

How to foster inter-organisational knowledge sharing on the Knowledge Sharing Centre-platform

Master Thesis

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Executive summary

This master graduation project is made possible by Knowledge Sharing Centre (KSC) and ASML. Knowledge Sharing Centre is an initiative that aims to connect the design and manufacturing industry to increase innovation effectiveness through knowledge sharing. In an attempt to initiate inter-organisational knowledge sharing between organisations in the high-tech industry they started a knowledge sharing platform. This research is conducted in relation to the KSC-platform with the support of affiliated organisations in the high-tech industry.

Introduction and problem description

Scientific research has demonstrated the contribution of inter-organisational knowledge sharing to organisations' competitiveness, performance and innovation capacity (Cummings, 2004; Easterby-Smith et al., 2008; Lawson et al., 2009; Loebbecke et al., 2016). These days organisations are more interdependent on their supply chain. To improve business processes in the supply chain, it is necessary to engage in knowledge sharing with the entire sector. Yet, organisations in the supply chain are often very different in terms of size, business maturity, culture, etc. and knowledge sharing in networks has been researched much less often. Therefore, this thesis investigates how organisations can attain inter-organisational knowledge sharing in a network.

In this, the KSC-platform provides a suitable business case. Since the start of the platform knowledge sharing between participants has been limited. The problem of this business case is that KSC lacks clear understanding of the considerations of organisations regarding inter-organisational knowledge sharing and what drives and withholds them from participating on the KSC-platform. The goal of this research is to gain more insight into the benefits and risks the organisations in the KSC-network perceive with inter-organisational knowledge sharing and how this impacts their considerations for participating in the KSC-platform. In sum, the thesis research is conducted to provide an answer to the question: *How can KSC support organisations in the high-tech industry to practice and participate in inter-organisational knowledge sharing on their knowledge sharing platform?*

Theoretical framework

Extent literature shows that inter-organisational trust and absorptive capacity are crucial preconditions for establishing organisational collaborations and strategic alliances, where organisations reap overwhelming results through inter-organisational knowledge sharing (Easterby-Smith et al., 2008; van Wijk et al., 2008). However, engaging in direct collaborations or strategic alliances is quite different from initiating a network of diverging organisations that exchange knowledge. That is why it is relevant to investigate this type of inter-organisational knowledge sharing and determine which antecedents and determining factors are important for accomplishing successful knowledge sharing in a network of organisations. In their meta-analysis, van Wijk et al. (2008) investigated antecedents across an extensive number of studies on organisational knowledge transfer and found inter-organisational trust to be among the most important network-level driver for organisational knowledge sharing together with absorptive capacity.

Organisations that participate in inter-organisational knowledge sharing need a certain security that the knowledge they share will not be exploited. Trust can create that sense of security. Inter-organisational trust is found to have a strong positive effect on inter-organisational knowledge sharing (Aulawi et al., 2009; Chen et al., 2014; Cheng et al., 2008; Easterby-Smith et al., 2008; Seyyedeh et al., 2009; van Wijk et al., 2008). To gain insight on how trust can be established between organisations, several factors are found to influence inter-organisational trust. Factors that influence inter-organisational trust are relation capital, opportunistic behaviour, participation and communication,

power and dependency, shared vision and goals and prior experience (Chen et al., 2014; Cheng et al., 2008; Easterby-Smith et al., 2008; Inkpen, 2000; Seyyedeh et al., 2009; van Wijk et al., 2008). Absorptive capacity distinguishes between four separate capabilities; acquisition, assimilation, transformation and exploitation (Zahra & George, 2002). An organisation's absorptive capacity, the capacity of organisations to absorb knowledge into their organisation, is influenced by prior experiences and the self-efficacy of employees regarding knowledge sharing, although the required absorptive capacity also depends on the attributes of the knowledge being shared (Aulawi et al., 2009; Easterby-Smith et al., 2008; Inkpen, 2000; Jansen et al., 2005; Lin, 2007; Seyyedeh et al., 2009; van Wijk et al., 2008).

Methodology

The qualitative research method was chosen to gain insight into the situation specific for KSC and the views of organisations participating on the KSC-platform, as the aim of the qualitative research approach was to collect an extensive and in-depth data on the consideration that organisations have with regards to inter-organisational knowledge sharing. To gain these insights, in-depth semi-structured interviews were conducted with organisational representatives on key management positions to collect qualitative and rich data on the considerations of an organisations with regards to KSC-platform. In total 18 interviews were conducted with organisations in the Dutch high-tech industry. These organisations were selected based on the four participant groups classified on the KSC-platform (Teaching institutes, Manufacturing companies, Engineering companies, Equipment manufacturers) in order to represent the entire population of the KSC-network.

To analyse the data from these interviews, a theoretical thematic analysis method is used for its focus on identifying common themes throughout the data based on the theoretical framework (Braun et al., 2006). The thematic analysis method by Braun et al. (2006) provides a structured six-step process that lets you familiarise with the data, generate codes, identify themes, review themes, define and name themes, and write up the analysis. As this research aimed to identify the benefits and risks organisations associated with the KSC-platform, as well as gain insight into their point of view regarding inter-organisational trust and absorptive capacity, the choice as made to separate the codes in four classifications, risks, restrictions, conditions and wishes and investigate how these relate to inter-organisational trust and absorptive capacity. Through the coding frequency, it is was possible to identify which factors of trust are considered most important by respondents.

Conclusion

Organisations expressed concerns with uncertainties regarding the direction, decision making, costs and actual benefits the platform. Yet, it has been found that, if cost of participation does not exceed certain limits, organisations mainly account for benefits and risks in their decisions to participate on the platform. Benefits organisations perceive are access to more in-depth knowledge, the possibility to expand and strengthen their relations, direct commercial value and standardisation of definitions and terminology across the high-tech industry. Risks organisations associate with inter-organisational knowledge sharing the most are; providing competition with knowledge and thus losing market position, leakage of knowledge that is not meant to be shared and the risk that knowledge being shared on the platform is incorrect, obsolete or low quality. Some organisations also fear for job poaching or that they are not able to utilise knowledge available on the platform, because knowledge is too abstract or they lack the capacity. Organisations might not participate on the platform when they are expected to share intellectual property, costs are too high, there is no mutual knowledge exchange or they experience unfair sharing or opportunistic behaviour.

All organisations agreed on the necessity of inter-organisational trust for knowledge sharing between organisations. While their importance varies, all factors for inter-organisational trust as identified in the theoretical framework are found to also determine trust on a network level. Factors that

are considered most important for inter-organisational trust on the KSC-platform are transparent and reliable communication, avoidance of opportunistic behaviour, independency and balance in power, equal knowledge competence and the implementation of mechanisms that ensure trust. Absorptive capacity however has not been mentioned nearly as often. Respondent expressed the platform is in a too early stage to discuss the absorption of knowledge from the platform, indicating that inter-organisational trust is more important in early stage of network-based knowledge sharing than absorptive capacity. Which is also evident from the focus on transparent and reliable communication, clarification of direction and expectations and aversion for opportunistic behaviour when establishing trust.

Absorptive capacity is still considered essential for inter-organisational knowledge sharing on the platform. Organisations expect they have the ability or will be able to develop the ability to incorporate the knowledge shared by others on the platform. However, it is possible that risks associated with lack of absorptive capacity become more evident when more complex knowledge is shared. Organisations do wish knowledge on the platform is being curated in an accessible and manageable way by the KSC to avoid knowledge being too abstract or hard to interpret.

Recommendations

When looking at the results of the study, the following three trends stand out: Uncertainties surrounding the platform, an open and trusted community of organisations and an accessible knowledge sharing platform. These three trends are identified as objective for the KSC to address. Several hands-on recommendations are provided towards KSC on how they can support organisations in the KSC-network to practice and participate in inter-organisational knowledge sharing on the KSC-platform.

The SECI model by Nonaka and Takeuchi (1995) describes dimensions of a generic knowledge conversion process. By applying it on the KSC-platform, this model can provide insight into the conversion of knowledge between participants. Based on the results of this study, suggestions are made on how KSC can approach these dimensions to foster the knowledge sharing process between organisations participating on the platform. The following suggestions are made to KSC:

- Communicate the benefits of the platform to attract more participants to the platform;
- Communicate the future and direction of the platform through a roadmap, as well as the progress, changes and choices made in the process;
- Encourage transparent communication between organisations by initiating meetings where participants have to express their expectations, intentions and contributions towards the platform and other participants;
- Enhance empathy and cooperation between participants by letting organisations engage in each other's problem-solving process. Which can motivate organisations to come up with new solutions or purposes for their knowledge or products;
- Promote joint decision making as a community to pursue exchange of equivalent knowledge competences and increase group cohesion;
- Propagate the importance of knowledge management and absorptive capacity;
- Provide support, guidance and education for internal knowledge management, external knowledge sharing and absorptive capacity;
- Curate the knowledge shared on the platform by combining new knowledge with existing knowledge competences;
- Showcase successful collaboration project which resulted from knowledge sharing between organisations, which can also serve to propagate benefits of the platform;
- As a curator, ensure knowledge on the platform is up to date, valid and sound;
- Manage participant behaviour by policing unwanted behaviour and pursuing equality and fair sharing on the platform.

