in a one-man-one-vote system. Fiske (1992, p.702) notes that these types of relationships are the generic blueprints for interacting individuals. Without the influence of context that can shift relationships to other categories already from the start, individuals first starting to interact would use this type as a guideline for their interaction. Typical organization exemplifying this relationship type includes rotating credit association.
- *Market pricing*. Pricing or exchange of various commodities between individuals where the value of the exchanged commodities depends on their value in a market environment. Individuals are paid according to the market value of their contributions to the organization, and as a result, decisions regarding the activities individuals engage in are made based on the deriving the maximum market price. This means that the relationships with a stereotypical business organization would use this type of relationship.
- *Asocial and null relationships*. Relationships in which one person uses another to a non-social or ulterior end, or relationships that disregard social aspects of relationships. While interesting in themselves, these relationship types are not

typically the blueprints of any organization since working relationships with other entities are critical for the survival of any single entity.

From these relationships, the first four are thought of as the core blueprints of various social relationships. While the multiple models can be in use in different aspects of a single relationship (Fiske, 1992, p.711), the members in each of the relationship actively try to upkeep the norms of the relationship (Fiske, 1992, p.716). If one takes actions that violate the norms of the relationship, the other party will modify their behavior towards the infracting parties. Should the infringing behavior continue, the relationship will start to slowly move towards another type. While individual members of the organization are motivated to follow the prevalent norms of the group (Lindenberg, 2001), according to Van Kleef et al., (2015), the breaking of norms can happen for various reasons existing on both the individual level (e.g. high social or power level, low regard for rules) and the group level (e.g. actions against or for the norms by other members of the organization).

Fiske (1992, p.716) theorizes that violating the expected contribution levels towards a common good by not contributing enough would result in the violator to be excluded from the benefits derived from similar activities that others have carried out. Should an infraction be carried out by a member with significant social influence, such as the group leader, the action would have a significant influence on the behavior of the members of the organization as the standard for expected behavior will have been modified. Particularly, if the norm violations happen frequently, then the number of people following the influencer's example will start to grow resulting in a new pattern of behavior that begins to gain acceptance over time. The result of this is that the prevailing culture in the organization starts to change over time.

When incentives are introduced into the organization, understanding (other) members' behavior in regards to the organizational norms become more complex as the incentives can influence the ultimate goals of the member. In situations where incentives are present, and it is no longer easy to see if actions are carried out due to the prevalent incentives or due to norms of behavior reasons, the impact of the incentive system on the organizational culture becomes hard to predict.

3.1.4 Combining the Individual and the Organization Perspectives

In an organizational context, the incentives creator, therefore, needs to consider both individual level and organizational level factors. In the previous sections, two frameworks for analyzing the relevant factors to these two levels of analysis were introduced. As a result, combining Fiske's (1992) theory on relational context with the analytical framework of incentives from Bowles and Polania-Reyes (2012) results in a robust framework that enables the analysis of not only the signaling information from the incentive system but also if the incentive fits prevalent preferences, i.e., the overall organizational culture. This new framework was described by Laitinen and Senoo (2015, 2016) who created the analysis framework with incentive system analysis in mind as a tool for practitioners and academics to use in their work. The new framework comprises of three components that can be summarized as follows:

- Incentive system: analysis of the measurement standard, the performance measurement, and the incentive instrument compatibility in the short-term and long-term dimensions.
- Behavior, or the short-term dimensions: information about the incentive creator, framing of the incentive, and self-determination. These factors need to be considered in the prevailing relational context, i.e., Fiske's Relational Model classification of the relationship, in order to understand what are the underlying motivations of targeted individuals to carry out the wanted task and to see if the proposed incentive breaks the prevailing relational norms. Incentives with a short-term focus can be analyzed after the long-term dimensions are understood.
- Norms or the long-term dimension: analysis regarding the endogenous preferences update and how the updated preferences modify the relationship classification between the members of the organization. Long-term dimension restricts what types of incentives generally fit the organization.

The framework is depicted in Figure 5. The three dimensions need to be aligned in order for the proposed incentive system to result in the wanted outcome. Notably, while incentives can be compatible in the short-term scale, they can be indirectly incompatible with the long-term scale. In such cases, the short-term incentive can cause a detrimental change to the organizational culture. Example of this is when an incentive crowds-out intrinsic motivation for a task due to extrinsic motivators overpowering the intrinsic motivation. However, since norms of behavior dictate the expected behavior for each member in the group, the short-term dimension is influenced by the long-term dimension. Therefore, while the main focus is on the short-term influence of the incentive, the long-term factors dictate the available subset of incentives the incentive designer can use.

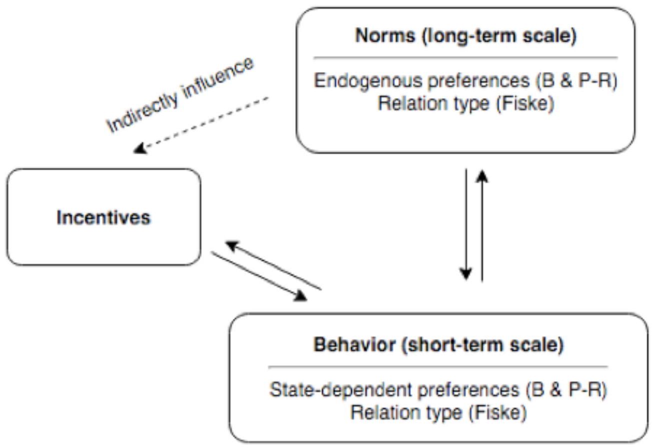

Figure 5 - Incentive analysis framework (Laitinen & Senoo, 2016)

As an example of the use of the framework Laitinen and Senoo analyzed the effects of incentives used to encourage knowledge sharing in previously published studies, and compared the predictions derived with the framework to two alternative methods of analysis, namely psychological and economic perspectives. Additionally, the researchers hypothesize about incentive usage and what are the predictions made by each theoretical framework. A compilation of the predicted effects from the three frameworks are shown in Table 1.

The dimensions the researchers use are the speed of effect taking place, the speed of change in the organization, the scale of effect on the organization, what factors influence the success of the proposed incentive, and how context influences the proposed incentive. These dimensions were chosen to highlight the key dimensions in incentive design from the practitioner's perspective.

Based on Table 1, it can be stated that the three frameworks have significantly different success factors. For example, a traditional economic approach states that a marginally bigger incentive would cause the whole group to immediately change their behavior as soon as they become aware of the change in the outcomes of the activities. In contrast, the other two frameworks predict that change would take over time, and that only a fraction of members would instantly switch their activities to the new one.

The comparison table shows that the combination of Fiske (1992) together with Bowles and Polania-Reyes (2012) covers more factors and allows for more refined analysis of the predicted effects of incentive programs than either a purely economic or psychological approach would allow. Hence, the proposed framework allows the incentive system designers to gain more insight on the activities they are trying to target. To further support their argument Laitinen and Senoo (2016) analyzed incentive programs targeted at increasing the amount of knowledge shared by members of organizations. The main results of this analysis will be described in the next subchapter.

Table 1 - Comparison of the influence of incentives (adapted from Laitinen & Senoo, 2016)

Dimension	Economic approach (Utility theory)	Psychological approach (experimental evidence)	Combined framework
Timescale	Short	Short to medium	Short to medium
Change speed	Rapid	Medium	Rapid to medium
Scale of effect	Whole group, only positive effects	Whole group if properly designed, can be either positive or negative	Scale depends on group norms; effects can be positive and negative at the same time
Success factors	Correct configuration of the derived utility	Target's level of interest in the task, task type, incentive type used, and if the payment of the incentive is expected or not	Correct alignment of incentives with the signaling information they send out, prevalent preferences of the incentive targets, and relation model used between members
Influence of context	No influence	Moderate influence	Significant influence

3.2 Analyzing Incentives for Knowledge Sharing in an Organizational Context

Knowledge sharing is a voluntary activity where individuals share knowledge with others. The level that an individual voluntarily takes part in the sharing is determined by herself since it is hard for the others to check if all the knowledge one possesses has been shared or not (Connely et al., 2012). As discussed before, the use of incentives can be one way to encourage individuals to share more of their relevant knowledge with others. The use of incentives, however, can be quite challenging as creating incentive systems to target knowledge sharing activities can be quite challenging since measuring the level of sharing is difficult outside of IT systems.

To better understand how incentive systems function in regards to increasing knowledge sharing, Laitinen and Senoo (2015) analyzed multiple cases of incentive usage to encourage knowledge sharing, the predicted impact of the incentive and compared the predicted outcome with the actual reported result of the incentive system. This work was carried out by using previously published incentives system reports from researchers. Of the analyzed cases, there are two of particular interest: sharing is rewarded by points, which can later be exchanged for prices (Voelpel & Han, 2005; Voelpel et al., 2005), and sharing for points, which can be used to mandatory requirement for career advancement (Moon & Park, 2002).

It should be noted that some of the fundamental aspects of the two cases overlap. In both of the presented studies, the analyzed knowledge sharing takes place in an online knowledge management system. The users get points for activities such as answering questions that others have posted, for posting new questions, and for creating suggestions for new services, products that the company can create. In both of the presented cases, the leadership of the organization supported and promoted the launch of the system in order to encourage user adaption of the system and for users to contribute more knowledge to the knowledge management system. Additionally, both incentive systems used the user activity levels as a measurement of their level of knowledge sharing, based on which the users were the rewarded with points that could be used to redeem in exchange for prices ranging from electronic devices to holidays.

3.2.1 Case 1: Sharing for Points

The first case is based on the work of Voelpel and Han (2005) with supporting details derived from Voelpel et al., (2005). The goals of the used incentive system can be summarized used as follows: organization members are incentivized with a money-like incentive to make voluntary knowledge contributions to an online system that is used globally by a major global enterprise. By using the combined framework suggested Laitinen and Senoo (2016), it can be stated that the incentive system might create utility maximizing behavior since the relational component of the with other users is hard to understand as there is no personal interaction with other members and because the contributions are only measured by the number of messages submitted. These factors imply that as long as the promised incentive is redeemable in the foreseeable future, the users are likely to carry out the wanted actions.

However, as noted above, since this incentive system does not engage the individual's deeper social relationships in sharing with others, that is the users do not develop deeper personal relationships with other users, it can be deduced that if the incentive is removed, the reason to contribute would disappear since the norms related to knowledge contributions in the knowledge management system are entirely based on the incentive system while disregarding the social norms of behavior. To put in another way, the key point of this incentive system is that each sharing act is rewarded with points that can be redeemed. Hence, the way the incentive system is set up, it frames the incentive related to knowledge contribution activities in a as it was a monetary incentive (Lea & Webley, 2006). Together with the message number being used as the only measure of activity, it frames the activity as a utility maximizing activity. Therefore, in the beginning, it could be expected that, with the signaling information of extra payoff that can be received from the introduction of the system, early adopters would start to contribute knowledge to the system thus creating a growing ecosystem.

At first, the sharing levels increased significantly with the user base increasing from early adaptors to a wider audience due to a more widespread adaption. The participation levels would continue to grow and result in a considerable size knowledge sharing community with participants from numerous offices. The increase of users would align with utility-maximizing behavior since individuals were paid by contribution, and through a few simple steps, individuals could gain an increased payoff. In turn, this increase in the number of active users, who can gain access to new knowledge and insights that others have contributed. However, if the growing contribution activities are analyzed from a relational point of view, the increased number of new, semi-anonymous users to the system also makes it harder to understand why other contributors are sharing: are the new users sharing out of their kindness or is the sharing done to gain the incentive? Since making this distinction between the possible sharing motivations is hard for the average user, it would be hard for the users of the system to categorize their relationships between other users into a single relational model category and to know if specific norms of behavior apply to the other users. Therefore, it can be concluded that the incentive system does not consider the signaling information regarding relational models. This would imply that the average user would use equity matching as the relational blueprint.

Based on the framework by Bowles and Polania-Reyes (2012), the overall framing of the incentive system implies that utility maximizing behavior would acceptable in the online system and expected by the incentive designer. These features realign the relationships in the knowledge management system with market pricing behavior (Fiske, 1992). Therefore, based on this factor, the incentive customization framework predicts that contribution levels would grow as long as the incentive system are credible. This is exactly what happened as users continued to contribute knowledge to the system thus increasing the benefit they could derive from its usage.

Soon after the launch of the knowledge management system, the company financial situation took an unexpected downturn, which forced them to stop the redeeming points gathered by the users. This point freeze undermined the whole function of the incentive system was founded on since the users' ability to derive a monetary benefit from the sharing of knowledge disappeared. In other words, due to the decision to freeze payouts, the incentive for the users to make new knowledge contributions to the system was gone, and the previously derived points had become, in fact, worthless. The combined framework predicted that once the incentive is removed, and with no support from the long-term norms for sharing, the contributions would start to significantly drop as the new benefits that can be derived from using the existing knowledge in the system would start to drop rapidly. With the drop in the new contribution rates, it can be predicted that the system would end up with only minimal new contributions from the most active users while there would also be significant abandonment of the system by the general users. According to the reported results (Voelpel & Han, 2005), this is exactly what happened: contribution levels started to dropping significantly and ended with only a few users contributing to the system.

This case highlights that while the incentive system functioned adequately on a short-term perspective, the designer had forgotten to analyze how the incentive system influences the long-term behavioral patterns of the targeted members. If the incentive system would have engaged the relational aspect in some, for example through emphasizing the relationships between people through the creation an online social expert network, over time the norms of sharing could have been changed to support knowledge contributions to the system even without the existence of the incentive. In such a case, the drop in the submission levels would not have been as significant as the relational aspects of sharing would have supported the sharing activities of the active member.

3.2.2 Case 2: Mandatory Sharing

The second case also discusses sharing for points, but with a few key differences regarding the sharing activities. The details of this case come from a report written by Moon and Park (2002). The fundamental differences from the first case are that all submissions go through a review process after which the submission was either accepted or rejected by reviewers, i.e., managers and system administrators, and that the points earned from sharing could be used to become exempt from the training criteria needed for promotion if earned by a specific date.

Similar to the case described by Voelpel and Han (2005), the incentive system encourages utility maximization behavior with the inclusion of a point system. Additional support for utility-maximizing behavior through the submission of all knowledge to the review comes from the fact that knowledge contributions were valued at an order of magnitude higher than any other activity. Hence, it is reasonable to assume that users will make contributions throughout the year as long as the future fungibility of the points remains credible.

What is different from the previous incentive system is the fact that all contributions to the knowledge management system will go through a review process before being accepted or rejected. When analyzing the incentive system with the proposed incentive customization framework, it can be seen that the review system gives signaling information regarding the relationship between the submitters and reviewers through the notion that it is only the reviewers are in a position to decide if knowledge contributions to the system are valuable or not. This implies a strict hierarchical relationship, i.e., authority ranking (Fiske, 1992), between the members of the organization. In such relationships, the lower ranked person is expected to contribute knowledge towards the goals of the superior but the superior is also expected to take care of their subordinates.