Preface

This master thesis marks the end of my thesis project and my time at Eindhoven university of technology. In this turbulent six-year period I have experienced many ups and downs; I learned a lot of interesting things and got to meet interesting people; I even started my own company which put my master program on the side line; but also, a covid-pandemic. I am grateful for Knowledge Sharing Centre and ASML to provide me the opportunity to start a graduation project (September 2020) in these uncertain times. During this time, I had to deal with stress related mental health issues that delayed my graduation project. I would like to thank the people who supported me through this time and helped me during my graduation project.

First of all, I would like to thank my mentor at TU/e, Josette Gevers, for her guidance, critical observation and sharp feedback. Your supervision helped me to make this research a success. But above else, I would like to thank you for your patience and care during my lesser moments. Without it, I would not have been able to finish this project. I would also like to thank Sonja Rispen for her feedback on my thesis.

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1. Introduction and thesis outline

Knowledge sharing is known as a factor that contributes to the competitive advantage, efficiency and problem-solving capabilities of organisations (Ipe, 2016; Mumford et al., 1991; Nooshinfard & Nemati-Anaraki, 2014). Not only when it comes to knowledge sharing within organisations, but also when knowledge is shared between organisations, like in strategic alliances (Carmeli et al., 2013). Growing evidence in scientific research demonstrates that inter-organisational knowledge sharing contributes to the competitiveness, performance and innovation capacity of organisations (Cummings, 2004; Easterby-Smith et al., 2008; Lawson et al., 2009; Loebbecke et al., 2016).

Knowledge sharing in networks of organisations has been researched much less often, though there is growing interest into the topic as literature on it is expanding (Marchiori & Franco, 2020). In today's era where international competition is fierce, organisations more interdependent on their entire supply chain to conquer, maintain and improve their marketing position. To take the sector to a higher level and remain ahead of international competitors, it is necessary to exchange knowledge in order to improve business processes through the entire supply chain. Although organisations in the supply chain are dependent on each other, they often are also very different in terms of size, business maturity, culture, objectives, etc. This thesis investigates how organisations can still attain inter-organisational knowledge sharing in a network, despite these major differences.

With the long-term benefits of inter-organisational knowledge sharing in mind, Knowledge Sharing Centre (KSC) started a knowledge sharing platform for organisations in the high-tech industry. Organisations can participate on the platform to engage in knowledge sharing with other organisations in the sector. Since the start of the platform knowledge sharing between participants has been limited and it is unclear why. While, the benefits of inter-organisational knowledge sharing are evident in managerial literature, organisations in the KSC-network seem to be hesitant to share knowledge externally. The problem of this business case is that KSC lacks clear understanding of the considerations of organisations regarding inter-organisational knowledge sharing and what drives and withholds them from participating on the KSC-platform. The goal of this thesis is to gain more insight into the benefits and risks the organisations in the KSC-network perceive with inter-organisational knowledge sharing and how this impacts their considerations for participating in the KSC-platform. In sum, the thesis research is conducted to provide an answer to the question: *How can KSC support organisations in the high-tech industry to practice and participate in inter-organisational knowledge sharing on their knowledge sharing platform?*

Scientific research shows that inter-organisational trust and absorptive capacity are crucial preconditions for establishing organisational collaborations and strategic alliances, where organisations sharing reap overwhelming results through inter-organisational knowledge (Easterby-Smith et al., 2008; van Wijk et al., 2008). However, engaging in direct collaborations or strategic alliances is quite different from initiating a network of diverging organisations that exchange knowledge. That is why it is relevant to investigate this type of inter-organisational knowledge sharing and determine which antecedents and determining factors are important for accomplishing successful knowledge sharing in a network of organisations.

In the following chapter, the business case of KSC is introduced and how it relates to the thesis. It also describes the problem, research objective and research questions of this thesis. In chapter 3 the theoretical framework is presented, which resulted in an overview of important antecedents and influential factors and how they relate to inter-organisational knowledge sharing according to scientific literature. Based on the theory and the research questions, a research model is drafted and presented. Chapter 4 provides an overview of the methodology in which the approach to the research is described. As well as the data collection method, research sample, data handling and analysis approach. The

findings of this research are presented in chapter 5. Whereafter the theoretical and practical implications of these results are discussed in chapter 6, as well as the study limitations and suggestions for future research. The thesis is concluded with recommendation to KSC, which also provides an answer to the last research questions. Quotations of respondents are used in the thesis to provide examples from the data as evidence that clarify and support the findings of this research. Note that these quotations are translated by the researcher and therefore might be subject to slight variations to the original statements.

2. Research context and objectives

In this chapter of the Thesis the context and objectives of this research are described. This research is commissioned by Knowledge Sharing Centre. Therefore, first an introduction into Knowledge Sharing Centre is provided. Then, the problem situation specific to Knowledge Sharing Centre is described and the aim of this research is presented. Followed by the main research question and sub questions.

2.1 Introduction Knowledge Sharing Centre

Knowledge Sharing Centre (KSC) is a foundation that is initiated through a collaboration of organisations, unions and foundations in the manufacturing industry. The initiative is founded with the goal to increase open innovation and connect organisations in the Brainport region and beyond. More particularly, KSC aims to connect the design and manufacturing industry to increase innovation effectiveness.

KSC has set up an independent non-profit knowledge sharing platform. The aim of the platform is to support securing and sharing knowledge, both inside and outside the KSC community (Knowledge Sharing Centre, 2020). The KSC-platform represents itself as a network platform that combines knowledge from four different types of organisations as presented in Figure 1 (Knowledge Sharing Centre, 2020):

- Manufacturing companies, organisations that focus on production of products by labour or machinery with intent to use;
- Teaching institutes, organisations with a strong commitment to teach, not limited to educational or research institutes;
- Original Equipment Manufacturers (OEM), organisations that produce parts, equipment or systems with the use of component parts bought from other manufacturing or engineering companies.
- Engineering companies, organisations with the purpose to design and build machinery, structures, etc.;

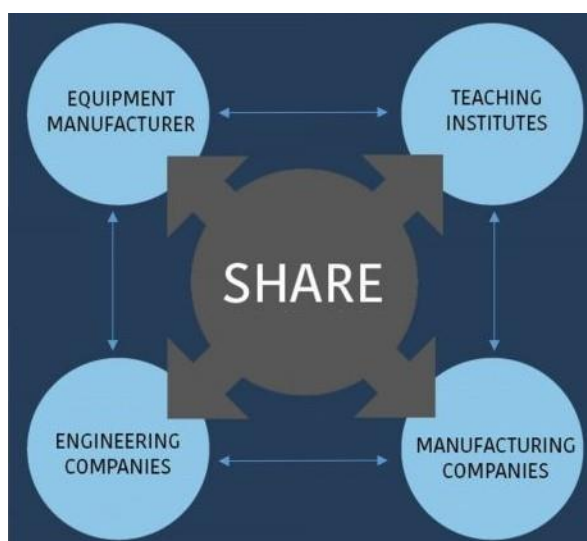


Figure 1: Groups of organisations on the KSC-platform (Knowledge Sharing Centre, 2020)

Regardless of the influence knowledge sharing has on innovativeness of associated organisations (Lin, 2007; Wang & Wang, 2012), the business perspective specific to the KSC concept is that sharing knowledge in the high-tech industry can enhance the design process and alignment of organisations throughout the entire supply chain, as well as enhance and develop manufacturing techniques and thus increase innovation effectiveness of the entire industry. The aim of sharing knowledge early and accurately in the design process is to reduce the need for redesigns, and thus lower development and manufacturing cost, better time-to-market and user experience (Herrmann et al., 2004).

2.2 Problem statement

KSC would like to create a network of organisations that share knowledge. Their goal of KSC is to connect organisations in the design and manufacturing industry in a way to enhance the innovative strength of the high-tech industry. Underlining this goal, they stated the following in the initial set-up document for this research:

“The ambition for continuity and viability is a driver for design- and manufacturing organisations. In this search to become future proof it is increasingly important to effectively and quickly innovate and develop products, services and organisations. External knowledge sharing is key in innovative performance”.

In pursuit of this goal, KSC aims for knowledge sharing to become standard practice amongst its members. However, while the benefits of inter-organisational knowledge sharing are evident in managerial literature, sharing knowledge with external organisations in a network construction is barely practiced. Organisations in the KSC network seem to be hesitant to share knowledge externally and their intentions are unknown. KSC lacks a clear understanding of what drives or hinders organisations to share knowledge outside of organisational boundaries.

2.3 Research objective

KSC wants to foster inter-organisational knowledge sharing within its platform. The problem is KSC does not know the considerations of organisations about participating and practicing inter-organisational knowledge sharing on this platform; how organisations value the KSC-platform, which benefits and risks organisations perceive with inter-organisational knowledge sharing on the platform. The aim of this research is to gain a better understanding of the benefits and risks the organisations perceive with inter-organisational knowledge sharing and how this impacts their considerations for participating in the KSC-platform. This implies an overview of important benefits and risks, substantiation why these benefits and risks are considered as important for the KSC, as well as practical implications for KSC on how these insights can be utilised to enhance participation and knowledge sharing behaviour of organisations on the platform.

2.4 Research questions

Based on the problem statement and research objective the following main research question is formulated:

How can KSC support organisations in the high-tech industry to practice and participate in inter-organisational knowledge sharing on their platform?