In these types of relationships, the subordinate, i.e., the knowledge contributor, should be able to expect increasing benefits that can be derived through contributing knowledge to the knowledge management system. However, since the submission review process is combined with the yearly considerations for promotions, the incentive system works against the expected norms of behavior. There are two reasons for this conflict: First, the possibility of non-increasing benefits that can be derived from sharing due to rejected contributions. This can be a problem due to the difficulty of evaluating the value of knowledge (Ragab & Arisha, 2013), which in turn can lead to valuable contributions being rejected or being significantly undervalued by the reviewers. Second, the cyclic promotion system removes the considerations for the gained benefits after the deadline has passed (Moon & Park, 2002). As such, there is an incentive to submit new knowledge contributions closer to the promotion considerations that right after the deadline has passed.

Based on the analyzed factors, it can be predicted that the knowledge submissions to the system would have a cyclic form that would peak towards the evaluation date before a rapid decrease after the deadline. It can also be predicted, based on the difficulty of evaluating knowledge and the significantly increasing number of submissions as the promotion deadline approaches, that the rejection rate would increase more in proportion to submissions. According to the reporting of Moon and Park (2002), this is exactly what happened: submission level peaked before the deadline for promotion consideration followed by a decline after the passing of the deadline. Additionally, as the submission numbers to the system increased, the proportion of rejections increased as the proportion of accepted submission. This cycle is expected to repeat year on year.

Moon and Park have not reported any follow-up on the current state of the system and, therefore, it is not possible to compare the predicted results on what will happen if the incentive system is changed or removed. The customization framework predicts that as long the incentive system is in place, sharing will stay at a similar level without increasing significantly. This can be predicted because the system emphasizes the contribution much more than the actual use of knowledge since knowledge contributions are valued at an order of magnitude higher than any other activity. While the review process can help improve the existing knowledge quality in the system, there is no incentive to submit more than the required level of knowledge to the system since anything in addition to the minimum required. As can be seen from the yearly peaked contributions levels, the users were already trying to meet the minimum levels through the knowledge contributions in order to qualify for the exemption needed for promotion considerations. As there are no more incentives to contribute to the system, future contribution levels will likely stay at the same level. Should the point system be taken away, it is likely that the peaked form of submission levels would become even sharper as there would not be any incentive to submit outside the promotion consideration schedule. Based on these, it can be concluded that the design of the incentive system did influence knowledge contribution behavior but only during the promotion consideration season. Outside of it, there were no significant incentives to increase contribution levels to the system.

In this chapter, incentive systems, their design and usage, and their influence on knowledge sharing behavior has been discussed. The results of the chapter can be summarized as follows: through careful design of the incentive system, the members of the organization can be encouraged to engage in specific activities. However, this will only happen if the design of the incentive system takes into account the motivations of the individuals. In other words, the incentive designer needs to consider how the proposed incentive system influences short-term behavior of the targeted individuals and their contextual factors, that is what are the possible long-term influence of the proposed system. For incentive designers who are not sure if a proposed incentive system will result in the wanted outcome, the framework proposed by Laitinen and Senoo (2016) is a good starting point. The incentive customization framework that they proposed details both short-term and long-term analytical frames for incentive design and selection. As was shown through the analyzed incentive cases presented in this chapter, the use of the framework can provide valuable insight into the possible influences on short-term behavior and in addition to clarifying the analysis of long-term influences which are frequently overlooked by incentive designer. For the correct analysis of an incentive system by using the proposed framework, the designer has to be able to understand what are the underlying motivations for the target members to engage in the wanted activity and what norms govern their behavior. The correct analysis of the incentive system is particularly critical if the organization's members are motivated by intrinsic factors since incorrectly configured incentives can crowd-out the intrinsic motivation which can result in unexpected changes in the long-term behavioral patterns.

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Chapter 4. Knowledge Sharing Motivation in Startups

Incentives and their influence on the behavior of members of an organization have been discussed in length in the previous chapter with a focus on how to analyze incentives systems and how to predict the behavioral outcomes induced by the incentive system. With this goal in mind, a framework developed by Laitinen and Senoo (2016) was presented and used to analyze two cases of incentive system aiming to increase knowledge sharing. A key point of this analysis process is founded on understanding what the organizational context and particularly the underlying motivations of the targeted member is. From this chapter the focus of the dissertation moves to individuals working at startups with the goal of gaining a better understanding of what influences knowledge sharing in startups. Research regarding the motivations of members of startups was carried out through the use of case studies in Hong Kong and Japan. The analysis of the cases shows that understanding the underlying motivation of the member and the clarity of the vision for the company both play a significant role in understanding how incentives should be used.

This chapter is structured as follows: first, the motivations of the study are discussed, and then the included cases are described. After this, the cases are analyzed for cross-case patterns, and the found patterns are described. Finally, the implications from the patterns are presented before conclusions and limitations are discussed.

4.1 Background for the Study

Recently, startups have received significant attention from both academics (e.g., Bortolini et al., 2018; Centobelli et al., 2017) and practitioners (Ries, 2011). As this type of companies rely heavily on their innovation capabilities to compete with others (Aulet & Murray, 2013), knowledge plays a critical role in a startup's organization (Oe & Mitsuhashi, 2013). Therefore, managers of the organization should encourage its members to share more knowledge with others. While some aspects related to the use of incentives within startups have been previously researched (Hand, 2008; Kagan et al., 2017), their use to encourage knowledge sharing is not well understood. This gap in the body of knowledge highlights the need for more research on how incentives can be used to encourage knowledge sharing in startups. However, as has been theorized before by researchers such as Lindenberg (2001) that failure to understand underlying motivations will result in misconfigured incentives (Magee et al., 2008). The effects of misaligned incentives were discussed in the case studies section regarding the application of the incentive creation framework in Chapter 3. The results of lessons from the analysis can be summarized as follows: the underlying motivations of employees of startups need to be understood better before suitable incentives systems can be created.

Therefore, the research in this chapter aims to understand better the underlying motivations of individuals working and sharing knowledge in startups. Due to the lack of research regarding the knowledge sharing motivation in startups, case studies were carried with founders of startups. Founders were chosen as the targets of the interviews due to their significant influence on organizational culture (Schein, 1983) and because their behavior has an impact on the members' motivations (Bass, 1999; Cardon, 2008). Additionally, they see most activities that take place inside the young organization, so they are in a better position to comment on the overall activities that take place inside the organization.

In detail, the study covered in this chapter (Laitinen & Senoo, 2017) focused on two topics: first, founders' perceptions on what motivates the other members of the organization, and second, on the founders' perception for the need for knowledge-sharing incentives by other members of the organization. These topics were chosen due to the fact that founders will use their understanding of the perceived motivations of the other members as the foundation for any incentive programs they will create in the future (Magee et al., 2011).

4.2 Methodology and Interviews

As research into knowledge management and knowledge sharing in startups is a novel topic (Centobelli et al., 2017), a theory development approach was chosen in order to better understand the factors influencing motivation and knowledge sharing within startups and to for the purpose of creating a solid foundation for future researchers. With this goal in mind, a case-study approach (Ragin, 2014) was selected given its power for theory development in cases where there is a lack of existing theories (Eisenhardt & Graebner, 2007). Previous examples of researchers utilizing a case-study approach for theory creation within management research includes studies of startup ecosystems (Motoyama & Knowlton, 2017) and knowledge management and succession planning in SMEs (Durst & Wilhelm, 2012).

According to Eisenhardt (1989), and Eisenhardt and Graebner (2007), a case study approach involves the study of single or multiple cases in the creation of propositions, midrange theories and theoretical constructs of interest based on data collected through activities such as interviews, observations, and questionnaires. The cases chosen for analysis are chosen by the researcher with the aim of maximizing theoretical sampling. Once data from the cases has been gathered, it will be first analyzed within-case basis in order to for the researcher to become familiar with the data and to develop preliminary theories regarding the topics of interest. Once all cases have been analyzed, a cross-case analysis begins with the goal of finding cross-case patterns to fuel hypothesis development. Once a hypothesis has been developed, it will be compared against each case in order to refine the hypothesis to become more accurate and to check that the constructs developed for the hypothesis fit the data in each case. Finally, the refined theory is compared to results derived by other researchers. Through this comparison process against existing results, the created constructs and their relationships can once again be honed to be more precise. Once a theoretical saturation has been reached, the process of building theory from case studies is finished.

Hence, with theory creation targeting knowledge sharing in young startups in mind, researchers contacted founders of startups with a request to take part in a research interview. The interviews were carried out in Japan and Hong Kong between January and November 2016. These two locations were selected due to both of them having rapidly growing startup ecosystems and due to the researchers having access to interview candidates. Candidates to take part in the interviews were recruited from local startup events and through introductions from the local startup ecosystem members. The participating founders were selected based on the young age of the company but with a requirement that the company was at least one year old and that it had multiple members working in them. As a result, nine founders were selected for the interviews, with five founders from Hong Kong and four from Japan. Additionally, a lawyer with experience in creating incentive systems in startups was also added to the interviewees. This final addition was done to better understand what legal advice incentive designer, i.e., the lawyer, gives to the founders of startups. A table detailing the backgrounds of the interviewees is shown in Table 2. In the analysis and discussion sections, example quotations will be given from the interviews. Each of the quotations will be attributed to one of the interviewees with one of the identifiers also listed in Table 2.

Table 2 - Overview of the interviewees

Identifier	*Country*	*Type*	*Background*	*Number of co-founders*
JP1	JP	Founder	Finance	1
JP2	JP	Founder	Sales	2
JP3	JP	Founder	Sales	3
JP4	JP	Founder	Finance	3
JP5	JP	Lawyer	Lawyer	NA
HK1	HK	Founder	Finance	3
HK2	HK	Founder	Consulting	2
HK3	HK	Founder	Manufacturing	2
HK4	HK	Founder	Finance	3
HK5	HK	Founder	Serial entrepreneur	3

A semi-structured approach was selected for the interviews in order to elicit as many opinions and experiences regarding knowledge sharing, motivation and incentives as possible from the founders (Creswell, 2003; Schultze & Avital, 2011). The interviews lasted between 20 and 45minutes. All of the interviews were recorded and later transcribed by the researchers. Additionally, the researchers also took notes during the interview. The interviews were primarily carried out in English in both countries. In Japan, if the interviewee was not sure how to explain a concept in English, the researchers asked for clarification in Japanese. The researchers then translated the concept back to English and confirmed accuracy with the founder in order to check the consistency with the originally expressed idea.

4.3 Patterns within the Cases

The interviews were analyzed based on the instructions given by Eisenhardt (1989) by first finding patterns within cases which were used to create preliminary theories that was followed by cross-case analysis to flesh out the hypotheses. Once the preliminary hypotheses were fleshed out, they were compared across all of the cases to see how the created theory applies. Finally, the created theory was compared to previous findings.

Based on the analysis of the cases, two patterns regarding motivation emerged: first, founder vision clarity x employee motivation to share knowledge. This first cross-section contrasts how clearly the founder has defined the vision for the startup with how motivated the organization’s other members are to share knowledge with each other. The second cross-section that was found is founder’s perception for the need for incentives x employees’ collaboration motivation. This second cross-section contrasts how the founder perceives other members of the organization to be motivated with what type of motivation, intrinsic or extrinsic, drives employee motivation to keep working within the organization. In regards to theories of motivation, a split between intrinsic and extrinsic motivation was used based on Deci and Ryan (1985). This theory was chosen to be the foundation given its prevalence in motivation research (see discussion in Chapter 2).

The two patterns were mapped to a 2x2 matrix to show how the two analyzed dimensions interact. Next, the analyses of the two matrixes will be discussed before the derived results are discussed from a wider perspective in regards to knowledge sharing and startups.

4.3.1 Founder Vision Clarity X Employee Motivation to Share Knowledge

The first cross-section contrasts the founder's vision clarity for the goals of the startup with employees' motivation to share knowledge with other members of the organization. These dimensions were brought up in 9 out of the 10 cases, with the only exception being the case study with the lawyer. In the interviews that were carried out with the founders, three distinct patterns of interaction emerged: 1. high vision clarity x high motivation to share knowledge, 2. high vision clarity x low motivation to share knowledge, and 3. low clarity x high motivation to share knowledge. The found patterns are shown and characterized in Table 3.

Table 3 - Founder's Vision Clarity X Employee Motivation to Share Knowledge

Founder's vision clarity			
High	Employees are a way to achieve vision	Wants to achieve the vision together	
Low	(none)	Wants to work on an interesting topic	
	Low	High	**Employee motivation to share knowledge**

In the *first pattern*, the founder's vision for the company is clearly defined, and employees are highly motivated to share. In this case, both the founder's goals and the employees' goals are aligned with the ultimate goal of the organization. This alignment of goals should result in a high-performance output from the employees as they are motivated to achieve the vision of the company. Example of this case was shown in interviews through such statements as the one given by HK2, who stated that employees are motivated by:" … being able to work relaxed in a bigger scale with more impact" and later continued by stating that "we really appreciate each other personally. So, that's really cheesy but I guess it's really the driving force [in collaboration]." Support for the importance of the member's own motivations was also found in JP2, who highlighted the importance of vision and goals by stating that he always asks other members: "so, why are you working here? What is your purpose in life?" When the founder was asked about the reason for the question, the founder stated that it was done to better understand if the company vision aligns with what the new member wants to do in life and to better understand if she could help align the work at the company with the employee's motivations. These types of founders also took actions to support and help grow the employees' motivation through actions such as bringing mentors to help both the company and its members refine the activities they are engaging in. Therefore, it could be summarized that in this case, the founder and the employees are actively working together to achieve the vision of the company. As a result of this alignment, it is expected that the employees, and the whole organization, will have a high level of performance since the goals of the founder and the employees have been aligned with the company vision. Therefore, this pattern can be summarized as the founder and the employees working together to achieve a unified vision.

In the second pattern, low founder vision clarity and high employee motivation to share knowledge. In this pattern, the employees are highly motivated to work at the startup but the ultimate goal of the company has not been clearly defined by the founder. This pattern is exemplified best by HK3, who stated the following about their progress: “We made a lot of mistakes … We didn’t validate the market … This time I know who the market is and I’m going to build a product for that market.” This statement shows that the startup was started by a founder who wanted to build something but was not sure what product he should build, how or to whom to target with the product. In regards to employees’ motivation to share, HK3 followed up by stating that the local job market for entry-level engineers is very limited and that:” …if you tell them that ‘Hey, there is a product development job,’ I think people would do it for free.” For the logic behind this statement, HK3 stated that the product development jobs were much more interesting than the regular entry-level jobs which HK3 stated were mostly very laborious and low-paying positions. Given the high-interest levels of the employees towards the job, i.e., intrinsic motivation, towards an exciting and challenging job, the employees are expected to want to contribute towards the daily activities. However, since the founder’s vision for the ultimate goal of the company is not clear, the employees are more motivated by working on an interesting topic than the specifics of the founder’s vision. While the vision for the company will evolve over time, the evolution process places considerable responsibility on the founder’s abilities to communicate the revised vision to the other members of the organization in order to keep the employees’ overall goals aligned with their activities. Therefore, this pattern could be summarized as members wanting to work on an interesting topic but the ultimate goal is unknown.

In the *third pattern*, high founder vision clarity x low employee motivation to share. This pattern was the present in only a few of the cases. The manifestation of this pattern can be best summarized by JP1, who stated that:" we're not a typical startup, where you get together every day and … be like 'ooh, here's our dream.'" This statement was given as a sarcastic example by the founder to contrast their organization against "stereotypical" startups. The founder, JP1, continued later by detailing strict control of what employees work on and how much is expected of them through mandatory worksheets that have to be filled out by the end of the day. These sheets contained information regarding what the employee achieved during that day. When asked about collaboration within the organization JP1 stated that:" Sometimes things are difficult. For example, I would want the person to do [a specific task], but he wouldn't want to do it that way, you know [so the person was terminated]". These statements exemplify founders attitude towards the employees as tools to be used in order to achieve specific goals. If the employee fails to carry out very specific tasks that the founder has set out, the old employee gets replaced with a new employee. This interchangeability between workers was also highlighted in the way the founders used stock options. One founder had not given out any stock options to the employees due to low contributions to the company. In contrast to this pattern, a typical startup will use stock options to compensate for the low pay and to decrease employee turnover. This final case can be summarized as the founder using tools, in this case, the employees, to work towards achieving a particular goal almost in a dictatorial way. As a result, this pattern can be summarized as the founder viewing the members as tools to be used to achieve specific outcomes.

4.3.2 Founder's Perception for the Need for Incentives X Collaboration Motivation of the Employees

The second cross-section contrasts the founder's perception for the need for incentives, i.e., if the founder thinks that other members need incentives in order to achieve the organization's goals, with employee's collaboration motivation type. For categorizing employees' motivation, an intrinsic-extrinsic scale was used based on the definitions given by Deci and Ryan (1985). The cross-section is shown in Table 4.

Table 4 - Need for Incentives X Collaboration Motivation

Founder's perception for the need for incentives			
No	Employees do the job they are hired to do	Employees motivated by company vision, want to achieve something	
Yes	(none)	Employees' low compensation supplemented by giving out stock	
	Extrinsic	Intrinsic	Employee collaboration motivation

Straight away it should be noted that out of the 9 interviewees out of the 10 cases studied gave statements supporting intrinsic motivation as the main motivator for collaboration and for sharing knowledge with other members of the organization. This result gives support for the notion that members of the organizations might have chosen to work in the specific companies due to other reasons in addition to monetary gains. This balance between the motivation types will be discussed in more depth later in this chapter.

In the *first pattern*, the founder perceives other members as not needing incentives for and employees are motivated by intrinsic motivation to collaborate with each other. In this pattern, the founder typically wants to work on an interesting topic with other similarly-minded individuals. This is exemplified by HK3, who stated that the reason he founded the company was to build things that the founder would like to use herself and that other members collaborate because if the ultimate goal of making something everybody in the company can use then "…both [members of the organization and customers] are better off and everybody is happier." Along with similar notes, JP2 noted that "collaboration leads to the success of the company" and that "it makes no sense … not to share, generally at least." These quotes highlight the intertwined nature between founders and employees working towards achieving a common goal. With the highly interesting topic of the company in mind, the organization's members would be motivated by intrinsic motivations to work towards achieving the goal. As the two example statements have shown, members of organizations in this pattern see collaboration not only seen as helping others and as but also as a way to pursue their individual goals.

In the *second pattern*, the founder perceives that employees need incentives and employees are intrinsically motivated. For example, JP5, the lawyer, stated that in his experience stock options were used to compensate for the low salaries paid by the companies. The practice of offering stock to compensate for the low salary was also exemplified by a statement made by JP2, who stated in regards to offering higher salaries to attract new employees that: “We have no cash, not enough cash, and also we believe, we strongly believe our company become big itself, so stock is the best way.” This statement highlights the dual function of stock options in a young startup: addition to compensating for low pay, founders can also highlight employees’ partial ownership of the company through stock ownership. Support for this duality of stock also came from statements made by HK1 who stated that: “we want them to feel that they are one of the owners so … they will be more motivated to do this because we know that the … tangible or monetary return will not come very soon.” Based on these, it can be stated that the founders seem to perceive that they need to provide some type of incentives in order to compensate for the low base salary. These incentives can include giving out stock and practices such as flexible work times. However, at the same time, the founders recognized that the use of stock could also trigger feelings of ownership in the members, which could result in higher levels of commitment to the company. The feeling of ownership, in turn, could result in an increase in motivation to work towards achieving the company goals. At the same time, as most founders indicated the importance of intrinsic motivation, using stock options can avoid some of the hazards that pure monetary compensation can induce. In other words, if pure monetary compensation was used, then employee commitment to the company might not be as high.

In the *third pattern*, the founder perceives that workers do not need incentives and the workers are extrinsically motivated. In this pattern, the founder perceives the employees as being motivated by base salaries enough to carry out their given tasks and that the base salary is enough to motivate the employees. Therefore, as the base pay is enough to motivate the employees, there would be no reason to provide other incentives. Additionally, the founders would give out any equity of the company to other non-founder employees only if they made a significant buy-in to the company through their work effort. JP1 summarized this as: "I haven't given out stock options yet, but to anyone who makes the big contributions I would consider [giving stock options to employees]." This attitude towards employees would also be seen in the hiring and firing practices of the company, which was later exemplified by JP1, who had previously replaced multiple members of the organization due to failure meet their expected contribution levels at the base salary level. Based on these, it can be stated that the founder has stringent performance requirements, but at the same time, views employees as replaceable which signals that the founder does not expect employees to commit to the company. The founder's attitude towards the employees' contribution towards the company goals might not result in the wanted outcome since the founder wants to enticing employees to go above the required in order to meet the requirements for becoming a candidate for receiving equity of the company in the future. However, the founder's attitude towards the employees and their replicability do not encourage employees to contribute more than the bare minimum towards the required goals. Overall, this pattern can be summarized as founders seeing employees as needing to do the exact job they are hired to do but at the same time not willing to commit to specific employees without significant buy-in from the employees.

4.4 Discussion on the Analyzed Cases

The analysis of the two cross-sections highlights two key factors in the early startup life: the importance of the clarity of the founder's vision for the company and the founder's understanding of how incentives and employee collaboration motivation. Both of these are particularly relevant for understanding factors influencing knowledge sharing between the members of the organization, and as a result, they also mean that the founder should be intimately knowledgeable about both of these topics.

In regards to the *first cross-section*, founder's vision clarity for the company, the result emphasizes that the founder should have clear goals for what the company should achieve since it acts as a positive influence on the company by motivating the organization's members. This result aligns with previous research findings (Jing et al., 2014; Santos et al., 2010), and implies that founders should spend time working on the company vision already before officially starting the company. The rationality of starting vision-related activities so early is because vision can be used to attract new resources, including new members and additional financial resource, to the organization (Baum et al,.1998).

Previous research has also been shown that improved sharing of the company’s vision with its members can positively impact the organization’s performance and help the company retain employees longer (Jing et al., 2014). However, having a clear vision from the start can be difficult for founders, given that young startups face a turbulent market with significant uncertainties (Giardino et al., 2014). Hence, creating a product or a service that meets the target market needs can be challenging. These factors are emphasized in methodologies such as Lean Startup (Ries, 2011), where the exact vision of the company evolves over time based on experiments that are used when the company is still looking for a suitable product to go to market with. Given that the vision plays a significant role in motivating the current employees of the startup (Zaech & Baldegger. 2017), it is also important to note that the impact of the vision depends on the founder’s capabilities to effectively share the vision with the other members of the organization. Therefore, the founder’s communication capabilities and how the well the message is targeted are critical for successful dissemination of the vision.

In regards to the vision sharing process, O’Connor (2002) details visionary stories as a way to detail where the company is going. She also indicated that founders need to customize the narrative of their company’s vision and history to suit the specific characteristics of the listener. Previous research also shows that these types of inspiring stories are an essential method of leadership in transformational leadership (Zaech & Baldegger, 2017). Transformational leadership style is based on the leader's, in this case, the founder's, ability to motivate the rest of the organizational members through the communication of a vision of the company that details where the organization is going and what type of operations it needs to undertake. This communication process is where the founder's understanding of the other member's motivations is crucial since the vision needs to be customized in such a way that it aligns with the listener's interests. It should be noted that without understanding what motivates the current members, customizing the narrative of the vision to suit the prevalent motivations inside the organization will be considerably challenging.

In regards to *the second cross-section,* the link between founder's perception for the need for incentives and employee collaboration motivation, the results point towards the importance of founders understanding what motivates other members of the organization. The derived result aligns with previous results derived by researchers such as Magee et al. (2011), and Stajkovic and Luthans (2001). The correct interpretation of others' motivation for collaboration is critical because if the used incentives are founded on a misinterpretation of the underlying motivations, the incentive system will not result in the wanted change in the behavioral pattern (Lindenberg, 2001; Stajkovic & Luthans, 2001). Understanding the underlying motivations is of particular importance in situations where activities, such as knowledge sharing, which are founded on intrinsic motivation. In these situations, misaligned incentives can crowd-out the individual's intrinsic motivation for the task (Lam & Lambermont-Ford, 2010; Gubler et al., 2016) which in turn will lead to the activity being entirely dependent on the presence of the incentives (see Chapter 3 for examples regarding misaligned incentives for knowledge sharing). As noted at the start of the case studies, most of the founders indicated that the primary motivation for sharing knowledge within their startup was founded on the intrinsic motivation of its members. This derived result highlights the importance of understanding the particular context of the organization when incentives are being created in order to avoid any unwanted results. Particularly, the founders need to understand why are the other members working in that particular startup and not at another startup.

Incentives can be used when trying to encourage more knowledge sharing, but they need to be appropriately configured in order to cause the wanted change in the pattern of behavior. While previous researchers have given some guidelines for creating incentives (e.g., Aguinish et al., 2013; Magee et al. 2011), most of them do not consider the organizational context or the underlying motivations of the targeted individuals. Laitinen and Senoo (2016), presented in Chapter 3, created a customization framework for analyzing incentives which can help incentive designers to analyze both short-term and long-term influences that a proposed incentive system might have on the members' motivations and the norms of the organization. When considering these factors, in addition to just the form of the incentive, the likelihood of the incentive creating the wanted behavioral change is higher.

These two perspectives are critical for startup founders to understand since they give insight into what activities can help them improve the motivation of the startup's members. To be more precise, the second perspective, underlying motivations, can help customize activities related to the first perspective, vision for the company, in such a way that they both become more effective. As a result of the improved vision communication, members of the organization can understand better how their activities relate to the overall activities and the goals of the organization, which, in turn, can help align interests of the members and the overall goals of the organization. Additionally, the members' increased understanding of how their tasks relate to the overall goals of the organization can also help in decreasing the burden of coordinating tasks (Jing et al, 2014). Hence, it is important for founders to have the needed communication competencies in order to be able to undertake the vision communication task early enough in the startup's lifecycle.

Finally, there is one additional pattern that exists in both of the 2x2 cross-sections that has not been discussed yet. Notably, both of the cross-sections have a single empty cell, low vision clarity x low motivation to share knowledge, and founder perceives a need for incentives x employee is extrinsically motivated. No evidence regarding this cell was found in any of the interviews. In other words, no founder described their organization having employees who are purely motivated by extrinsic factors in addition to the founder having no clear direction for the startup. It is, therefore, hypothesized that these two cells are empty since purely extrinsically motivated employees would not join young startups that does not have clear future goals due to the low salaries the startups pay and the low likelihood of a bigger payoff from the company in the near future. Instead, these types of employees would seek employment in established companies or more mature but high potential startups. In such organizations, these types of employees would receive the extrinsic motivators they seek.

4.4.1 Limitations and Future Research

The presented research has limitations that should be addressed. First, during the time of the interviews, all of the startups were still in very early stages of their lifecycles and as such evaluating the full potential of a particular startup is very challenging. The fact that the startups are still young could have an influence on the emphasis that the founders placed on intrinsic motivation. While the interviewed founders came from multiple countries and were in various stages of progression, it is unlikely that these results suffer from limited data sources. However, in the future, more long-term research activities should be carried in order to understand better how the employees' motivations and the founders' perceptions change over time. This evolution of motivations over time leads to the second limitation of the study: the research presented here is founded on qualitative data gathered at one point in time. While the researchers strived to ensure the highest standards in research, future research should also include other data sources, such as the use of surveys, to target young startups that can be used to track how the company evolves. Third, future research should also expand the scope from just founders to also include members of the startups, which would allow for more perspectives to emerge and would most likely result in fruitful research on how the employees' and the founders' views differ from each other.

Finally, it should also be noted that it is possible that national culture could have an influence on the founders' motivation since national culture has been shown to have an influence on how members behave in business organizations (Smith et al., 1996) and even how local startup clusters behave within the same country (Saxenian, 1996). Hence, having an assumption that founders in Japan and Hong Kong would have the same motivations could be unreasonable. While the researchers were aware of this possible issue, no indications of differences in founder motivations were discovered that could be assigned to have risen due to national culture. More extensive research in the future could, however, uncover some differences between the two locations.

The results presented in this chapter can be summarized as follows: clarity of vision for the startup plays an important role for motivating the members of young startups and that the way founders perceive the other members is critical for the correct configuration of incentives. These results contribute to creating a better foundation for knowledge management research in startups, a field that is still very nascent. Future research should focus particularly on understanding the influence that the early core members of the group have on the created behavioral standards and how these norms evolve over time when more new employees join the organization. As mentioned in the limitations of the presented results, future research should also focus on understanding how factors influencing the members' knowledge sharing motivation evolve in a particular organizational context. While there have been studies regarding these antecedents to knowledge sharing, there have never been any studies on knowledge sharing motivation in young startups. Finally, efforts should be made to create statistical methods and standardized data sources that are designed for the study of young startups, would allow for a better cross-country comparison and for research regarding how culture influences the development of startups.

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Chapter 5. Influence of Organizational Culture and Vision for the Company on Knowledge Sharing Motivation

In the previous chapter of this dissertation, understanding the motivation of others and how this understanding of motivation creates patterns that can be targeted with incentives systems was discussed. This discussion creates a foundation for understanding incentive usage in a young startup context. Given that innovation is reliant on creating new knowledge through the combination of information and knowledge from various sources (Nonaka, 1994; Grannovetter, 1974), startups need to be able to utilize all the resources available to them in order to survive and become successful. The ability to utilize all available knowledge is particularly crucial as startups face a turbulent business environment (Ouimet & Zarutskie, 2014) and the majority of the founded startups fail (Marmer et al., 2011).