To provide direction to this research and help answer the main research question several sub-questions are formulated. First, it is important to gain insight into considerations organisations have regarding inter-organisational knowledge sharing and what benefits and risks they perceive. Therefore, the following questions are formulated.

- Q1. What considerations determine the stance of organisations in the high-tech industry towards practicing and participating in inter-organisational knowledge sharing?**
- Q2. Which benefits do organisations perceive in inter-organisational knowledge sharing and what do they hope to gain from the KSC-platform?**
- Q3. Which risks do organisations associate with inter-organisational knowledge sharing and what restricts them from participating in the KSC-platform?**

In a big network of organisations, all with different needs and characteristics, it is useful to find commonalities between similar organisations. On the platform, organisations are classified into four organisations groups (Manufacturing organisations, Teaching institutes, OEM and Engineering organisations). It is interesting to find differences in perceived benefits and risks between these groups of organisations. Therefore, the following question is formulated.

- Q4. How do the four participant groups differ with regards to perceived benefits and risks for participating in the KSC-platform?**

Insight into the above-mentioned sub-questions provide a better understanding of benefits and risks organisations on the platform perceive with inter-organisational knowledge sharing and how they impact the considerations of organisations to practice and participate in knowledge sharing on the platform. Based on these insights, mechanisms can be implemented to foster participation and support organisations with practicing inter-organisational knowledge sharing. To provide a substantiated recommendation in this research the following practice-oriented question is formulated.

- Q5. How can KSC exploit benefits and mitigate the risks that organisations perceive with inter-organisational knowledge sharing to foster the practice of inter-organisational knowledge sharing on their platform?**

To answer the research questions stated above, a scientific literature search is done to determine which aspects of inter-organisational knowledge sharing are important topics for this research and the context of KSC. Based on literature an overview of important antecedents of inter-organisational knowledge sharing is constructed. To provide general direction in the research, a research model is created that combines the research questions regarding benefits and risks of inter-organisational knowledge sharing with the important antecedents of inter-organisational knowledge sharing. This ensures that data is collected which suits the research question and the specific context of KSC. In the following chapter the theoretical framework for the research is discussed, leading up to the research model that is used to guide the research.

3. Theoretical framework

In this chapter the theoretical framework of this thesis is presented. The premise of this thesis is inter-organisational knowledge sharing in a network structure. The first section describes inter-organisational knowledge sharing and discusses existing literature on inter-organisational knowledge sharing. Then, the influence of knowledge, organisations and the relation between organisations on the inter-organisational knowledge sharing process are discussed. From this, two themes are found to be extra relevant for this thesis: inter-organisational trust and absorptive capacity. In the following sections, both themes are addressed accordingly. The chapter is concluded with a visual overview of important antecedents of knowledge sharing and the research model of this thesis.

3.1 Inter-organisational knowledge sharing

Van den Hooff and Ridder (2004) define knowledge sharing as ‘a process where individuals mutually exchange their implicit and explicit knowledge and jointly create new knowledge’ (p. 118). In business, employees share knowledge with other employees to achieve a common goal, which often cannot be achieved on their own. Nooshinfard and Nemati-Anaraki, (2014) describe knowledge sharing as a means and a process by which individuals and groups communicate their knowledge subconsciously or deliberately to their mutual benefit. The exchange of knowledge can also occur on an organisational level. When organisations cooperate, employees of those organisations often share organisational knowledge. In this thesis, inter-organisational knowledge sharing is characterised by the exchange of knowledge outside organisational boundaries. Therefore, the following definition by Appleyard (as cited by Loebbecke et al., 2016) is used: inter-organisational knowledge sharing is defined as ‘the transfer of useful know-how or information across company lines’ (p. 4).

Organisations become increasingly aware of the importance of knowledge management. More and more organisations are working on managing knowledge from within by assuring knowledge of employees is shared with colleagues and well-documented in their knowledge management systems. Knowledge in these systems is made accessible for employees. In the last decade, knowledge sharing is found to increase competitive advantages and critical for long-term sustainability and success of organisations (Ipe, 2016). Benefits of sharing knowledge include reducing redundant work and cost of interventions, creating new knowledge with help of experts, enthusing intellectual people and solving problems in a primary stage which saves time, money and manpower (Nooshinfard & Nemati-Anaraki, 2014). Moreover, knowledge sharing increases problem solving capacity. Providing access to organisational knowledge and sharing knowledge with colleagues enhances the cognitive capacity of individuals and teams, which enables them to solve more complex problems (Mumford et al., 1991). A study by Carmeli et al. (2013) has found that external knowledge sharing is almost as influential on creative problem-solving capabilities as internal knowledge sharing.

There is growing evidence that knowledge sharing across organisations contributes to an organisation’s competitiveness, innovativeness and product development performance (Cummings, 2004; Easterby-Smith et al., 2008; Lawson et al., 2009; Loebbecke et al., 2016). The performance benefits are even stronger for structurally diverse groups, as members of a diverse work group are more likely to expose the group to a unique source of knowledge (Cummings, 2004). However, sharing knowledge on an organisational level brings extra complexity due to the versatility in boundaries, cultures and processes involved and the inter-organisational social mechanisms that facilitate the knowledge sharing process (Easterby-Smith et al., 2008; Lawson et al., 2009). As a result, organisations are looking for ways to understand the inter-organisational knowledge sharing process. Insight into antecedents of inter-organisational knowledge sharing help organisations to better understand the

organisational sharing process, which led to an increase in research focussing on antecedents (van Wijk et al., 2008). Due to the burgeoning amount of research on organisational knowledge transfer, van Wijk et al. (2008) performed a meta-analysis on extant literature, thereby distinguishing between intra- and inter-organisational knowledge transfer. Because this meta-analysis provides insightful information on antecedents that precede inter-organisational knowledge sharing process, it is used here as a baseline for the theoretical framework of this thesis. In the next section, antecedents of inter-organisational knowledge sharing are discussed.

3.2 Antecedents of inter-organisational knowledge sharing

The inter-organisational knowledge sharing process is a complex process influenced by various factors. Some of these factors are considered antecedents as they precede the external knowledge sharing process. In their meta-analysis, van Wijk et al. (2008) only used antecedents that have been studied extensively across multiple studies, ensuring the antecedents are deemed relevant. These antecedents include the knowledge being shared, specific organisational characteristics, and social relations and networks of organisations. Inter-organisational trust was found to be among the most important network-level driver for organisational knowledge sharing together with absorptive capacity (i.e., the capacity of organisations to absorb knowledge into their organisation), and leadership behaviour and (top) management support (Carmeli et al., 2013; van Wijk et al., 2008). Leadership behaviour and management support are found to be highly correlated with inter-organisational knowledge sharing and the attitude toward knowledge sharing within organisations (Aulawi et al., 2009; Cabrera & Cabrera, 2005; Carmeli et al., 2013; Lin, 2007), but are expected to be less influential on organisational-level decisions to participate on a knowledge sharing platform. Hence, here the focus will be on inter-organisational trust and absorptive capacity as antecedents of inter-organisational knowledge sharing, which will now be discussed in more detail.

3.2.1 Inter-organisational Trust

Organisations that participate in inter-organisational knowledge sharing need a certain security that the knowledge they share will not be exploited. Trust can create that sense of security. Trust reflects the belief that a partner's word or promise is reliable and that a partner will fulfil its obligations in the relationship (Inkpen, 2000). Inter-organisational trust as a social construct is found to have a strong positive effect on inter-organisational knowledge sharing (Chen et al., 2014; Cheng et al., 2008; Easterby-Smith et al., 2008; van Wijk et al., 2008), as well as the attitude towards and intention to share knowledge (Aulawi et al., 2009; Seyyedehe et al., 2009). In a literature review on inter-organisational trust, Seppänen et al. (2007) concluded that trust increases reliability, reduces perception of risk, deters opportunistic behaviour and reduces the use and need of formal contracts. Researchers have investigated the influence of numerous relational and social factors on inter-organisational trust within the context of knowledge sharing. Factors that have been identified to influence trust amongst organisations are included in this thesis, as they provide additional insight on how trust can be established between organisations.

Relation capital

The perception of trust is determined by the relationship between organisations. The term relation capital combines the social connections and strength of these organisational connections. Relation capital includes relational factors like number of relations, network position, social ties strength and relational embeddedness. Higher relation capital can benefit inter-organisational knowledge sharing as the number of relations, a centralised network position and strength of social ties are found to increase the inter-organisational knowledge sharing (van Wijk et al., 2008). The same factors are found to have a strong effect on inter-organisational trust (Chen et al., 2014; Easterby-Smith et al., 2008). Considering

the strong relation between relation capital, trust and inter-organisational knowledge sharing the mediating effect of trust is strengthened.

Opportunistic behaviour

Organisations that deceit to seek self-interest are characterised as opportunistic. Organisations that express opportunistic behaviour often do not keep up to their word and promises. Naturally, opportunistic behaviour contradicts the definition of trust as mentioned earlier. In inter-organisational relationships, a partner is said to be opportunistic if its behaviours are inconsistent with some prior contact or agreement (Wathne and Heide, 2000 as cited by Cheng et al., 2008). As a result, Cheng et al. (2008) found a strong negative relation between opportunistic behaviour and inter-organisational trust. Opportunistic behaviour is also found to have a direct negative affect on knowledge sharing between organisations, as organisations may use methods to protect knowledge as a result of opportunistic behaviour that impedes knowledge sharing (Cheng et al., 2008).