One key component in this struggle for more innovation is increasing the knowledge shared between the organization's members (Wang & Wang, 2012). While Laitinen and Senoo (2017) started the task of exploring the knowledge sharing motivation of individuals working in young startups, their work should be expanded to include not only founders but members of the organizations. Additionally, as their work was an exploratory study on the factors influencing knowledge sharing motivation, confirmatory research should be carried out. Hence, Based on Laitinen and Senoo (2019), this chapter further expands on what influences knowledge sharing motivation and intention in startup organizations. In detail, the research discussed in this chapter aims to answer the following question: how do organizational culture and vision for the company influence knowledge sharing motivation and knowledge sharing intention?

This chapter is structured as follows: first, previous research on startups, knowledge sharing intention, motivation, and organizational culture are reviewed, and the existence of a gap in research is demonstrated. Next, hypotheses are developed to target open questions regarding the reviewed topics. Following that, research methodology and the sample used in this study is presented after which the analysis of the data is discussed in more detail. Finally, the results of the data analysis are discussed before conclusions, limitations to the research, and future research directions are presented.

5.1 Literature Review

5.1.1 Startups

Startups are an important source of innovation (Weiblen & Chesbrough, 2015; Spender et al., 2017) and in recent years the number of startups has grown considerably (Marmer et al., 2011). However, research on young startups has been quite limited. While there are numerous reasons for the lack of research, it can be argued that a lack of a standard definition of a startup is a contributing factor. Because of this, previous research has treated startups that have been listed on stock exchanges the same as young startups (e.g., Galloway et al., 2017; Debrulle et al., 2014). However, this range covers multiple different types of companies. Hence, for the purpose of this research, a startup will be defined the same as in chapter 2.3, where it was stated that:

> "A *startup is a young innovation-driven organization searching for a repeatable and profitable business model through creating innovative products and services targeting uncertain global markets."*

As this definition does not give specific limits for when a startup stops being a startup, an additional limitation was proposed based on funding was imposed. To be more prise, a limit was proposed to be set in series B funding round, a funding round that is traditionally used to scale operations after an initial product-market fit has been discovered. After this round, the startup should be referred to with another qualifier. This restriction is also used here in order to better target startups in their youth.

While previous studies on startups have focused on factors such as the management of the startups (Davilla et al., 2010; Hmieleski et al., 2012; Zaech & Valdegger, 2017) and use of the Lean Startup methodology (Bortolini et al., 2018; Contigiani & Levinthal, 2018), research on knowledge management in startups has received only limited attention from researchers (Centobelli et al., 2017). The use of knowledge management strategies in startups is particularly crucial as knowledge sharing has been shown to be linked to improved business performance in larger organizations (Wang & Noe, 2010). Of the existing research knowledge sharing research in startups, most studies have focused on external sharing instead of focus on internal sharing (Allen et al., 2016; Estrada et al., 2016), thus highlighting a gap in research.

Additionally, previous research on startups has pointed towards organizational culture and vision for the company as sources of motivation (Ensley & Pearce, 2001; Moser et al., 2017). At the same time, the low formality in the startup's processes (De Clercq et al., 2013) creates an environment where knowledge sharing practices can take multiple forms, meaning that supporting specific behavioral patterns of the organization's members can take on multiple forms depending on the individuals and the specific organizational context. However, before knowledge sharing programs can be implemented, the motivations of the members of the startup need to be understood better since knowledge sharing is a voluntary activity the members engage in (Černe et al., 2014).

5.1.2 Increasing Knowledge Sharing Intention

Cabrera and Cabrera (2002) define knowledge sharing as the use and sharing of insights and knowledge with other members of the organization. With knowledge sharing having an impact on the bottom line of the organization (Wang & Noe, 2010), it is essential for managers to support sharing activities and behavior of the organization's members. However, since knowledge sharing is a voluntary activity to which each individual voluntarily decides their level of participation and sharing (Černe et al., 2014), a level that can range from so-called “knowledge hiding” (Connelly et al., 2012) to full sharing, it is important that managers at any particular organization to understand what motivates members to share knowledge. The manager’s insight into the underlying motivations is particularly important from the point of view of understanding what can be done to support and increase members’ knowledge sharing intention.

There have been two more prominent review studies for factors influencing knowledge sharing intention. The first one is a literature review carried out by Wang and Noe (2010), and the second one is a meta-analysis of previous research results carried out by Witherspoon et al. (2013). Both of these reviews covered individual and organizational level factors including factors such as expected organizational rewards, subjective norms, and shared goals, all of which were found to be influential for increasing knowledge sharing intention by both of the reviews. However, factors related to the influence of organizational context were disregarded by both studies, as these factors are frequently disregarded in knowledge sharing research (Sergeeva & Andreeva, 2016). This lack of understanding regarding the influence of organizational context is unfortunate given that previous research has shown that understanding context is critical for knowledge and knowledge management (Nonaka & Konno, 1998; Choo & De Alverenga, 2000), knowledge sharing (Fernie et al., 2003; Lam & Lambermont-Ford, 2009) and on organizational behavior in general (Johns, 2006; Welter, 2011).

Hence, based on the previous results, managers who want to increase knowledge sharing should consider the effects of organizational context on the antecedents of sharing motivation that have been found to positively influence knowledge sharing intention. The importance of understanding context was also highlighted in management and psychological research by researchers such as Lindernberg (2001) and MaGee et al., (2011), both of whom concluded that a wrong conclusion regarding the influence of motivating factors will be made if the decisions are made without understanding the underlying factors of why individuals engage in specific activities.

As a result, the antecedents to motivation in a startup context will be studied closer. Through understanding these in addition to specific factors related to organizational context, the creation of programs targeting knowledge sharing motivation will become easier.

5.1.3 Vision and Organizational Culture

Vision for the company, or the goals to be achieved in the future (Ruvio et al., 2010), plays an important role in unifying the company behind a unified goal if properly communicated to all members of the organization. A unified vision clarifying the direction where the company should go also serves as a source of motivation for the members of the organization (Shinkle 2012; Kirkpatrick, 2017). However, previous research has discovered that there is significant variation between the types of visions that different types of companies have (Ruvio et al., 2010). As such, the proper communication of the right type of vision throughout the organization is vital, and that failure to do so has also been shown to lead to lower organizational performance (Baum et al., 1998). These results emphasize the role of managers in the dissemination process.

In the startup context, vision for the company has two important roles: first, vision helps to coordinate tasks within the organization. Results derived in the entrepreneurial and small and medium company context (Jing et al., 2014; Perkins et al., 2017) indicate that vision provides a framework that helps members of the organization to coordinate their daily activities towards a unified goal. In this process, the sharing of knowledge between members plays an important part in the vision communication process (Ensley & Pearce, 2001; de Mol et al., 2015). In the startup context, vision communication is particularly important as companies can pivot into other operational modes during the pursuit of the organizational vision (Blank &Dorf, 2012). Because of pivots, there can be significant changes in the vision, which in turn need to be recommunicated to its members.

The second vision for the company has its motivating influence on the members of the organization. The role of the founder is to create a vision for the organization, that is what the organization aims to achieve, convey it to the others, and to motivate other members to work towards achieving this specific goal. However, this communicating process can be challenging as at the very beginning of the company's life since startups begin their life with minimal resources that it starts to consume rapidly (Giardino et al., 2014). Because of the very limited resources of the company are used to survive, the startup cannot use a significant proportion of those resources to recruit new members and motivate its existing members through increased salaries. However, a clear and motivating vision for the company plays a significant role in combatting the resource depletion problem, as a strong vision can be used to in influencing outsiders to join the company (Moser et al., 2017) and to bring in other resources (Baum et al., 1998). In regards to previous research on the nature of vision in startups, O'Connor (2002) studied the stories founders use to convince others to join them and showed the importance of the so-called vision stories. These stories can be customized to suit the listener according to their characteristics and used to create a narrative of the company as a leader in its field. These types of stories also play a key role in framing the startup's role in creating a new market (Santos & Eisenhardt, 2009).

As the company strives to achieve its goals, the difference in the ways the goals are pursued will influence how the organization's culture will develop. This is because organizational culture sets out the basic rules for expected behavior, or as Schein (1985, p.9) put it: "the basic assumptions and beliefs that are shared by organizational members." In the startup context, organizational culture has two key functions: first, it sets out guidelines for expected behavior, and second, it is a source of motivation for the organization's members.

Founders and the early core members play an important role in the formation of organizational culture (Schein, 1985; Zaech & Baldegger, 2017). Through their actions, the expected norms of behavior for the organization are established. When new members join the company, they will adapt their behavior to the prevailing norms of the organization (Bauer et al., 2007). In the startup context, Baron and Hannan (2002) reported that in established startups, attempts to change the organizational culture was found to be very challenging and it had a negative impact on the firm performance. Along the same lines, Nelson (2014) reported based on a case study into the spinoff process of a startup from a university research project that the difference between a successful startup and a previously failed spinoff attempt was the failure to align people with the organizational culture. Since changing the norms of expected behavior is costly and challenging, it is important to pay attention to the development of organizational culture during the early stages of life at the startup.

Inside startups, management practices in startups frequently emphasize informal control over work (Baron & Hannan, 2002) due to the fact that many times roles have not been strictly defined, and because there are many things that the members need to engage in at once (Mathias & Williams, 2018). Previous research has shown that these types of organizational environments encourage members to take on more challenging problems (Amabile, 1997), in addition to boosting the motivation of its members (Lindenberg, 2001). As a result, individuals embedded in these types of organizational cultures will be more motivated to pursue the goals of the organization. For startups, this type of organizational culture is critical as the organization heavily relies on its innovation capability in order to either out-innovate the bigger, established competitors or to establish an entirely new market for their products and services.

The presented results from previous research point towards the importance of vision for the company and organization culture on both as sources of motivation and positive influence on knowledge sharing intention. However, no previous study has studied these factors together in the startup context. Therefore, hypotheses related to this research gap were developed.

5.2 Hypotheses Development

As was shown in the literature review, based on previous research, that vision for the company and organizational culture seem to influence knowledge sharing motivation. As a result, due to their influence on innovation, the research presented in this chapter focuses on knowledge sharing motivation and intention. With this goal in mind, hypotheses were created to target the shown research gap. The overall research framework is shown in Figure 6. The framework can be divided into three sections: two antecedents of knowledge sharing motivation selected based on the result discussed in the last section, three components of motivation based on the division of motivation founded on the work of Lindenberg (2001), and, finally, knowledge sharing intention.

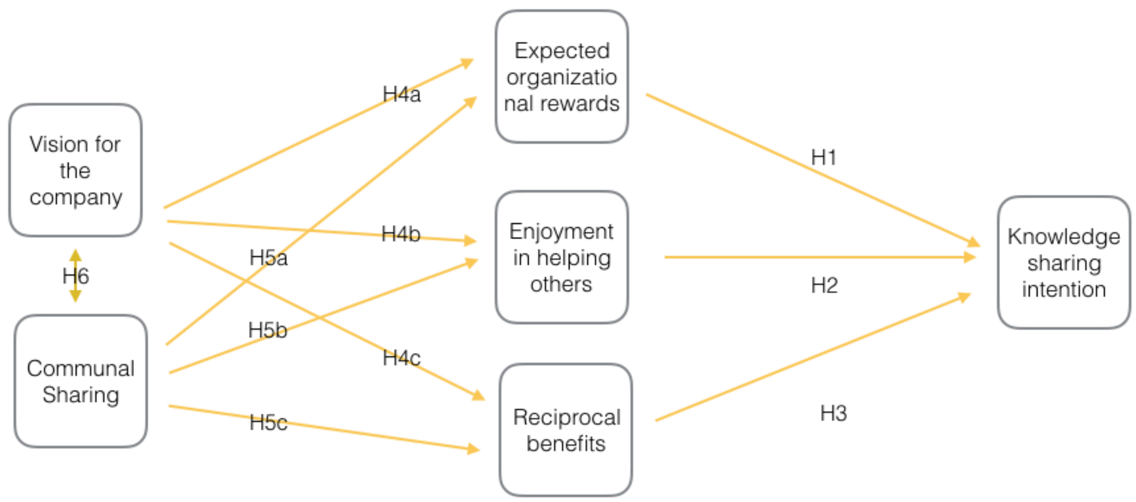

Figure 6 - Research framework for knowledge sharing intention

5.2.1 Knowledge Sharing Motivation

The first type of motivation discussed is *extrinsic motivation*. Lindenberg (2001) categorizes extrinsic motivation as one of the two major categories of motivation. Extrinsic motivation is said to be engaged when an activity is carried out for reasons other than the enjoyment of the task. Previous research has shown that incentives can increase individual’s engagement in the targeted activities if the incentive is properly corrected (Cerasoli et al., 2014; see discussion in Chapter 3 for an overview on incentive usage). However, earlier studies regarding incentives used to encourage knowledge sharing have resulted in mixed results indicating that there is a need for more research on the topic.

In regards to extrinsic motivations in the startup context, previous research indicates that financial aspects of the work are considered both in joining a startup (Moser et al., 2017) and when staying employed (Baron & Hannan, 2001). Additionally, in experimental settings, it has been found that extrinsic motivators positively influence member performance (Kagan et al., 2017). Hence, previous research points towards extrinsic motivators having a positive influence on an individual's engagement in the wanted behavior and, therefore, they should increase knowledge sharing intention. Based on these, it is hypothesized that:

H1: Expected organizational rewards, OR, is positively linked to knowledge sharing intention.

The second type of motivation discussed is related to i*ntrinsic motivation to share knowledge*. According to Lindenberg (2001), intrinsic motivation divides into two subcategories: improving one's feelings and acting appropriately. The former is engaged through factors such as free choice and feeling of competence while the latter one is engaged through acting according to the prevailing norms and rules of the reference group. An individual will engage longer on a specific activity the more the activity engages these two factors.

Enjoyment in helping others. It has been shown that the environment in startups is one of the reasons why new members join startups (Moser et al., 2017). With work being frequently divided based on an informal division of labor (Baron & Hannan, 2001), members are expected to help others during the time of need. According to the division of motivation detailed by Lindenberg (2001), helping others in such situations works as a source of motivation as it provides the helper with an opportunity to both the opportunity to feel competent and to improve their skills. In previous knowledge sharing research, the feeling of competence has been found to positively knowledge sharing intention (Lin, 2007), but it has not been studied in the startup context. Hence, based on the categorization of motivation and previous research results, it is hypothesized that:

H2: Enjoyment in helping others, HE, is positively linked to knowledge sharing intention.