Participation and communication

Participation and the decision to participate in inter-organisational knowledge sharing contributes to the notion of commitment by organisations. In turn this commitment of organisations shown their willingness to fulfil their promise. The more organisations actively participate the more trust is gained between organisations (Cheng et al., 2008). By engaging in communication between participating organisations, a mutual understanding can be facilitated (Cheng et al., 2008). Communication in itself can create transparency, help reduce uncertainties and clarify expectations. Being transparent towards one another about intentions with inter-organisational knowledge sharing and participation on the platform provides organisations with openness and better assessment of opportunistic behaviour, which ultimately provides more reliability. All in all, participation and communication are found to have a positive effect on inter-organisational trust (Cheng et al., 2008).

Power and dependency

Power in relationships refers to the control one organisations has over another and thus can evoke change in behaviour. Being dependent on other organisations provides them with control and bargaining position. Dependency therefore often refers to the distribution of power between organisations. In order to engage in inter-organisational knowledge sharing the power relation between organisations must be balanced (Cheng et al., 2008; Easterby-Smith et al., 2008; Seyyedeh et al., 2009). Results from literature show that dependency and power imbalance have a negative effect (Cheng et al., 2008; Seyyedeh et al., 2009). Organisations that perceive less restrictions from others and thus perceive more independency also have higher intention to share (Seyyedeh et al., 2009).

Prior experiences

Seyyedeh et al. (2009) found that positive prior experiences in knowledge sharing relationships contribute to inter-organisational trust. Positive experience will also reduce uncertainty and the risk of opportunistic behaviour from organisation partners in sharing knowledge (Seyyedeh et al., 2009). Positive experiences with partner relations and knowledge sharing can provide a baseline of trust (Inkpen, 2000). By sharing positive experiences with relations in a network an initial perception of trust can be created. However, no research has been found that discusses the influence of negative prior experiences on inter-organisational trust or knowledge sharing.

Shared vision and goals

Organisations with similar goals and vision tend to have positive expectations with regard to knowledge sharing (Chen et al., 2014). According to van Wijk et al. (2008) a shared vision promotes mutual understanding and provide a crucial bonding mechanism that helps to integrate knowledge. With regard to trust, organisations seem to show more commitment towards organisations with similar

believes, goals and values (Cheng et al., 2008; Seyyedeh et al., 2009). Not all organisations in a network have similar believes, yet by embracing shared goals and vision it is found that a network can develop inter-organisational trust (Chen et al., 2014; Seyyedeh et al., 2009). However, Cheng et al. (2008) did not conclude shared values to have a significant effect on trust nor inter-organisational knowledge sharing. These findings suggest that it can be beneficial in a network structure to determine a vision and set goals which are shared by participating organisations.

3.2.2 Absorptive capacity

The capability to value, assimilate and apply new knowledge into the organisation is referred to as absorptive capacity (Cohen & Levinthal, 1990). Literature has concluded that an organisation's ability to absorb externally obtained knowledge within the organisation facilitates inter-organisational knowledge sharing and contributes to the amount of knowledge learned in the process (Easterby-Smith et al., 2008; Seyyedeh et al., 2009; van Wijk et al., 2008). As knowledge is often shared in both directions, the role of recipient and donor are often changing. Absorptive capacity is also found to have effect on an organisation's ability to express and share knowledge, as the best teachers are often the best learners (Easterby-Smith et al., 2008; Seyyedeh et al., 2009). Therefore, absorptive capacity as an organisational characteristic is considered crucial for successful inter-organisational knowledge sharing (van Wijk et al., 2008).

Knowledge attributes

The necessity of absorptive capacity in the inter-organisational knowledge sharing process depends on the attributes of the knowledge being shared. Knowledge attributes or the nature of the knowledge being shared has considerable influence on the inter-organisational knowledge sharing process. Attributes of knowledge account for ambiguity, tacitness and complexity. Where ambiguity refers to the inherent and irreducible uncertainty as to what the underlying knowledge precisely means (van Wijk et al., 2008). Tacitness of knowledge describes how explicit knowledge can be formalised. More explicit knowledge therefor is easier to quantify, measure and written down in, for example manuals, documents or procedures, while more tacit knowledge is embedded in people's minds as experiences, skills, ideas and know-how (Seyyedeh et al., 2009). Literature has found that these knowledge attributes have a negative effect on organisational knowledge transfer (Easterby-Smith et al., 2008; Seyyedeh et al., 2009; van Wijk et al., 2008). Thus, the more tacit, complex or ambiguous the knowledge being transferred is, the harder it is to share and acquisition the knowledge. Moreover, there is a reciprocal relation between the attributes of knowledge being shared and absorptive capacity of an organisation. Van Wijk et al. (2008) theorises that the difficulties that organisations experiences with the acquisition of knowledge are moderated by its absorptive capacity and the attributes of the knowledge being shared. For example, compared to organisations with high absorptive capacity, those with low absorptive capacity will experience more difficulties with adopting moderately ambiguous knowledge. In line with these findings, Loebbecke et al. (2016) suggested organisations could develop capabilities and routines to handle complex knowledge from outside their organisational boundaries.

Self-efficacy

The knowledge sharing process of organisations comprises of individuals sharing knowledge with others, either inside of outside the organisation. These employees influence the process of collecting and donating knowledge through their attitude, intention and willingness to share knowledge. Motivating employees to engage in knowledge sharing activities is often allotted to management, while it has been found that self-efficacy of employees has a strong positive effect on their willingness to donate and collect knowledge and improves their intention to share and use that knowledge (Aulawi et al., 2009; Lin, 2007). Self-efficacy is the self-confidence of employees in their ability to perform certain actions and achieve a specific level of capability to perform that action (Aulawi et al., 2009; Lin, 2007). Knowledge self-efficacy can help motivate employees to share knowledge and increases the likelihood

to achieve desired levels of absorptive capacity. Self-efficacy often manifests in employees who believe their knowledge can contribute to organisational performance or problem solving (Lin, 2007).

Prior experiences

Absorptive capacity can be improved by prior experiences with knowledge sharing. Inkpen (2000) found that prior history and experience with an alliance partner will stimulate effective learning efforts because prior experience helps organisations recognize potentially useful knowledge and reduces the barriers between the partners. Not only will employees learn from the experience of participating and practicing knowledge sharing, but employees who had positive experiences with knowledge sharing also perceive better self-judgement in their ability to share and absorb knowledge (Easterby-Smith et al., 2008). The increase in self-efficacy in turn improve absorptive capacity as discussed prior.

Internal capabilities

The term absorptive capacity was firstly introduced by Cohen and Levinthal (1990) and later has been reconceptualised and extended by Zahra and George (2002). They distinguished between potential absorptive capacity and realised absorptive capacity and identified four capabilities within absorptive capacity that are necessary for successful knowledge absorption. Where the former focusses on identifying potential useful knowledge (acquisition and assimilation) and the latter on incorporating and applying this new knowledge within the organisation (transformation and exploitation). The four capabilities are illustrated in Figure 2 and are defined as follows (Zahra & George, 2002);

- Acquisition, capability of organisations to identify and acquire external knowledge critical for its operations;
- Assimilation, routines and processes that allow organisations to analyse, process, interpret, and understand the information obtained from external sources;
- Transformation, capability of organisations to develop and refine the routines that facilitate combining existing knowledge and the newly acquired and assimilated knowledge;
- Exploitation, capability of organisations to refine, extend, and leverage existing competencies or to create new ones by incorporating acquired and transformed knowledge into its operations.

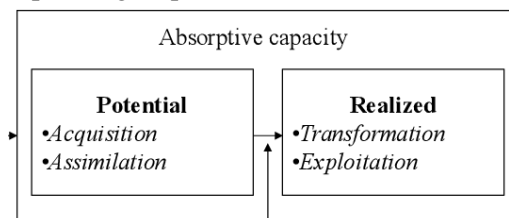


Figure 2: Capabilities of absorptive capacity as taken from the reconceptualised model by Zahra & George (2002)

Jansen et al. (2005) hypothesised that these capabilities are influenced by organisational antecedents and found that coordinational antecedents such as cross functional work teams, participation in decision making and job rotation have a positive effect on the potential absorptive capacity, while antecedents such as formalisation, routinisation and socialisation have a positive influence on realised absorptive capacity. Moreover, routinisation is found to have a negative effect on an organisations ability to identify potential new knowledge (Jansen et al., 2005). These finding indicate that the different stages of absorptive capacity can be approached differently and could explain why organisations might experience difficulties with specific dimensions of absorbing new knowledge into their organisation. For example, an organisation might be well capable of identifying and acquiring new knowledge due to high potential capabilities but due to lacking realised capabilities are not able to exploit the newly acquired knowledge.

All in all, the theoretical framework provides insight into inter-organisational trust and absorptive capacity as important antecedent and factors that influence inter-organisational knowledge sharing. Without inter-organisational trust organisations do not have the social security that is consider as a

baseline for knowledge sharing between organisations. Likewise, without absorptive capacity organisations can struggle to share knowledge in a comprehensible manner and incorporate externally shared knowledge into their organisations. Factors that influence inter-organisational trust are relation capital, opportunistic behaviour, participation and communication, power and dependency, shared vision and goals and prior experience. Absorptive capacity distinguishes between four separate capabilities; acquisition, assimilation, transformation and exploitation. The required absorptive capacity depends on the knowledge being shared. An organisation's absorptive capacity is influenced by prior experiences and the self-efficacy of employees regarding knowledge sharing, although the required absorptive capacity also depends on the attributes of the knowledge being shared. An overview of these factors and how they relate to the inter-organisational trust and absorptive capacity is shown in Figure 3 here below.