Reciprocal benefits. The second intrinsic motivation type, acting according to the norms, is engaged when one can receive reciprocal benefits of collaboration for example by being able to receive help in the future (Fehr & Gintis, 2007). In a startup environment, where individuals frequently interact on a long-term timescale, organizational norms corresponding to reciprocity are expected to arise (Fehr et al., 2002), meaning that members can expect to receive help and other benefits in return from their efforts to help other members. This ability to expect reciprocity from others is particularly important given that all members of the company are expected to work towards a singular goal at a long-term time scale. Additional support for the long-term scale of cooperation is derived from the use of stock options to reward the organization's members, which further ties the individual's and the groups' ultimate goals together. All of these factors support the creation of norms where individuals are expected not only to help others but to be able to expect that they will be helped in return.

Previous research into reciprocal benefits (Hau et al., 2013; Serenko & Bontis, 2016) has highlighted its positive effects on knowledge sharing intention. While only minimal research into the influence of reciprocal benefits in the startup community has been carried out, the early results indicate that reciprocity has a positive influence on knowledge transfer (Allen et al., 2016), an activity that partially overlaps with knowledge sharing, but by definition takes place between companies instead of between individuals residing in the same organization. Based on the categorization of motivation and the previously derived results regarding reciprocal benefits, it is hypothesized that:

H3: Reciprocal benefits, RB, is positively linked to knowledge sharing intention.

5.2.2 Antecedents for Knowledge Sharing Motivation

Vision for the company. Vision for the company has various of effects on the members of the organization, which include influences such as attracting new employees (Baum et al., 1998), improved coordination inside the organization (Oe & Mitsuhashi, 2013) and improved organizational performance (Ensley & Pearce, 2001). In the startup context, Zaech and Baldegger (2017, p.158) indicated that many startups' leaders lead by communicating an "inspiring vision of the future" to the other members of the organization. Visionary communication used by founders (O'Connor, 2002) is particularly important in startups due to the organization's lack of resources (Aulet & Murray, 2013) and the challenging environment it faces (Ouimet & Zarutskie, 2014). As a result, a significant portion of founded startups fail (Marmer et al., 2011). An inspiring vision for the company has been shown to be one of the reasons why individuals work for startups (Baron & Hannan, 2002), and it can help employees take on more challenging tasks. Once the singular goal of the company has been captured as a vision for the company, members can focus their energy on the pursuit of the vision. In the pursuit of the vision, members will have multiple tasks to take care of (Mathias & Williams, 2018) during which the members will have numerous opportunities to interact with each other leading to the rise of norms of reciprocity (Ferh et al. 2002). It has also been shown that the opportunities to receive equity motivate individuals to join startups (Moser et al., 2017) and that a convincing and realizable vision can help motivate individuals to stay at the company longer if it is expected that received equity would become more valuable. The increase in the importance of stock increases as the likelihood of an "exit," i.e., a change to cash in stock options by selling to outside parties, becomes more likely in the near future. Based on these, it can be stated that vision for the company influences the motivation of employees in a positive manner. In detail, it is hypothesized that vision for the company has the following influence on knowledge sharing intention:

H4a: Vision for the company, Vis, positively influences expected organizational rewards

H4b: Vision for the company, Vis, positively influence enjoyment in helping others

H4c: Vision for the company, Vis, positively influence reciprocal benefits.

Communal sharing. A startup consists of individuals aiming to meet a specific market need set by the founders (Aulet & Murray, 2013). The stereotypical organizational environment of a startup is of low formalization (De Clercq et al., 2013) where things just need to be taken care of (Mathias & Williams, 2018). The coordination of activities in such an environment is based on an informal division of labor that gives the startup's members more autonomy to decide their specific tasks and how the task is completed, which allows the employees to take on more responsibilities based on their own decision (Baron & Hannan, 2002). Additionally, as the group consists of frequently interacting individuals over a longer period of time, it is expected that norms of reciprocity towards other members of the group will arise (Ferh et al., 2002). This type of organizational culture in startups is one of the reasons why individuals join startups (Moser et al., 2017).

It is proposed that an organizational culture resembling the one described above is captured by Fiske's (1996, p.691) description of a so-called Communal Sharing relationships between the members of the startup. In these types of relations, individuals share something meaningful, for example, blood or nationality, thus making altruism towards the other members the expected behavior. In these types of relationships, members are expected to help others and to seek to contribute towards the public good of the group based on their own capabilities. The members are also expected to contribute to the completion of the tasks the group undertakes without particularly keeping track of how much each individual has contributed. In return, the members can also expect that they will be helped in their own tasks in the future if they should need it.

The two descriptions, Communal Sharing relationship and startup culture, have significant overlap. That is, both describe individuals belonging to a group that shares something bigger in common while frequently interacting on a long-time scale. In a startup, the shared meaning is the vision of the company that all members believe in. Both groups work towards a bigger goal in such a way that all members are expected to contribute according to their capabilities until the task is finished without keeping explicit track of who contributed what without an immediate expectation of a reward. In startups, sometimes it can take years before the benefits of the work can be harvested since benefits of stock options can only be cashed once the company grows to a certain size. Both of these groups also base their coordination of activities on informal division of work. In the startup, this means that individuals will carry out their tasks without explicit division of work while working to achieve the goals of the organization. A comparison between startups, mature companies and the culture described by communal sharing is shown in Table 5.

Table 5 - Comparing mature companies, startups, and communal sharing

Company type	**Mature company**	**Startup**	**Communal sharing (Fiske, 1992)**
Role of vision	Company has multiple goals (Klemm et al., 1991)	One common goal (Moser et al., 2017)	Sense of unity (e.g. "blood," kinship) that helps direct activities towards a unified goal
Formalization	High formalization (Vaccaro et al., 2012)	low formalization (De Clercq et al., 2013)	No distinction between members, low formalization
Motivation to share	Both intrinsic and extrinsic motivation (Voelpel & Han, 2006), keeping track of contributions.	Contribute without keeping track of contributions and work until task is done (Mathias & Williams, 2018)	Everyone pitches in and does what she can without keeping track of inputs. Tasks are treated as collective responsibility

From the description and from the comparison presented in the Table 5, it ca be seen that the description of a startup culture aligns with the description of a Communal Sharing culture. Based on presented literature review and the overlap in the descriptions, the following hypotheses were created:

H5a: Communal Sharing, CS, is not significantly linked to expected rewards

H5b: Communal Sharing, CS, is positively linked to enjoyment in helping others

H5c: Communal Sharing, CS, is positively linked to reciprocal benefits

Finally, it is hypothesized that vision for the company and Communal Sharing are linked together. Previous findings point towards organizational culture being linked to the vision of the organization (Ruvio et al., 2010; Moser et al., 2017). As founders set the vision for the company, they also are the examples of expected behavior in the organization (Nelson, 2014) and are the foundation of the organization's organizational culture (Schein, 1995). As both the vision for the company and its organizational culture are founded on the same group of people, it is expected that the two share a link. Based on this logic, it is hypothesized that:

H6: A covariance link exists between the vision for the company and communal sharing.

5.3 Measures and Data Collection

5.3.1 Measures

To test the created hypotheses, statistical instruments used in previously published research were adopted to suit the startup context. For expected organizational rewards, OR, enjoyment in helping others, HE, and reciprocal benefits, RB, each consisting of four items, were adopted from measures used by Lin (2007), who studied large companies in Taiwan. Communal Sharing, CS, consisting of five items, was adapted from Relational Models Questionnaire created by Haslam and Fiske (1999). Vision for the company, Vis, consisting of three items, was adapted from Mustakallio (2002), who studied the influence of vision for the company in family firms. Finally, knowledge sharing intention, KSI, was also adapted from Lin (2007).

An online survey was created based on the adapted measures. The clarity of the items was tested with four academics and four founders. Based on their feedback, minor adjustments were made to the wording of the items. After this, the online survey form was distributed to the participants.

5.3.2 Data Collection

Data used in this study was collected by sending the survey to 538 individual members working in young startups. This group of individuals was selected as targets based on their startup meeting the definition of a startup presented earlier and based on the individual's activeness in their local startup community. The individuals were invited to take part in the survey through a personalized email that was sent to them by the researchers. From the 538 individuals that were contacted, 111 elected to take part in the research and filled in the online survey form. As a result, the response rate is 20.6%. The characteristics of the respondents are listed in Table 6. 69% of the respondents were male, who, on average, are in their early 30s and have approximately three years of experience in working at startups. The respondents' region varied considerably with Japan, Finland, and the USA being the three most popular answers. The average company has less than 10 full-time members. While some respondents indicated that they work in organizations with more than 500 members, these organizations are organizations where a majority of the affiliated people are temporary or freelance workers instead of full-time workers. An example of these types of organizations include food delivery startups. Hence, the correct information for the startup size should be lower. However, since there is no way to gather the correct number at this point of time, in future research should be more careful about the wording regarding the size of the startup.

Table 6 - Survey respondents (n=111)

Age		**Gender**	
20-25	20	Female	33
26-30	15	Male	77
31-35	24	Prefer not to disclose	1
36-40	17		
over 40	35		
Education level			
High School / Vocational school	3	**Tenure in the startup**	
Undergraduate	48	1year or less	3
Graduate	50	1 to 2 years	21
Post-graduate	10	2 to 3 years	27
		3 to 4 years	14
Startup size		4 to 5 years	15
Less than 10	52	5 to 6 years	9
10-20	10	over 6 years	22
21-30	7		
30-50	4		
51-500	9		
Over 500	29		

5.4 Analysis and Results

A Confirmatory Factor Analysis, CFA, was carried out with the collected data using Structural Equation Modeling, SEM. This methodology was chosen for its capability to model causal relationships between theoretical constructs of interest (Shah & Goldstein, 2006). Additionally, SEM has been widely used in previous knowledge management research. The data analysis was carried out using the lavaan package (version 0.5-23.1007; Rosseeel, 2012) in the 3.4.3 version of the R Studio statistical software (Team R, 2015).

As the first step in the analysis, the data set was analyzed for outliers using Mahalanobis distances (Cousinea & Chartier, 2010), which resulted in the exclusion of four outlier answers from further analysis. As the data is based on a single source of data, namely the survey, questions regarding common method variance can be raised. To check for the influence of common method variance, Harman's One-Variable Test was used following the guidelines stated in Podsakoff et al., (2012). This test checks if the common variance amongst all the variables is due to a single common factor. The results indicate that there are three eigenvectors with values over one with the first factor accounting for 30% of the total variance. Based on Podsakoff et al., (2012), it can be stated that common method variance has likely not caused the studied relationships. After this, the data was analyzed more closely.

5.4.1 Measurement Model

Convergent validity. CFA was used to confirm the validity and reliability of the constructs the measurement model is based on. Following the suggestions of Hair et al., (1998), item loading below 0.6 were dropped from the analysis. Additionally, the composite reliability, CR, was analyzed, and the results ranged between 0.72 and 0.95. These are higher than the cutoff for latent constructs suggested by Nunnally and Bearstein's (1994). Table 7 shows the factor loadings and composite reliability.

Discriminant validity. Discriminant validity was also analyzed, and results of the analysis are shown in Table 8 in which the average variance extracted by each of the constructs is shown on the diagonal as bolded figures, and other entries show squared correlations. According to Fornell and Lacker (1981), adequate validity of the discriminants is demonstrated when the average variance extracted is larger than the related squared correlations. Based on the discriminant validity analysis, it can be stated that adequate validity has been reached.

Table 7 - Factor loadings and composite reliabilities

Construct	Measure	Factor Loading	Composite Reliability
Vision for The Company (VIS)	VIS1	0.93	0.84
	VIS2	0.86	
	VIS3	0.88	
Communal Sharing (CS)	CS3	0.74	0.84
	CS4	0.92	
	CS5	0.78	
Expected Organizational Rewards (OR)	OR1	0.88	0.72
	OR2	0.91	
	OR3	0.73	
	OR4	0.67	
Enjoyment in Helping Others (HE)	HE1	0.64	0.95
	HE2	0.81	
	HE3	0.90	
	HE4	0.92	
Reciprocal Benefits (RB)	RB1	0.76	0.85
	RB2	0.74	
	RB4	0.85	
Knowledge Sharing Intention (KSINT)	KSINT1	0.77	0.85
	KSINT2	0.97	
	KSINT3	0.91	
	KSINT4	0.62	

Table 8 - Means, standard deviations, average variance extracted and squared correlations

	MEAN	SD	VIS	CS	OR	HE	RB	KSINT
VIS	5.05	1.53	**0.66**					
CS	4.18	1.40	0.24	**0.54**				
OR	3.73	1.92	0.19	0.06	**0.79**			
HE	6.29	0.93	0.15	0.09	0.04	**0.66**		
RB	5.59	1.37	0.34	0.20	0.15	0.30	**0.63**	
KSINT	7.56	1.61	0.24	0.14	0.07	0.45	0.49	**0.72**

5.4.2 Structural Model

The structural fit of the proposed model was also assessed. First, Normed χ^2 (=1.78, χ^2=315.82, df=177) was analyzed and shown to be below the cutoff suggested by Bagozzi and Yi (1988). Next, various fit indexes, including Comparative Fit Index, CFI=0.92, and Tucker-Lewis Index, TLI=0.90, were used and found to be within the acceptable range. Finally, the Root Mean Square Error of Approximation, RMSEA=0.086 (90% CI: 0.07-0.101) and Standardized Root Mean Square, SRMR=0.10, were also found to be within the acceptable range (Browne & Cudeck, 1993). As a result of all of these measures, it can be stated that the proposed measurement model shows an acceptable level of fit.

In the next step, the proposed structural model was analyzed in more detail. Figure 7 shows the analyzed structural model. In regards to the antecedents of knowledge sharing motivation, vision for the company was found to influence all three categories of motivation (H4a, OR: path coefficient=0.45, t-value=3.6, $p<0.001$; H4b, HE: path coefficient=0.27, t-value=2.18, p=0.03; H4c, RB: path coefficient=0.55, t-value=4.7, p<0.001).

Communal Sharing was found to influence reciprocal benefits (H5c, RB: path coefficient=0.23, t-value=1.97, p=0.05) However, Communal Sharing was found not to have any influence on expected organizational rewards (H5a, OR: path coefficient=0.06, t-value=0.50, p=0.62) and enjoyment in helping others (H5b, HE: path coefficient=0.24, t-value=1.89, p=0.06).

Additionally, a significant covariance relationship was discovered between vision for the company and communal sharing (H6: path coefficient=0.57, t-value=4.30, p<0.001).

In regards to knowledge sharing intention, both types of intrinsic motivation, that is enjoyment in helping others (H2: path coefficient=0.37, t-value=4.0, p<0.001) and reciprocal benefits (H3: path coefficient=0.73 , t-value=5.10, p<0.001), were found to be significantly linked with knowledge sharing intention. Unexpectedly, expected organizational rewards (H1: path coefficient=-0.05, t-value=-0.63, p=0.52) was found not to be significantly linked with knowledge sharing intention.

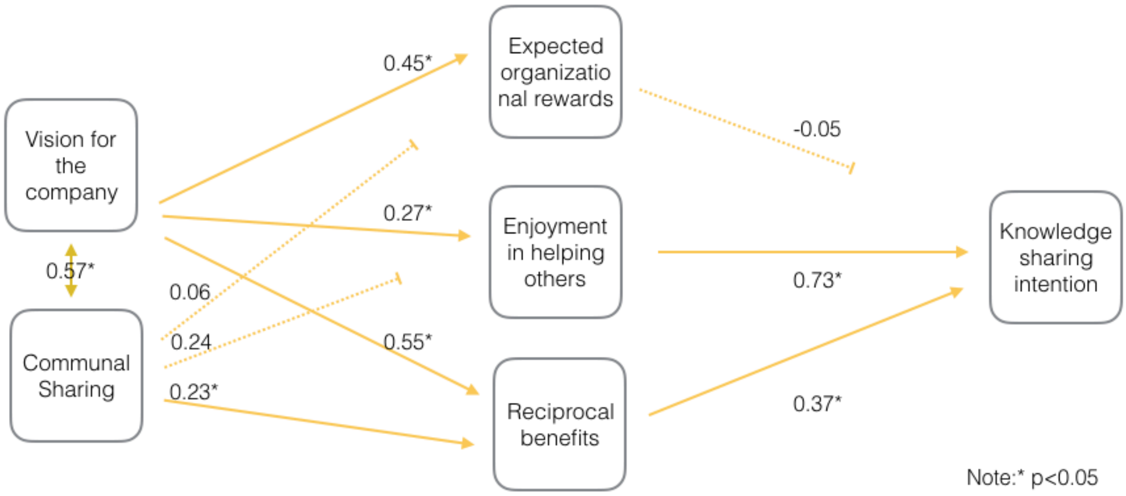

Figure 7 - Analyzed structural model

5.5 Discussion and Conclusions

5.5.1 Discussion

Antecedents to knowledge sharing motivation. In regards to the two antecedents to knowledge sharing motivation, vision for the company and Communal Sharing, both were found to influence parts of motivation.

Vision for the company was found to influence all three types. Vision's role as a motivator also has been discovered in previous research (Kirkpatrick, 2017; Shikle, 2012), and the results derived in this research align with those. Additional support to the influence of vision can be derived from a voluntary open question included in the questionnaire to which approximately ¼ of respondents directly mentioned company vision as a source of motivation to stay being employed that particular organization.

The results in regards to vision for the company as a source of motivation, therefore, imply that founders need to pay attention to how the vision gets communicated and to whom. This is especially important during times when the company goes through a pivot or the vision has changed due to other reasons. Through a clearly refined and communicated vision, the company can help to recruit more talent to the organization (Moser et al., 2017), and to motivate all of the parties involved in the organization (Baron & Hannan, 2002), in addition to being able to brand itself as an industry leader (Santos & Eisenhardt, 2009). One way to also improve vision communication is by customizing the message to suit the audience better, as was reported by O'Connor (2002). Through exposure to various audiences and by sharing stories with other founders, employees, and financers, the founder will gain a more in-depth insight into how to better customize the company's vision story to better suit the listening audience.

Communal Sharing was found only to influence reciprocal benefits but not expected organizational rewards and enjoyment in helping others. The derived results align with what Fiske (1999) theorized in regards to the cultural norms in communal sharing relationships, and with what Boer et al., (2011) predicted in regards to knowledge sharing practices. Unexpectedly, no significant influence was found regarding enjoyment in helping others, which implies that the norms regarding the duty to helping others is more important than the enjoyment derived from the helping activity. Overall, two out of the three created hypotheses were supported, which points towards startup culture aligning with Communal Sharing, which is something that previous research has not uncovered.

This result emphasizes the importance of the role that cultural norms play as a source of motivation, and places emphasis on practices to support a culture of sharing. As noted, a significant influence on enjoyment in helping others was predicted, but this hypothesis was not supported. One possible explanation for this result is that, in the context of young startups, knowledge sharing is founded on following norms, i.e., Lindenberg's (2001) second intrinsic motivation category, and not based on the enjoyment individuals derive from helping. This rationality would align with the predictions of reciprocal norms arising in frequently interacting organizations (Ferh et al., 2002) where things just need to be taken care of due to lack of resources (Mathias & Williams, 2018). In such an environment, the choice to help others would be based on being asked to ask to help others move forward with their work instead of looking to help others. Based on this interpretation, any attempts to increase knowledge sharing motivation need to be founded on modifying the cultural helping norms of the organization. This interpretation aligns with results from Laitinen and Senoo (2016), who noted the importance of intrinsic motivation in knowledge sharing and incentive customization. It also aligns with Wasko and Faraj (2000), who stated that sharing knowledge is just "what one does."

In regards to the antecedents of knowledge sharing motivation, the results for both Communal Sharing and vision for the company place importance on the daily communication and behavioral practices of the founding members and the core team since they have a significant influence on the organizational norms. They also set the standards on how the vision for the company is disseminated to the other members of the organization. Both of these factors need to be supported through active measures already from the foundation of the startup. While engaging in said activities might seem troublesome for some founders, the activities can help create an additional boost to the members' knowledge sharing motivation, which, in turn, can help the organization move forward towards its goals.

Knowledge sharing motivation and intention. Hypotheses related to knowledge sharing motivation were founded on previous research and the classification of motivation suggested by Lindenberg (2001). The results can be summarized based on the two types of motivation: intrinsic motivation influences knowledge sharing intention while extrinsic motivation does not.

In regards to *intrinsic motivation* to share knowledge, as a member of the organization engages in knowledge sharing, she will also receive information regarding her own performance level in comparison to the performance level of others and regarding her level of competence. This received feedback information would, according to Lindenberg's theory, result in an increased motivation to engage in knowledge sharing. Based on the analysis, a positive link was found between *enjoyment in helping others* and knowledge sharing intention, which supports the presented theory. The derived result also aligns with previously derived results in knowledge sharing research carried out in large companies (Lin, 2007). The sharing activity also increases the *reciprocal benefits* the employee can expect to receive in the future. That is, the sharer can expect others to help her if she will request help from them. As predicted by Lindenberg's categorization, the analyzed data points towards a positive link between reciprocal benefits and knowledge sharing intention. Previous research (Alshamsi & Ajmal, 2018; Hau et al., 2013) has also derived results pointing towards reciprocal benefits being a critical motivating factor for knowledge sharing. As a result of the analysis, it can be stated that programs aimed at increasing knowledge sharing in an organization should focus on increasing the employees' intrinsic motivation to share.

In contrast to previous research, expected organizational rewards were found not to be significantly linked to knowledge sharing intention. This result is in contrast to previous findings in the startup context (Kagan et al., 2017) and to earlier findings within knowledge sharing research (Witherspoon et al., 2013). However, the results are logical when considering the theory that was used to describe organizational norms (Fiske, 1999). To be more specific, in Communal Sharing relationships, expected rewards would not play a factor in how much individuals contribute as, based on the governing norms, individuals are expected to contribute towards the public good without any reward for their contributions. Therefore, expected rewards for sharing are expected not to be effective in increasing knowledge sharing intention. In other types of relationships where relational norms allow for expecting rewards, the influence of rewards can most likely be found. An example of these types of relationships can be seen in results derived by researchers such as Lin (2007), who studied individuals in higher positions in large organizations. In such organizations, the organizational norms are more likely to be founded on the trading of contributions or an authority figure dictating expected contributions. However, in startups where individuals frequently interact with the same people in a low formalization environment (De Clercq et al., 2013), collaborating only to receive a reward would not suit the norms of the organization.

Based on the notion that knowledge sharing cannot be forced (Černe et al., 2010), the derived results regarding knowledge sharing motivation point towards the importance of intrinsic motivation as the foundation of knowledge sharing intention in startups. Notably, as intrinsic motivation cannot be directly targeted with incentives such as bonus pay, the results emphasize the importance of daily activities and organizational culture as a source of motivation. If these activities are designed correctly, the results imply that a possible positive feedback loop could be created, which in turn could help the organization increase knowledge sharing levels.

Generally, in contrast to previously derived knowledge sharing motivation models (e.g. Lin, 2007; Lam & Lambermont-Ford, 2010), the derived model is a contextualized model of knowledge sharing motivation in a specific context. As a result, the contextualized model can help both practitioners and researchers get an insight into what factors influence motivation in the studied context. Additionally, a difference from previous studies on knowledge sharing motivation (e.g. Huang et al., 2011; Wang & Hou, 2015) which have selected a few key factors to describe motivation to knowledge sharing motivation, the presented study uses Lindenberg's (2001) description as the underlying theory regarding what factors influence motivation to engage in a specific activity. The founding of the model on a more fundamental-level model can also help both practitioners and researchers to gain a deeper insight into what factors need to be considered when trying to understand what factors influence should be considered when trying to encourage a specific behavior.

5.5.2 Conclusions

The derived results give support to the notion that knowledge sharing is an activity that is founded on individuals voluntarily sharing as much or as little as they want. The results highlight the importance of having a culture of sharing and the dissemination of vision for the company to all members of the organization. Since these two can only be influenced through daily activities, the results indicate that young startups should pay attention to these factors already from the foundation.

Additionally, in the context of young startups, the results indicate that expected organizational rewards have no influence on increasing knowledge sharing intention. This result implies that, if incentives happen to be used, the incentive system should not be configured in a way that the incentive system targets purely extrinsic motivational factors. Instead, any created incentive system needs to be configured in such a way that they indirectly target the intrinsic motivations of the members, which is challenging. For this goal, the incentive creation process needs to consider the context of the organization, an often-disregarded factor in knowledge sharing research (Sergeeva & Andreeva, 2016). Incentive frameworks, such as the one proposed by Laitinen and Senoo (2016), can help in designing incentives systems in such a way that they fit the organizational culture and its behavioral norms.

In regards to practical implications of the research to the startup environment, the derived results mean that founders have to pay attention to the development of organizational culture and to how they communicate the vision for the company to the other members since both of these are powerful means to increase members' intrinsic motivation to share knowledge. There are a couple of practical ways to engage in these activities: first, by being mindful daily of the activities in regards to what type of behavioral patterns are being promoted by the behavior of the founders' and the early core team. Second, active communication of the vision of the company to its members, particularly during times when medium and long-term strategies have needed to be adjusted. The result of engaging in both of these activities should help create a foundation for organizational norms that support collaboration and enable individual members to better understand how their contributions help the organization achieve its ultimate goal.

5.5.3 Limitations and Future Research

The results presented in this chapter have two major limitations. First, the goal of the study was to better understand what motivates knowledge sharing inside startups. With this goal in mind, previously used instruments from knowledge sharing research were chosen to be used in the study. While the researchers undertook efforts to find suitable instruments to be used but, alas, none were found meaning that none of the used instruments were developed for the startup context. Hence, future development of statistical instruments for the study of startups is required, as the startup context differs significantly from traditional SME entrepreneurship and large company contexts.

Second, the researched presented here is founded on a dataset collected by Laitinen and Senoo (2019) through an online survey that was distributed to members of startups. This collection method, however, highlights the fact that there are no widely available sources for information on what happens inside young startups since private companies have minimal disclosure requirements. Hence, future research efforts should be target towards creating a stable source of information regarding the internal operations of young startups.

In regards to future research, fortuitous research results can be derived from long-term studies into how knowledge sharing develops over time once more members join the studied startup. This type of longitudinal studies would allow for a more in-depth look into how the organizational norms start to develop over time in addition to better understanding of how the different relational models align with the company's evolution. It is likely that as the startup grows, the prevailing relational model no longer is Communal Sharing but instead another type. Understanding the relationships change as the company grows can give managers and academics an insight into how incentives should configured and what organizational practices should be promoted. Furthermore, longitudinal studies can also help to give insight into the development of new statistical instruments as there would be a deeper understanding of the peculiarities of the startup context. Possible future research directions are also highlighted by the main result of this research: knowledge sharing intention in startups was found to be purely founded on intrinsic motivation. This result is in contrast to some results derived in previous research, which highlights the importance of understanding the organizational context as a possible way to create a more accurate theory on when and how incentives should be used.

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Chapter 6. Combining the Two Frameworks

6.1 Combining the Two Streams

In the first part of the dissertation, the details relating to the customization of incentives were discussed based on existing research, and as a result, a new framework for customizing incentives was proposed (Laitinen & Senoo 2015, 2016). The framework was then used to analyze previously published incentive systems to showcase the benefits it brings into the analysis of incentive systems. In the second part of the dissertation, the factors influencing motivation to share knowledge was discussed (Laitinen & Senoo, 2017). This was first done through case studies carried out in Hong Kong and in Japan, and it was followed up by a larger survey which was used to better understand the factors influencing knowledge sharing motivation and how the factors connect. As a result, a model of knowledge sharing motivation was derived (Laitinen & Senoo, 2019). In this chapter, these two research streams are combined into one stream, which then used to customize incentives for a theoretical example case.

The incentive customization framework, presented in Chapter 3, consist of three interconnected parts:

- Short-term behavior: information about the incentive creator, framing of the incentive, self-determination, and the prevailing relational model used in a specific context.
- Long-term behavior: endogenous preferences and prevailing organizational norms.

- Incentive system: performance measure, wanted level of performance, and the used incentive.

The short-term behavior is influenced by the prevailing long-term influences, that is the norms of the organization, and the incentive system. At the same time, the long-term influences are influenced by the short-term behavior of the individuals, and they dictate what kind of incentives are suitable for the given context. Finally, the incentive system has to be customized in such a way that it aligns with the restrictions set by both the short-term influences and the long-term influences. Hence, all three parts need to be considered when incentive systems are created.

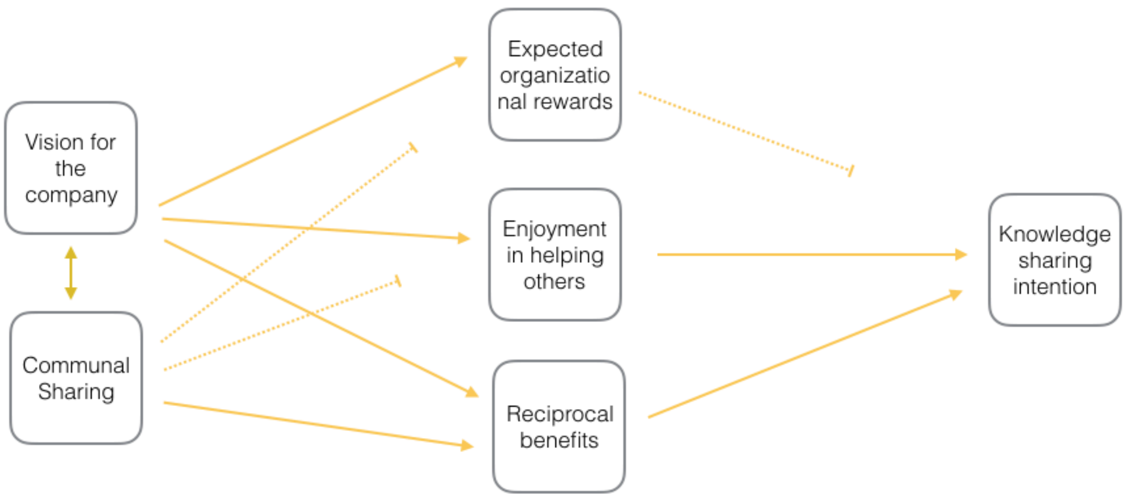

Figure 8 - Model of knowledge sharing intention (Laitinen & Senoo, 2019)

In regards to the knowledge sharing motivation model, Figure 8, the use of the incentive analysis framework is restricted by the factors that influence motivation to share knowledge, in other words, the factors on the left-hand side of Figure 8. These factors influencing knowledge sharing motivation should be considered as the starting point for the use of the incentive customization framework. This means that before creating any types of incentives, the analyst or the manager, should spend time with the actual incentive targets to understand what are the underlying motivations of the targeted individuals to carry out the targeted activity. Insight into the underlying motivations is critically important from a theoretical point of view, particularly if the targeted activity has already been carried out in the organization, as special attention needs to be paid towards the possible crowding-out of intrinsic motivation due to the introduction of new incentives (Frey & Jegen, 2001).