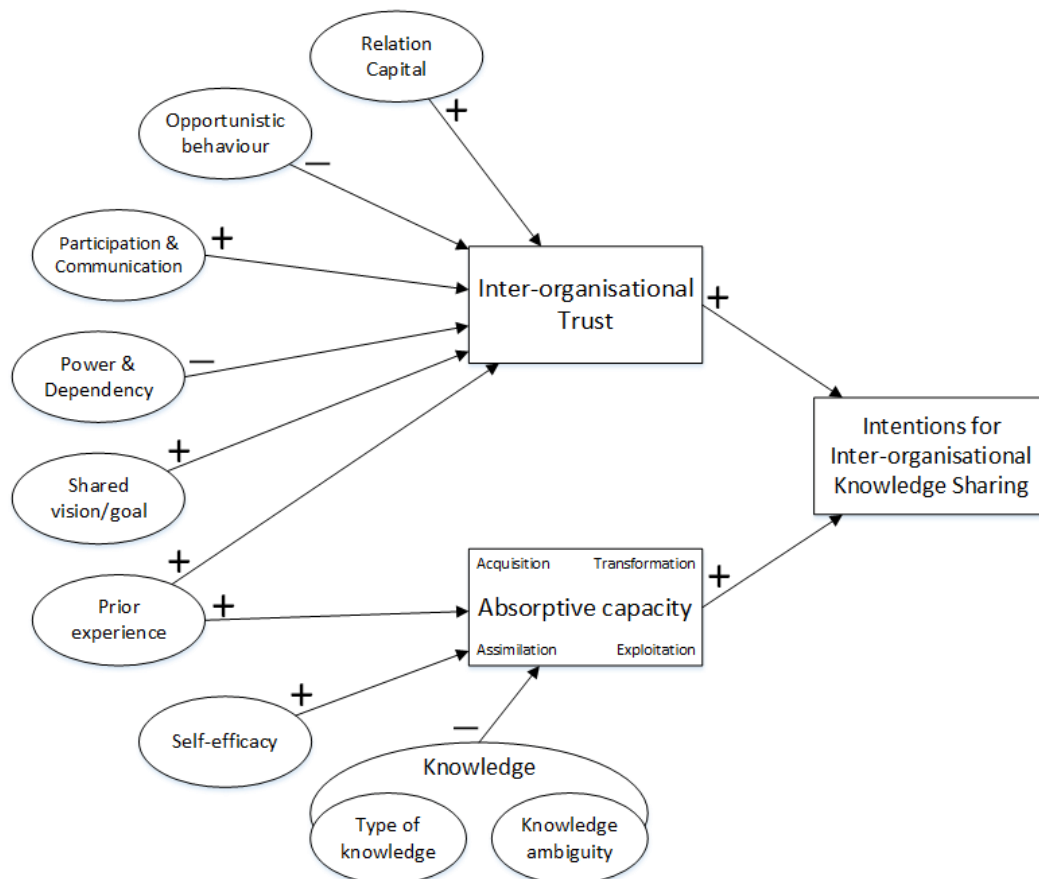


Figure 3: Overview of factors and antecedents and their relation to the intentions for inter-organisational knowledge sharing

3.3 Research model

In this section the relation between the theoretical framework and the research of this thesis is explained. The theoretical framework provides insight into important antecedents and factors that influence inter-organisational knowledge sharing. Due to their importance, these antecedents and factors are possible aspects that organisations may consider when deciding to practice inter-organisational knowledge sharing and participate on a knowledge sharing platform. Vice versa, the absence of either inter-organisational trust or absorptive capacity could pose risks for organisations participating on the platform. The research questions in this thesis are proposed to gain insight into the considerations, benefits and risks organisations perceive with participation on the platform, which may include, but may also go beyond the factors found in literature (i.e., inter-organisational trust and absorptive capacity). Insights into the considerations, benefits and risks organisations perceive and how their perception is

influenced by theoretical factors provide a baseline for the KSC to foster the practice of inter-organisational knowledge sharing and participation on the platform. While extant research has shown long-term benefits of inter-organisational knowledge like innovation and problem-solving performance, it is expected that organisations have more short-term mindsets with the KSC-platform. Therefore, it is expected that organisations perceive any form of knowledge and relationship expansion as benefits of the platform. Moreover, it is expected that risks associated with inter-organisational knowledge sharing or the KSC-platform are related to one or multiple of the deterministic factors of inter-organisational trust and absorptive capacity discussed in this theoretical framework. The research model shown in Figure 4 shows a graphical representation of the relations between research questions and the theory discussed in the previous section. For clarification purposes the sub questions of this thesis are reiterated there below.

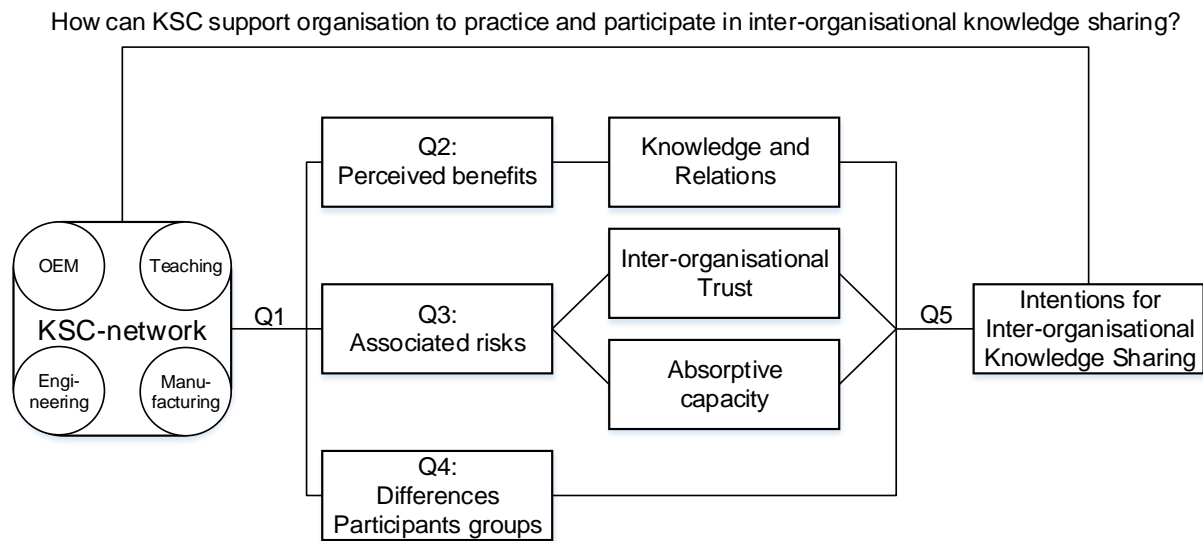


Figure 4: Thesis research model

- Q1. What considerations determine the stance of organisations in the high-tech industry towards practicing and participating in inter-organisational knowledge sharing?
- Q2. Which benefits do organisations perceive in inter-organisational knowledge sharing and what do they hope to gain from the KSC-platform?
- Q3. Which risks do organisations associate with inter-organisational knowledge sharing and what restricts them from participating in the KSC-platform?
- Q4. How do the four participant groups differ with regards to perceived benefits and risks for participating in the KSC-platform?
- Q5. How can KSC exploit benefits and mitigate the risks that organisations perceive with inter-organisational knowledge sharing to foster the practice of inter-organisational knowledge sharing on their platform?

4. Methodology

In this chapter the methodology of this research is described. First is explained which research approach is chosen and the data collection method is discussed. Then, the research sample and the modification on the dataset are explained. Concluding this chapter with the analysis approach.

4.1 Research approach and data collection

Qualitative methods are useful to answer questions about experience, meaning and perspective (Hammarberg et al., 2016). Therefore, the qualitative research method was chosen to gain insight into the situation specific for KSC and the views of organisations participating on the KSC-platform. In this thesis, the aim of the qualitative research approach was to collect an extensive and in-depth data on the consideration that organisations have with regards to inter-organisational knowledge sharing. Field research allows to gather data specific to the situation of KSC. To gain these insights, in-depth semi-structured interviews were conducted with organisational representatives on key management positions to collect qualitative and rich data on the considerations of an organisations with regards to KSC-platform. Respondents for these interviews are carefully selected as key informants that provided reliable information on the view an organisation e.g., CEOs, managing directors or management board members (Hammarberg et al., 2016; Seppänen et al., 2007). Top management positions are deliberately chosen due to their influence on the decisions to participate in the KSC-platform and the first-hand experience with the considerations that go into this decision.

Interview topics are based on the important antecedents and influential factors as described in the theoretical framework. These antecedents were converted into items for the interviews with specific questions related to potential benefits or risks of inter-organisational knowledge sharing. This resulted in the following items:

- General: Opinion and experience on knowledge sharing, benefits and risks;
- Absorptive capacity: knowledge, self-efficacy, knowledge ambiguity and type of knowledge;
- Trust: prior experiences, participation and communication, opportunistic behaviour, relation capital, power and dependency, shared vision and goals;
- Ending: Important criteria and additional topics.