Through the use of the incentive customization framework, the incentive designer can gain a deeper understanding of the motivational factors for the targeted task, which will allow the designer to carefully analyze the implications of the proposed incentive to the development of the organization on a more granular level.

For the example case of a targeted activity presented covered in this chapter, the model for knowledge sharing intention consist of the following:

- Vision for the company
- Communal Sharing, that is a specific model used in relationships detailed by the Relational Model Theory (Fiske, 1992)
- Knowledge sharing motivation which is based on the three types of motivations described by Lindenberg (2001).

The relationships between the three parts are assumed to be the same as were presented in the results section of the last chapter.

Since the knowledge sharing motivation model was created based on a survey of young startup companies, example showcasing the use of the incentive customization in this context will be presented. Hopefully, this example can help the readers to gain a deeper understanding of how the incentive customization framework is applied to a specific context. The particularities of the context influencing the knowledge sharing intention model are reflected in the factors that influence knowledge sharing motivation. In this model, they are the relational models component representing the dominating relational model used by the organization's members and vision for the company which plays a significant role for motivating individuals to both join and stay at the company. In other contexts, these two parts of the model should be customized based on what has been discovered to be the antecedents to motivation in that particular context.

6.2 Example: Incentives for Knowledge Sharing in a Startups

For the purposes of the example case, two assumptions are made. First, it is assumed that the target startup culture is similar to the results of the analysis of the knowledge sharing motivation model. To be more precise, the prevailing relational model between individuals is based on Communal Sharing, which in turn establishes some ground rules regarding norms of behavior. Second, it is assumed that the target startup is in the early stages of its life-cycle indicating that vision for the company plays a significant impact in why individuals have joined and are still employed at the company. Both of these assumptions influence how the long-term behavior and goals of the members of the organization. These two assumptions are made on the basis of the underlying research presented in the previous chapters of this dissertation and they will help to showcase how the incentive customization framework can be used to customize incentives to fit a specific context. In a more generic case, these two factors, relation type and organizational goals, will be needed to be researched through methods such as field interviews with the members of the organization or through the use of surveys.

6.2.1 Preparing for the Customization Process

The first step in the process of designing incentives is to better understand the targeted individual's motivation regarding the wanted action, in this case, knowledge sharing. This information can be gathered through various means whose use depends on the role of the incentive designer. If the incentive designer is an organization insider, that is they work for the same company, the designer should be able to rely on their own understanding of the organization and understanding of the underlying motivations in combination with interviews with key individuals targeted by the incentive. If the designer is not an insider, then more extensive interviews need to be carried with targeted workers and managers in order to better understand the relationships of the interacting individuals targeted by the incentives and their underlying motivations towards the targeted activity. The goal of the interviews is to understand how motivated are the members of the organization to perform the wanted activity, what type of relationship they have with other, and how would the introduction of an incentive instrument tied to the activity influence the workers' attitudes and behavior towards the wanted activity.

Particular care should be taken in order to understand the underlying motivation types. Generally, the different categories of motivation are enjoyment-based, obligation-based and, extrinsic motivations (Lindenberg, 2001). In this example case, based on previous research covered in the last chapter, the results of the interview would indicate that knowledge sharing intention is influenced by reciprocal benefits members derive from sharing, i.e., obligation-based motivation, and enjoyment members derive from helping others, i.e., enjoyment-based motivation. Additionally, the interviews would also show that the expected organizational rewards derived from the sharing of knowledge, i.e., extrinsic motivation do not affect knowledge sharing intention. These types of results would indicate that the targeted activity is driven by the intrinsic motivation of the individual members. Therefore, as a key insight, the designer now knows what types of motivations drive engagement in the targeted activity. This insight needs to be combined with information derived regarding the relevant relational and organizational norms, which will enable the designer to narrow down the set of suitable incentives.

The key deliverable of the interviews is a report regarding the underlying motivation of the targeted individuals, why would they engage in the targeted activity, and what categories of relationships they have with each other. This report on motivations will form the foundation of the incentive customization.

6.2.2 Customization Process

The incentive customization framework requires insight into the factors influencing short-term and long-term behavior. As stated at the start of this chapter, it is assumed that the relational model used by the individuals aligns with Communal Sharing norms and that the company is still in early stages of its life, which implies that vision for the company has a significant influence on the members' motivation. In combination with the results regarding the underlying motivations towards the targeted activity, the customization process can now begin.

The base assumptions and the clarified short-term motivations towards the targeted activity are used as guidelines for creating the incentive instrument, who should be targeted and how. First, the incentive systems target activity. Founded on the assumptions stated before, it is assumed that the relationships between people align with Communal Sharing norms in regards to knowledge sharing. Based on this, the definition given by Fiske (1992) can help clarify what norms guide collaboration. Fiske (1992) states on p. (693) that:

"Each person has the complementary obligation to share with other members who need or ask things… people pool their resources, which they treat as belonging to a larger whole that transcends its individual members."

This quote indicates that contributions towards the common good of the group is expected based on the norms of the group, and therefore the main motivation of the individuals to share knowledge with others would be based on obligation-based intrinsic motivation. At the same time, knowledge sharing is a voluntary act (Černe et al., 2014) that contributes to the public good (Cabrera & Cabrera, 2002), and people only contribute just as much as they want (Connelly et al., 2012), the incentive needs to be set up in such a way that it supports the communal aspects of sharing. In other words: an incentive instrument targeting intrinsic motivation has to be set up in such a way that it does not frame the knowledge contributions in a way that might cause utility maximizing behavior to arise. Since knowledge sharing is fundamentally a social activity between individuals, the configuration of the incentive system should take this into consideration. One way of doing this would be to refocus the target of the incentive instrument to be the group instead of targeting purely the individual. This refocus of the target can also help avoid the creation of gain frames Bowles and Polania-Reyes (2012) while allowing for incentivization of the activity also at an individual level since each individual engaging in the activity also contributes towards the common good. Raising the target level from individual to the group would also allow the designer to bypass the difficulty associated with the problem of measuring individual knowledge contributions. As a result, other metrics, such as the number of new components deployed or satisfied customer interactions, could be used a proxy measure.

The next step is to decide the incentive instrument type. It was shown in the last chapter that intrinsic motivation, not extrinsic motivation, has the most significant effect on knowledge sharing intention in startups. As a result, the form that the incentive instrument takes should be chosen in a way that can indirectly help support the targeted individuals' intrinsic motivation towards the task. This emphasis on the indirect influence derives from the definition of intrinsic motivation as described by Lindenberg (2001), who stated that an individual's intrinsic motivation cannot be directly positively influenced with incentives (note, that negative influence can arise from crowding-out). Instead, the incentive instrument should focus on improving the organizational factors that influence intrinsic motivation.

Vision for the company and norms inside the company are both features of the company that develop over time. As the organization grows, the strategies used by the company to achieve its vision evolve. At the same time, the organizational culture also starts to change when more individuals join the organization. In the case of startups, both vision and organizational culture have been shown to have a significant influence on why individuals join the organization (Moser et al. 2017). This means that the incentive designer should design the incentive instrument in such a way that it supports the development and dissemination of the startup's vision and cultural practices between its members while supporting the targeted individuals' existing intrinsic motivation.

Example incentive instruments that can be used to meet the criteria listed above include opportunities for more specialized training and non-work group activities such as outings during work hours. In the specialized training, emphasis should be placed on increasing opportunities for collaboration while engaging in the training. The listed example instruments can be combined to target both the individual and the relevant group in order to become more potent motivators. The rationality for the listed example incentive instruments is based on the definitions of the various types of intrinsic motivation and on the fact that they allow the members of the organization to build deeper relationships between the members of the group in other contexts than just pure work. Such activities can also help clarify how the individual's contributions relate to the overall strategy to achieve the vision of the organization, as knowledge sharing plays a significant role in the dissemination of organizational vision (Ensley & Pearce, 2001).

As noted before, the proposed incentives and the fact that they are not sole targeted at specific activities of an individual can also possibly help get away from the problem with measuring exactly how much each individual contributes knowledge. In other organizations where extrinsic motivators play a more significant role in knowledge sharing motivation, measuring activities such as sharing in online systems or contributions to the company's development database could be targeted as proxy measures for the amount of knowledge shared. It should be noted that as the value of knowledge relies heavily on the context, finding a direct way to measure the value of the shared knowledge is a significant problem for any incentive systems that rely solely on accurately measured activities.

Based on the discussion presented here, incentives to encourage knowledge sharing should be based on targeting both the group and the individual through incentives such as a combination of non-work based interaction opportunities and opportunities for the targeted individuals to improve their own skills through training. These types of incentives would lead to increased knowledge sharing through improved relationships between individuals and by helping each sharer a better understanding of how they contribute towards the achievement of the organization's goals. If the incentive system deployment is correctly framed, it should have no negative effects on either the underlying motivation or on the company culture. However, just in case, once the incentive system is deployed, the analyst should track how the incentive influences the targeted behavior and if there are any sudden changes in the relational norms. If unwanted results, seem to start to arise, corrective actions should be taken by running the incentive customization framework again.

6.2.3 Conclusions

The example incentive customization presented in this chapter helps to highlight how the incentive customization framework (Laitinen & Senoo, 2016) can be used to create effective incentives. In regards to the customization, it is critical that the incentive designer understands the targeted individuals' base motivations regarding the wanted activity and the relationships between the targeted members. While the presented example here utilizes information derived during the research process for this dissertation, the incentive customization framework can be utilized regardless of the organizational context as long as the previously mentioned key fundamentals facts have been understood or are found out during the customization process.

As mentioned in Chapter 3, while the customization framework has a foundation in well-tested theories, the framework itself has not been tested in practice. Therefore, when practitioners adopt the framework, they should pay careful attention to understanding the nature of the targeted activity, how members of the organization perceive the targeted activity, and what are the relationships between the organization's members. Through a careful utilization of the customization framework, the customization process will more likely be successful, and the proposed incentive will have the predicted effect on the engagement in the targeted activity.

Future research should focus on the incentive customization process. Particularly, research focusing on the application of the incentive customization framework in other contexts besides young startups should be fruitful. As a first step, targeting more mature startups could prove to be useful as the foundations for motivation and relational model used by the startup's members will most likely have gone through changes and are likely to be different from the ones in the researched young startups. Through this second study in more mature startups, an understanding of how knowledge sharing motivation evolves over time could be derived. The Tracking of the changes in the motivation and relational model over time can also help understand how incentive systems need to evolve as well. Additionally, a more in-depth insight into the maturation process could also result in a deeper understanding of how knowledge-intensive organization develops to become mature organizations.

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Chapter 7. Conclusions and Future Research

7.1 Research Questions and Answers

Throughout this dissertation, the factors influencing knowledge sharing have been discussed in length based on the research questions presented in Chapter 1. The questions were as follows:

RQ1. How to design incentives to support knowledge sharing?

RQ2. What influences knowledge sharing in young startups?

These two research questions divide the dissertation into two broader streams: incentives for knowledge sharing and knowledge sharing in young startups. The first stream was covered in detail in Chapter 2 and Chapter 3. Out of all of the factors influencing sharing behavior, incentives for knowledge sharing was chosen as one of the main focuses of the dissertation due to its influence on changing sharing behavior. As previous research on incentives has derived mixed results, there was a need for more research in order to derive a more profound understanding of how to customize incentives in order to influence knowledge sharing behavior.

Once incentive systems and incentive customization had been discussed and key research results presented, the focus of the dissertation moved to the second theme of the dissertation, knowledge sharing inside young startup discussed in Chapter 2, Chapter 4, and Chapter 5. The reason this second more industry-focused topic was chosen due to the significant influence that early management practices have on the survival and success of the startup and because incentive systems should not be created without understanding the underlying motivations of the targeted individuals. Finally, after the empirical research regarding knowledge sharing in startups had been presented, incentives systems for encouraging knowledge sharing in startups was covered the second to last chapter, Chapter 6, of this dissertation.

The answers to the two presented research questions can be summarized as follows: the answer to RQ1 is to use the proposed framework to design a suitable incentive system that takes into account the specifics of the organization's culture and norms, the targeted people's motivations, and how the proposed incentive system influences these factors. A full list of factors that need to be considered is presented in Chapter 3. By utilizing the proposed framework, the likelihood of deriving a successful knowledge sharing outcome with the proposed incentive system is increased. This increase in the likelihood of success derives from the fact that when a proposed incentive system is analyzed with the proposed framework, the particulars of the specific organization, including its organizational culture and relationships between individuals, can be considered in more detail. By increase in the scope of details considered during the creation of the incentive system should help the incentive system target specific sharing behavior through increased fit between the organization and the incentive system.

For RQ2, the short answer is that knowledge sharing in young startups is based on intrinsic motivation, and particularly intrinsic motivation related to following the existing organizational norms. The derived result emphasizes the responsibility of the founders and early core members to create organizational norms that support knowledge sharing practices. Additionally, the results also emphasize the human aspects of sharing. In other words, understanding the underlying motivations of individuals to engage in specific behavior and organizational norms have to be considered when creating formalizing knowledge sharing practices. As the startup grows, the sharing practices should be realigned with the organizational norms and motivations of workers, if any misalignment has been discovered.

The answers to these two research questions also offer implications for both academic theory development and for practitioners in regards to incentive system customization and how to support knowledge sharing in young startups.

7.2 Theoretical Implications

The main answer to how to design incentives to support knowledge sharing is based on the framework presented in Chapter 3. Incentive systems need to be customized in such a way that they take into consideration not only the economic factors of sharing but also the non-financial and relational factors of sharing. This means that the incentive designer needs to consider what information the person the incentive is targeting can receive in regards to the incentive system, the incentive designer, and how does the proposed change in behavior suggested by the incentive system fit with the underlying motivations of the individuals and the prevailing norms of the organization. Failure to consider these factors will likely result in the incentive system only partially achieving the wanted outcome, e.g., having only a temporary impact on behavioral patterns. However, in the worst case, the effects of the incentive system can be a complete unwanted outcome caused by a change in an unanalyzed but relevant factor that influences the sharing behavioral pattern.