The full interview schedule is attached in Appendix I. For the interview, a semi-structured approach was chosen to ask additional questions to gain a better understanding of the view of the respondent or the topic at hand and leave room for the respondent to freely state their view on the potential benefits or risks of inter-organisational knowledge sharing. The latter is represented in the section ‘General’ in the interview schedule. When a respondent addressed a certain items, risks or benefits in the ‘General’ section, these items were questioned first. This means that during an interview, the researcher jumped back and forward on the interview schedule according to the topic or item raised by the respondent. After all items initially addressed by the respondent are questioned, the researcher continued with the other items to ensure all items and questions were discussed. Interviews were concluded with an item on necessary criteria for participation on the KSC-platform and other topics that were deemed important by the interviewee. All interviews were conducted in the period 28 September 2020 till 21 October 2020 and on average each interview took about one hour.

Furthermore, the semi-structured interviews were done in Dutch since the study is conducted in a Dutch region. Dutch was preferred over English because respondents are more talkative in their native language. It was considered that using a second language may set a barrier and lower willingness to cooperate for participants. For reporting purposes, the coding of the interviews was done in English.

As reliability and validity of qualitative research is often at question, the researcher used the following strategies to ensure the credibility of the qualitative research (Noble & Smith, 2015):

- To avoid biasing, the interview questions were sent to the interviewee prior to the interview so it was clear for the interviewee which questions were going to be asked and what type of data was gathered;
- During the interview, the interviewer ensured the answers were provided by the interviewee and the interviewer refrained from filling in answers or influencing the interviewee's response;
- During the interview, the researcher confirmed answers provided by the interviewee were related to one or multiple underlying items;
- Interviews were done face to face or via videoconference and were being recorded for later review and reference;
- During the interview, the researcher validated with the interviewee that the insights gathered from the interview were correct and not misinterpreted.

4.2 Research sample

In total 18 interviews were conducted with 20 respondents of organisations that participated in the research. To raise these respondents, an informative flyer was created and sent to organisation within the Dutch high-tech industry. Organisations that were approached for participation in this research are organisations in the high-tech industry which are interested in the activities of KSC or are considering to join and participate in the KSC-platform. These organisations are potential early adopters of the platform and thus important for creating the platform. While this makes the data sample specific to the KSC scenario, it could limit generalisation of this research. More on the limitations of this study in the discussion of this thesis.











KSC has identified and classified four participant groups (Teaching institutes, Manufacturing companies, Engineering companies, Equipment manufacturers). This research aimed to have representative data for each of these groups, therefore participants are selected and based on one of the four groups. To be able to generalise finding to the entire current or future population of KSC, the dataset contains enough participating organisations in each of the groups. An estimation is used on the ratio between groups. The population is estimated to consists of:

- 20% Original Equipment Manufacturers;
- 20% Engineering organisations;
- 45% Manufacturing organisations;
- 15% Teaching institutes.

Conform this estimation 25 organisations have been approached, of which 18 have participated in the research. These 18 organisations are listed in Table 1. The number of organisations that have participated in the research is representative to the estimated population. The classification of each of the organisations can be found in the list of participating organisations in Table 1. The groups are represented by the following amounts:

- 3 - Original Equipment Manufacturers;
- 3 - Engineering organisations;
- 9 - Manufacturing organisations;
- 3 - Teaching institutes.

Table 1: List of participating organisations.

Logo	Organisation	Function	Group
	ASML	CEO	OEM
	ATG Europe	Business Unit manager	Engineering
	Cematec	Managing Director	Engineering
	Craft education	CEO	Teaching
	Formatec Ceramics	General Manager	Manufacturing
	Metaalunie	Regional secretary & National Program manager	Manufacturing
	Metafas	Managing Director	Manufacturing
	Mikrocentrum	Managing Director	Teaching
	Mitutoyo	Managing Director	OEM
	oZone	Managing Director	Teaching
	Rabobank NL	Sector specialist Manufacturing Industry	Manufacturing
	Sioux Technologies	Department Manager Mechanics	Engineering
	Ter Hoek	Managing Director & Hr Manager	Manufacturing
	ThermoFisher	Competence Manager	OEM
	VDL group	CEO VDL ETG	Manufacturing
	WBM staalservice	Managing Director	Manufacturing
	West End	General Manager	Manufacturing
	Wilting Components	CCO	Manufacturing

4.3 Data handling

During the analyses of the data, it became apparent that representatives of Metaalunie and Rabobank NL, which are organisations that represent the entire manufacturing industry, mainly projected benefits that manufacturing organisations should see in the KSC-platform and not the benefits they actually perceive. Therefore, the choice was made to exclude these interviews from the analyses with regard to the benefits of the platform, because they might skew the results. This decision does not affect the data sample with regard to the risks and restrictions, as they do project the view of the manufacturing industry.

The organisations oZone is included in this research as a participant in the teaching institute group. Yet, during the interview it appeared that oZone is not a participant but an infrastructure upon which the platform can be build. Therefore, oZone does not perceive benefits or associate risks with participation on the platform. Thus, oZone is excluded from data sample with regard to the benefits and risks of the platform. However, the interview with a representee of oZone did provide useful insights. Therefore, the interview is used more as a consult than a participant and the data is used in the analyse regarding inter-organisational trust and absorptive capacity.

4.4 Analysis approach

A thematic analysis method was used to analyse the data. Thematic analysis is widely used to analyse qualitative data (Braun et al., 2006) and focusses on identifying common themes throughout the data. Braun et al. (2006) provide clear guidelines on how to perform a thematic analysis. They distinguish between inductive and theoretical thematic analysis, where in the former themes are determined by the data and in the latter themes are predetermined based on literature and expectations. In this thesis, a theoretical approach was chosen based on the theoretical framework, yet there was room to induce additional themes if they are presented by the data. In their guideline, Braun et al. (2006) provide structured six-step process that lets you familiarise with the data, generate codes, identify themes, review themes, define and name themes and write up the analysis. This six-step process is used as a baseline in the analysis of this thesis.

The actual analysis went through the following process steps. Familiarisation was done by transcribing the audio recordings of all interviews with respondents. Then, transcripts from by respondents were codified. Answers to interview questions were elaborative, often covered multiple items. Thus, one or multiple statements, and therefore multiple codes, were drawn from a single answer. Depending on the extent of their answers, one or multiple sentences and entire answers were included in the codes. In the third step, codes were allocated to preconceived themes. The themes were preconceived based on the interview items and the theoretical framework. Yet in the reviewing phase, it appeared these themes were not useful and did not represent the data well enough. Thus, the decision was made to revise the code book and allocate certain codes into four classifications. Answers and statements of respondents were classified into:

- Risks they perceive with external knowledge sharing and participation on the platform;
- Restrictions that withhold them from participation on the platform and sharing knowledge externally;
- Conditions they set for participation on the platform and inter-organisational knowledge sharing;
- Wishes for the platform.

Additionally, themes were added based on the code book and existing themes were adjusted to better represent the data. In the fifth phase, the themes were named. This resulted in the following list themes:

- Benefits of inter-organisational knowledge sharing and the KSC-platform;
- Risks of inter-organisational knowledge sharing;
- Restrictions for participation on the KSC-platform;
- Conditions for participation on the KSC-platform;
- Wishes for KSC-platform;
- What is trust and why is it important for inter-organisational knowledge sharing;
- Inter-organisational trust (only risks, restrictions, conditions and wishes),
 - Communication;
 - Opportunistic behaviour;
 - Power and dependency;
 - Trust and trust mechanisms;
 - Knowledge competence;
 - Shared vision;
 - Participation;
 - Security;
 - Relation capital;
 - Prior experiences;
- Current internal knowledge management;
- Capability to absorb knowledge from external sources;
- Absorptive capacity (only risks, restrictions, conditions and wishes),
 - Self-efficacy;
 - Type of knowledge;
 - Knowledge ambiguity;
- What is important to make the KSC-platform succeed.

It is specifically chosen to separate statements of respondent that express their point of view on inter-organisational trust and absorptive capacity and statements that indicate risks, restrictions, conditions and wishes with regard to inter-organisational trust and absorptive capacity. This way, data still provides insight on why trust and absorptive capacity is important for participants, while also providing insight into the relation between influential factors of trust and absorptive capacity and the risks, restrictions, conditions and wishes expressed by respondents. The code frequency, hence the number of statements, of each theme were used to get an indication of the importance of each theme. This has been especially useful in identifying which factors of trust are considered most important by respondents, but also provides insight into which benefits and risks are perceived the most.

5. Results

In this chapter the results of this research are presented. This chapter aims to answer the research questions posed in this thesis. In the following sections the results from the interviews and analysis of the data are presented. The following topics regarding the practice of inter-organisational knowledge sharing and participation on the platform are discussed: risk-benefit or cost benefit trade off, perceived benefits, risks and restrictions, inter-organisational trust, absorptive capacity and measures for mitigating risks and exploiting benefits.

5.1 Risk-benefit or Cost-benefit Trade off

During the interviews, respondents were asked to express the benefits and risks they perceive from participating on the KSC-platform. Which resulted that 16 of the 17 respondents reflected certain risks they associate with external knowledge sharing and participation on the platform, even when several stated they perceive no risks with participation. Alternatively, four respondents stated they tend to consider a cost-benefit trade-off over a risk-benefit point of view. They refer to cost, the potential gains and the uncertainty about the direction of the platform as they state it is still unclear what can be gained by participating and what investment is needed for participation. This is reflected by the following quote of a manager of an engineering organisation during the interview. He stated:

“The question is what will be retrieved from the platform, as cost can be significant. I do not see much risks but more a cost-benefit trade-off I Think the overall picture needs to be clarified. ... until now this is not clear to me and it is unclear which direction the platform is heading.” (Respondent 17.1)

In total, 9 out of 17 respondents have stated they will not participate on the platform when costs are too high or do not outweigh the benefits. Costs here refers to any monetary or non-monetary investment like fees, time and reputation. It became clear during the interviews that these decisions are ad-hoc and subjective, as the cost versus benefit trade-off will not be measured.

One respondent presented another point of view. He discussed the risks involved with participation in inter-organisational knowledge sharing and that these risks should be overcome, as the risk of going out of business is far greater. If an organisation does not address the risks or issues they face with inter-organisational knowledge sharing, they will lag behind and ultimately run out of business or become obsolete.

Thus, organisations that want to practice inter-organisational knowledge sharing and participate on the KSC-platform mainly consider risks versus benefits. Additionally, it should be noted that some organisations consider cost versus benefits, especially unclarity regarding costs. The benefits that representatives of organisations perceive are discussed in the next section, followed by a section on the risks representatives associate with inter-organisational knowledge sharing.

5.2 Perceived benefits

During the interview, representatives of organisations were asked which benefits they perceive or hope to gain from participating on the KSC-platform. In all, 15 interviewees mentioned various benefits, most of them mentioned multiple benefits, on average 3 á 4 benefits. A complete overview of all responses related to benefits, including the number of participants mentioning a specific benefit, is presented in Figure 5.

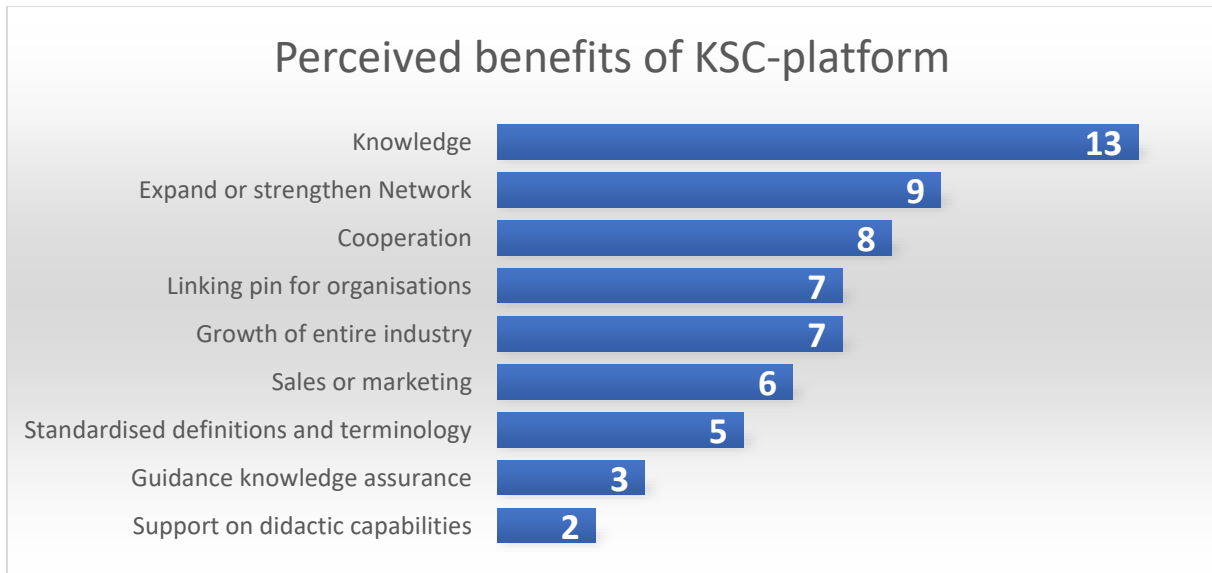


Figure 5: Perceived benefits of KSC-platform numbered by code frequency

From this overview, it is clear that respondents expect to see quite some benefits from participation on the platform. They mention that it may help them to gain knowledge, expand or strengthen their relation capital (expand or strengthen network, cooperation, linking pin) or obtain direct commercial value as they want to use the platform for marketing purposes or to increase sales. A less frequent but remarkable benefit which is perceived is the standardization of definitions and terminology across the high-tech industry. In the following sections, each of these perceived benefits in more detail and conclude this section with the different types of organisations associated with the KSC.

5.2.1 Knowledge

Interviewees referred to different types of knowledge they expected to gain from the KSC-platform. A type of knowledge that was often mentioned is knowledge about manufacturing technique and design constraints, which would enhance their competences in design for excellence (DfX). Design for excellence encompasses a variety of design methodologies; these may include (but are not limited to) design for manufacturability, cost, assembly, service, reliability and quality. As expected, this type of knowledge is deemed beneficial by engineering and OEM organisations. However, representatives of manufacturing organisations also mentioned knowledge about manufacturing technique or constraints as beneficial for their organisation. One of the reasons is that in order to use the complicated techniques that manufacturing organisations use to produce products, a product often needs pre-processing. This pre-processing is often done by other manufacturing organisations. Manufacturing organisations use knowledge about manufacturing techniques or constraints to find a pre-processing technique that suits their product or manufacturing techniques. For example, a managing director of a manufacturing organisation stated:

“We only use our techniques. Our pre-product needs pre-processing, then we do our specific processing.... Our production process is limited by tolerances. Therefore,

we can't use drilling. But we also have no idea which techniques could be used."
(Respondent 05.1)

Knowledge can also add directly to the business value of some organisations. Representatives of teaching organisations mentioned that knowledge availability on the KSC-platform offers the opportunity to generate more teaching modules and improve existing ones. For engineering organisations more knowledge can improve their capacity to solve difficult engineering problems, which in turn improves their competitiveness. They hope to gain more in-depth knowledge than is shared through conferences, including implicit knowledge such as experiences, expertise, lessons learned and knowhow. These types of knowledge are mentioned by representatives to be more useful for solving specific problems.

Representatives also state they hope to gain knowledge to improve their process or management techniques. This includes knowledge to work more efficient and effective, but also knowledge about how to share knowledge, use available knowledge on the platform and methods to e.g., read drawings. Representatives mentioned their organisation can gain a lot in term of project process and view this knowledge as important for a successful project. Compared to manufacturing knowledge, sharing process and management techniques are found to be less infringing on intellectual property of organisations. Some interviewees even suggested this type of knowledge should be the main focus of the platform to avoid infringement of IP. An example is the following statement by a general manager of a manufacturing organisation:

"I think if we would take a step back to processes and peripheral matters. There is absolutely potential ... based on the lessons learned, we can already reinforce each other a lot. Just purely looking at processes.... It is very important for a successful project." (Respondent 03.1)

Several representatives hope to gain knowledge which provides insight in market developments and expectations of customers as this helps organisations to remain relevant. This knowledge provides insight for organisation where the market is heading and thus can develop products or production techniques more in line with the market demand. This argument is mainly posed by representatives of small manufacturing organisations. Smaller organisations often do not have the resources to do a full investigation in market demands. For those small organisations, the KSC-platform can provide the necessary insights regarding the market. An example is posed by a general manager of a manufacturing organisation when asked for potential benefits of the platform.

"For us as a small organisation with a relatively small network, one of the most important elements is knowledge about the market and market development.... That's knowledge about how technology develops, what customers expect from us and technologies live up to those expectations.... But also, how we can contribute to this.... That knowledge is elemental for us small manufacturing organisations who are generally lagging behind." (Respondent 14.1)

Respondents mostly refer to customers when regarding expectations of the market. However, one respondent implemented this knowledge vice versa. Manufacturing organisations use tools and machinery to create products. The technical capabilities of tools and machinery also progress and develop. The respondent stated that information about these developments can help manufacturing organisations assess their possibilities in suiting future market demand.

From the above it becomes clear that there are types of knowledge that organisations perceive as beneficial, and that these differ per participating group. For example, manufacturing organisations are mainly interested in knowledge about the market, all participants groups expect teaching institutes are interested in manufacturing techniques and constrains and engineering organisations are also looking for more in-depth knowledge. Teaching institutes see the most value in knowledge on process and management technique and hands-on experiences and expertise. Figure 6 shows a complete overview of the number of representatives per participating groups discussed a specific type of knowledge.