The customization framework presented in Chapter 3 can be used by both academics and practitioners to better understand the implications of any proposed incentive systems. To be more precise, the framework can help the analysis process regarding the relationships between the proposed incentive targets, the incentivized activities and the considerations for what are the implications of the suggested behavioral changes for both short-term and long-term success factors.

In addition, these results contribute to the academic research on incentive customization by introducing a framework for incentive customization analysis by through the introduction of a more capable tool that academics can use to analyze the incentive system. This tool can help also clarify some of the mixed results derived in previous studies as it can clarify the incentive system-organization fit of previously reported results.

In regards to Research Question 2, what motivates knowledge sharing young startups, based on the research included in this dissertation, it can be stated that knowledge sharing motivation is founded on the intrinsic motivation of individual members. For practitioners, the key results are based on the model regarding knowledge sharing intention presented in Chapter 5. The model implies that knowledge sharing motivation can be increased by having well communicated vision for the company and an organizational culture that supports knowledge sharing, which in turn influence knowledge sharing motivation of the members.

However, in the case of young startups, the discussed model also showed that extrinsic motivators do not increase in sharing intention, which is in contrast to some previously derived results. This result points towards members perceiving knowledge sharing not as a private utility-maximizing activity but as an activity that helps the whole organization. Hence, any proposed knowledge sharing activities should consider how these factors can be leveraged towards an optimal outcome.

Additionally, the derived result of the non-influence of extrinsic motivators points towards the need to use prosocial, or other-regarding preferences models, if analyzed using a pure economic approach. This result contributes to the academic research on by adding to the body of evidence that knowledge sharing is driven by intrinsic motivation, and to the general research on young startups regarding the importance of intrinsic motivation. Notably, this is, to the authors' knowledge, the first time that knowledge sharing motivation in young startups has been studied in detail using quantitative methodologies.

7.3 Practical Implications

The results presented in this dissertation have implications for managers both in startups and generally to individuals engaged in designing incentive systems. First, in regards to creating incentive systems to support knowledge sharing, Laitinen and Senoo (2015, 2016) detail that the incentive designer needs to consider factors other than just the incentive and the measurement of performance. In fact, factors such as how the incentive designer perceives the incentivized task, how the incentive system is presented to the targeted individual and is the incentive coercive need to be analyzed in more detail and understood in the context of the underlying motivations of the targeted individuals. Additionally, these factors need to be considered in the relevant organizational context, where the use of extrinsic motivators may or may not be suitable.

The results presented in this dissertation also mean that the incentive designer needs to understand what are the relational norms that govern behavior in the organization in general and what types of relationships individual members have between them. The customization framework presented in Chapter 3 is a tool that all incentive designers can in their practices. The framework details the dimensions that should be considered when new incentive systems are created. Examples of the use of the tool can be found detailed in Chapter 3 and Chapter 6.

In regards to knowledge sharing in startups and how to further support knowledge sharing, it was shown that in Chapter 5 that knowledge sharing intention in startups is founded on the intrinsic motivation of the startup members. Additionally, it was also shown that vision for the company and organizational culture, namely Communal Sharing –type culture, are positively linked to increasing knowledge sharing motivation. However, both of these antecedents of knowledge sharing motivation usually receive less attention from the busy founders, particularly once the company starts to grow bigger and more members join the organization. As a result, organizational culture and the norms of sharing only receive attention once they have become a problem. However, at this point, changing the behavioral patterns and culture inside the organization will be very challenging. Therefore, in addition to their regular daily work, founders and core members of young startups should focus on creating a clear and well-disseminated vision for the company, and focus on creating an organizational culture where the reciprocal benefits of sharing and enjoyment derived from helping others are emphasized. It is crucial that attention is paid to both of these factors already during the foundation of the company as disseminating information and practices related to these to newcomers will be easier when there are only a few people joining the organization.

Communicating the vision for the company can be done through the stories the members of the organization tell to each other and the new members of the organization. However, time should be spent on creating a coherent narrative that matches the listener of the story as previous research has shown that by customizing the stories to suit the audience can result in a better transmission of the vision. This also emphasizes on the founders' role in creating a convincing and clear vision for the company and on her communication skill, as the story needs to be told in a way that convinces the members about the importance of the vision. It should also be noted that if there are changes in the vision for the company, this change needs to be also disseminated convincingly to the members in such a way that the motivational boost of the previous vision is not lost.

As with the vision for the company, organizational culture also emphasizes the role of founders and core members of the startup. This means that the founders should be mindful of the activities to build an organizational culture as the culture will be founded on the daily behavioral patterns of the individuals. In detail, the actual daily practices of the members of the organization, particularly in regards to knowledge sharing practices, need to be aligned with what is stated by the leaders of the organization. Otherwise, there will be a conflict between the carried-out actions and stated norms, which can result in an organizational culture where little to no sharing takes place.

Based on the results of the research covered in this dissertation (Laitinen & Senoo, 2017, 2019), it can therefore be stated that in young startups, if incentives are to be used, they should be customized based on the framework proposed in Chapter 3, and that the incentive should focus on supporting the intrinsic motivational aspects of knowledge sharing and collaboration in general. An example of this has been detailed in Chapter 6. Given that it was found that knowledge sharing in young startups is driven entirely by intrinsic motivation and that the organizational norms of young startups align with the description of Communal Sharing, designing incentives in such a way that they do not break any of the existing organizational norms will be challenging. Instead of relying on purely individual level targeting, incentives should be customized to target group level factors in such a way that they utilize incentive forms that do not engage in utility-maximizing behavior. In other words, the incentive used should be aligned to support the dissemination of vision throughout the organization with additional emphasis on the social aspects of relationships. One way to achieve this goal is through non-work related activities, where the norms of the relationships are respected. For example, by having common time that can be spend inside the office outside without engaging in work activities. Activities such as these should also help alleviate some of the problems that the fast growth of the company might bring about. However, as the organization starts to grow, the alignment of sharing practices and incentives needs to be reanalyzed with the framework in order to understand if any misalignment has appeared between them.

7.4 Limitations and Future Research

The limitations of the work presented in this dissertation are related to the application of the presented results. First, while the framework for incentive customization was used to analyze published incentive programs, it has not been used to design new incentive systems. Therefore, the next step should be to have a rigorous test of the framework in a real organization by first analyzing all of the relevant contextual factors included in the framework. After this, an incentive system designed based on the analysis should be deployed and the long-term results compared to the predicted outcomes. This would result in an understanding of what factors of the customization framework are more important than others. More generally, the influence of organizational context on incentives can be a fruitful a future research direction which can hopefully help explain the conflicting results that have been derived in previous research.

Second, the research on knowledge sharing motivation in startups is founded on case studies and a survey that were carried out globally. However, both of these were based on the researcher's private access to the companies and the use of statistical instruments created for other organizational contexts. These methods result in a snapshot of the current knowledge sharing practices in the startup, which can help managers and researchers understand the general state of knowledge sharing in young startups, but they do indicate how the sharing practices will evolve in the future once more people join the startup. Therefore, future research should focus on creating stable and reliable data access to young startups and on creating new statistical instruments to target the specifics of the startup context. More generally, it can be stated that research on young startups are still in its infancy and more context-specific, long-term research should be carried out. Such research would likely have a significant impact on the management practices of startups and their survival rate.

References

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Appendix – Survey from Laitinen and Senoo (2019)

Included in this Appendix is the survey used by Laitinen and Senoo (2019) to gather their data. This data is the foundation of Chapter 5. The following has been adapted from the online survey form that was created in Google Docs.

Title of the Survey: *Comparing knowledge sharing motivation in organizations*
Introductory text: *This survey aims to clarify what motivates employees to collaborate within the organization.*

Completing the survey should take less than 10minutes. In total, there are 11 (+3 if you work for a startup) general questions about you and your background, 46 multiple choice questions about your relationships within the organization and 2 very short open ended question.

All of the information will be treated with the utmost respect to privacy and all identifying data will be disregarded from the analysis. If you have any questions, please don't hesitate to get in touch with the author (Jouni Laitinen) through laitinen.j.aa@m.titech.ac.jp

General background

Year of Birth:
Gender:
Nationality:
Country of Company:
Education level:
Job title at the company:
Industry:
When did you join the company:
How many people worked at the company when you joined:
How many people currently work at the company:
Do you work at a startup? Yes / No

About the stage of the startup

Introductory text: *This section is to understand a bit more about the startup stage*

When was the company established (approximately, year.month e.g. 2015.12):

Funding stage of the company:

- Self-funded/bootstrapping
- Family and friends
- Angel / seed funding
- Series A
- Series B or later
- I don't know

Other:______________________

Section 1 – About your work in the organization

Introductory text: This section is used to understand your motivation for your job a bit better.

I receive a fixed salary (base salary, complements, etc.) for my activity in the organization

Totally disagree Totally agree

1 2 3 4 5 6 7

The organization explicitly recognizes my job (through rewards, mentions in the organization's magazine, intranet, advertisement board, etc.)

Totally disagree Totally agree

1 2 3 4 5 6 7

The organization offers me the possibility for promotion.

Totally disagree Totally agree

1 2 3 4 5 6 7

The organization offers stability and continuity in my job.

Totally disagree Totally agree

1 2 3 4 5 6 7

My activity in the organization lets me improve as a person, enhance my self-confidence, get mature, self-accomplish. . .

Totally disagree Totally agree

1 2 3 4 5 6 7

I have autonomy in my job and I can contribute with my ideas.

Totally disagree Totally agree

1 2 3 4 5 6 7

I consider this organization honest and coherent with its mission.

Totally disagree Totally agree

1 2 3 4 5 6 7

I have an organization's sense of belonging (I feel myself as an organization member, loyal and involved to it).

Totally disagree Totally agree

1 2 3 4 5 6 7

What motivates you to work at your current organization?

____

____

Section 2 – About knowledge sharing

Introductory text: *In this section "knowledge sharing" means the act of sharing and making knowledge available throughout the organization with the goal of increasing knowledge utilization. This can happen for example via email, instant messaging or in meetings. This is the longest section (16 multiple choice questions) and the other sections after this will be shorter (16 questions in total).*

I will receive a higher salary in return for my knowledge sharing.

Totally disagree Totally agree

1 2 3 4 5 6 7

I will receive a higher bonus in return for my knowledge sharing.

Totally disagree Totally agree

1 2 3 4 5 6 7

I will receive increased promotion opportunities in return for my knowledge sharing.

Totally disagree Totally agree

1 2 3 4 5 6 7

I will receive increased job security in return for my knowledge sharing.

Totally disagree Totally agree

1 2 3 4 5 6 7

I strengthen ties between existing members of the organization and myself.

Totally disagree Totally agree

1 2 3 4 5 6 7

I expand the scope of my association with other organization members.

Totally disagree Totally agree

1 2 3 4 5 6 7

I expect to receive knowledge in return when necessary.

Totally disagree Totally agree

1 2 3 4 5 6 7

I believe that my future requests for knowledge will be answered.

Totally disagree Totally agree

1 2 3 4 5 6 7

I am confident in my ability to provide knowledge that others in my organization consider valuable.

Totally disagree Totally agree

1 2 3 4 5 6 7

I have the expertise required to provide valuable knowledge for my organization.

Totally disagree Totally agree

1 2 3 4 5 6 7

It does not really make any difference whether I share my knowledge with colleagues.

Totally disagree Totally agree

1 2 3 4 5 6 7

Most other employees can provide more valuable knowledge than I can.

Totally disagree Totally agree

1 2 3 4 5 6 7

I enjoy sharing my knowledge with colleagues.

Totally disagree Totally agree

1 2 3 4 5 6 7

I enjoy helping colleagues by sharing my knowledge.

Totally disagree Totally agree

1 2 3 4 5 6 7

It feels good to help someone by sharing my knowledge

Totally disagree Totally agree

1 2 3 4 5 6 7

Sharing my knowledge with colleagues is pleasurable

Totally disagree Totally agree

1 2 3 4 5 6 7

Section 3 - Relationships with other people within the organization

Introductory text: *Half way! 16 multiple choice questions left. In this section, think about a person within the organization that you interact with.*

If either of you needs something, the other gives it without expecting anything in return

Not true at all of this relationship	1	2	3	4	5	6	Very true for this relationship

You feel a moral obligation to feel kind and compassionate to each other

Not true at all of this relationship	1	2	3	4	5	6	Very true for this relationship

The two of you are a unit: you belong together

Not true at all of this relationship	1	2	3	4	5	6	Very true for this relationship

The two of you tend to develop very similar attitudes and values

Not true at all of this relationship	1	2	3	4	5	6	Very true for this relationship

You feel that you have something unique in common that makes you two essentially the same

Not true at all of this relationship	1	2	3	4	5	6	Very true for this relationship

Section 4 – Shared vision for the organization

Introductory text: Over half way! 11 questions left. This section deals with how does your vision for the company align with other members.

Organization members share the same vision about their organization

Totally disagree Totally agree

1 2 3 4 5 6 7

Organization members are committed to jointly agreed-on goals of the organization

Totally disagree Totally agree

1 2 3 4 5 6 7

Organization members agree about the long-term development objectives of the organization

Totally disagree Totally agree

1 2 3 4 5 6 7

Section 5 – Perceived need for incentives

Introductory text: *Almost there! 8 questions left! This section is about how do you perceive others and yourself to be motivated by incentives.*

How motivated do you think other employees are to do his/her job for external reasons (pay/medical benefits)?

Not at all Completely

1 2 3 4 5 6 7 8 9

How motivated do you think you are to do your job for external reasons (pay/medical benefits)?

Not at all Completely

1 2 3 4 5 6 7 8 9

How motivated do you think other employees are to do his/her job for internal reasons (finding job enjoyable and interesting)

Not at all Completely

1 2 3 4 5 6 7 8 9

What types of incentives (e.g. stock options, cash, more holidays etc.) would motivate you the most at your current job?

____

____

<u>Section 6 – Knowledge sharing intention</u>

Introductory text: *Final Section! Last 4 questions left.*

I intend to share knowledge with my colleagues more frequently in the future

Totally disagree Totally agree

1 2 3 4 5 6 7 8 9

I will try to share knowledge with my colleagues

Totally disagree Totally agree

1 2 3 4 5 6 7 8 9

I will always make an effort to share knowledge with my colleagues

Totally disagree Totally agree

1 2 3 4 5 6 7 8 9

I intend to share knowledge with colleagues who ask

Totally disagree Totally agree

1 2 3 4 5 6 7 8 9

That's it! Thank you very much for your answers!

Questions? Comments? Laitinen.j.aa@m.titech.ac.jp