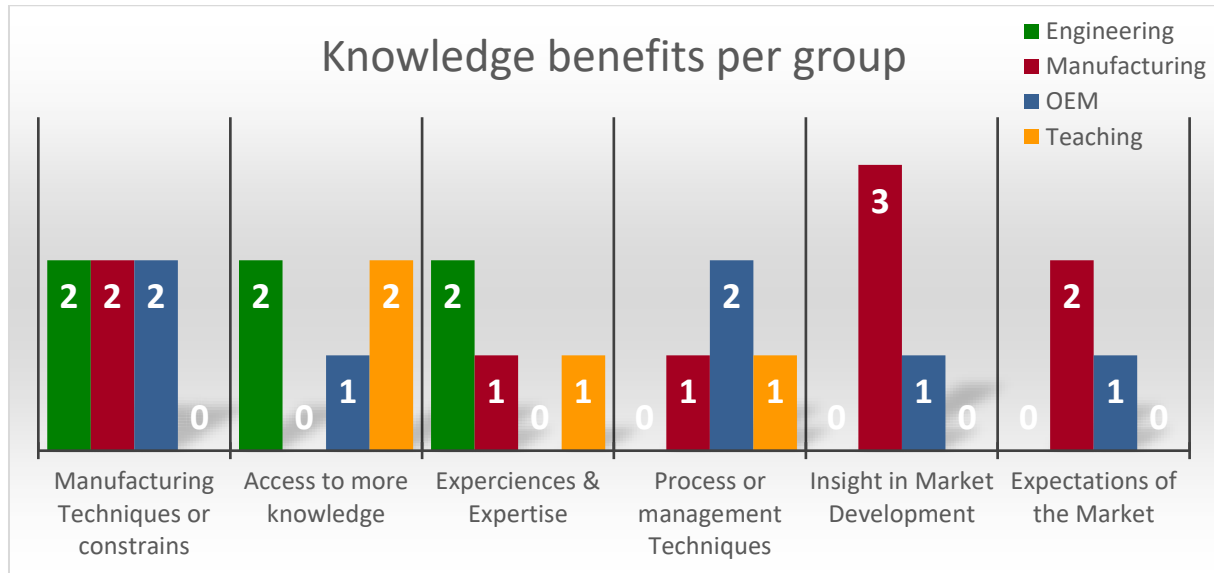


Figure 6: Perceived knowledge related benefits per group numbered by code frequency.

5.2.2 Relation capital

A benefit of the platform that is often mentioned is the network of organisations that is involved with the platform. Organisations look to expand or strengthen their relation capital through the platform. During the interviews, representatives of these organisations mentioned several different motives to expand their network, one of which was engaging with other organisations to cooperate. Many have stated that cooperation in the supply chain or high-tech industry provides them with increased innovative strength and problem-solving capabilities.

In order to cooperate, organisations have to be able to find each other. This is where the KSC-platform can have a significant role and added value according to participants. Eight representatives see the platform as a linking pin for organisations, a place for employees to go when they want to cooperate with organisations with specific knowledge competences. For example, a department manager of an engineering organisation stated:

“The platform is like a linking pin, think of an intermediary.... It’s like a connection point where all organisations adhere. When someone has an idea or problem for manufacturability, they look on the platform. They search for the right knowledge competence and find organisations which have those competences.” (Respondent 11.1)

Some representatives mentioned that the linking pin function of the platform makes it easier to connect with organisations. For those organisations the platform can provide an insight about which knowledge competences organisations have. For others, the platform can initiate and organise the process of bringing organisations together. Some representatives also expressed hope that the KSC-platform could help bridge the gap between lower tier suppliers and OEM organisations and let 3rd tier suppliers connect with high tier or OEM organisations. This became apparent from the following statements made by the managing director of a manufacturing organisation:

“It is very difficult for us as a small organisation to sit down with engineers and discuss possibilities for constructions or different designs.... KSC could be an opening to do this more.” (Respondent 07.1)

Another reasons to expand the network is to gain potential customers. Most organisations that participate on the platform are potential customers or suppliers in the high-tech industry. Building relations with other organisations on the platform can eventually lead to more customers, which in turn may result in more business for organisations. In the next subsection commercial motives of organisations to participate on the platform are discussed.

5.2.3 Commercial value

A question that most of the representatives of organisations pose themselves is ‘*what is in it for me?*’. Eventually all organisations want to participate on the platform to enhance their business. By participating on the platform, organisations hope to gain more business, gain a stronger competitive position or profile their product and production technique. This is indicated by the following statement of a managing director of a manufacturing organisation:

“We got the problem that the market doesn’t know what is possible and therefore do not construct in ways that we are capable to. It’s our job to show the market what we are capable to.... You want more exposure and eventually more business. Doesn’t have to be one on one. But yes, indirect sales.” (Respondent 09.1)

The six representatives that expressed a focus on the commercial benefits of the platform are mainly small manufacturing organisations. Smaller organisations often have less margin on their products and thus have less resources to spend on secondary activities like external knowledge sharing. Therefore, they need a short-term return of their investments. Using the platform for sales or marketing purposes may provide them with the short-term commercial value and allow smaller organisations to continue external knowledge sharing on the platform, as is clear from the following statement from a representative of a small manufacturing organisation:

“The question is: ‘What is in it for me?’.... We do not have unlimited capacity; it costs time and money.... We do not have the resources to endlessly continue sharing knowledge so there has to be quick returns.” (Respondent 09.1)

In Figure 7 an overview is shown of how many representatives per organisation group have mentioned commercial benefits of the platform. The numbers indicate that mainly manufacturing organisations perceive commercial benefits of the platform.

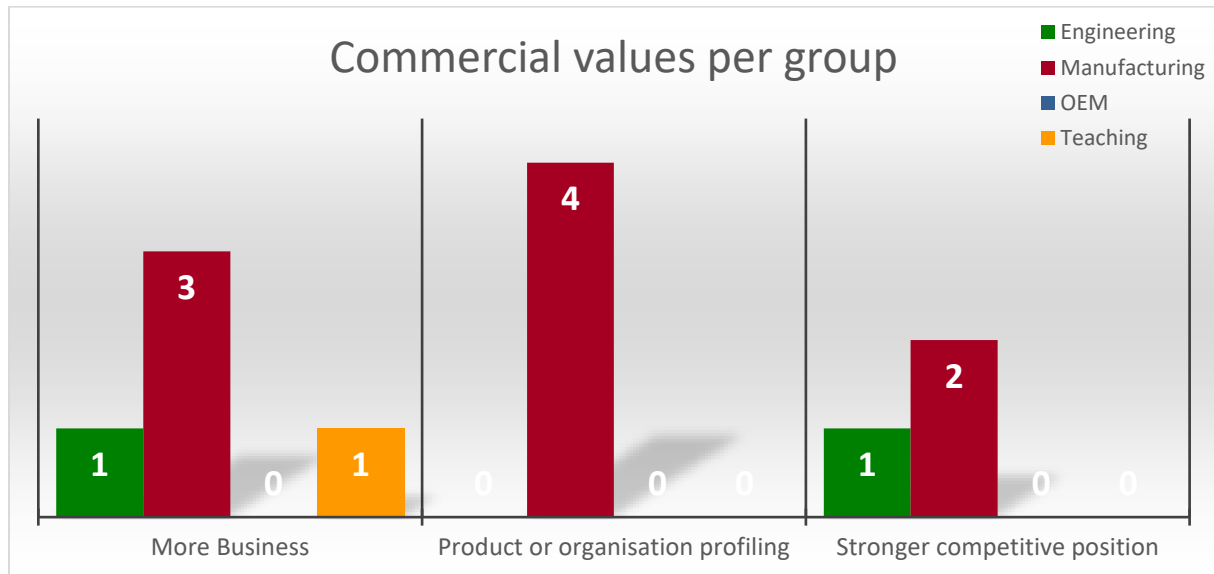


Figure 7: Types of commercial values perceived beneficial per participant group, numbered by frequency

5.2.4 Standardisation

An unexpected benefit that was mentioned several times was standardisation of definitions and terminology in the high-tech industry. Representatives of organisations mentioned not speaking the same language as a common problem when cooperating or sharing knowledge with other organisations. By not speaking the same language representatives mean that certain definitions or specification can be interpreted differently by various market. For example, a purity specification in the Semicon market can have different meaning than in the Automotive or Medical market. Other standardisations which were mentioned encompass similar or matching logistic systems and uniform methods in, for example, reading drawings or using 3D models. In total, standardising definitions and terminologies is mentioned by five interviewees. They perceive standardisation as beneficial because communication between organisations improves and thus makes it easier to cooperate. When asked for potential benefits during the interview the Managing director of an OEM stated:

“What would be very important for knowledge sharing is that everyone talks the same language. Currently there is much discrepancy in for instants, reading drawings or geometric dimensioning and tolerancing (GD&T). We would very much like for that to be standardised.” (Respondent 11.1)

However, it has not been mentioned how standardisation of definitions and terminology can be achieved, nor is stated that KSC should actively address this. It is assumed that definitions and terminology will become more uniform over time when organisations cooperate more.

To conclude this section on perceived benefits, differences in between types of organisations are discussed. The four different participant groups, Manufacturing organisations, Teaching institutes, OEM and Engineering organisations show much resemblance. However, the data shows that certain types of benefits are perceived more in certain organisation groups than in other groups. For instants, OEM organisations do not perceive the linking pin function of the platform as beneficial while the three other groups do. The OEM organisations are typically bigger and have greater relation capital than other organisations that participate on the platform and therefore do not need the linking pin function of the platform as much. Manufacturing organisations look for direct commercial value when participating on the platform. As discussed, smaller organisations tend to focus more on short-term commercial returns, the reason being that smaller organisations lack the budget to focus on secondary business activities like external knowledge sharing. In this research, the manufacturing group is largely represented by small organisations and thus show manufacturing organisations are more commercially oriented than other groups. Yet, it could be argued that organisation size is the inducer rather than type of organisation. Figure 8 shows an overview of all perceived benefits mentioned by representatives within certain participants groups.

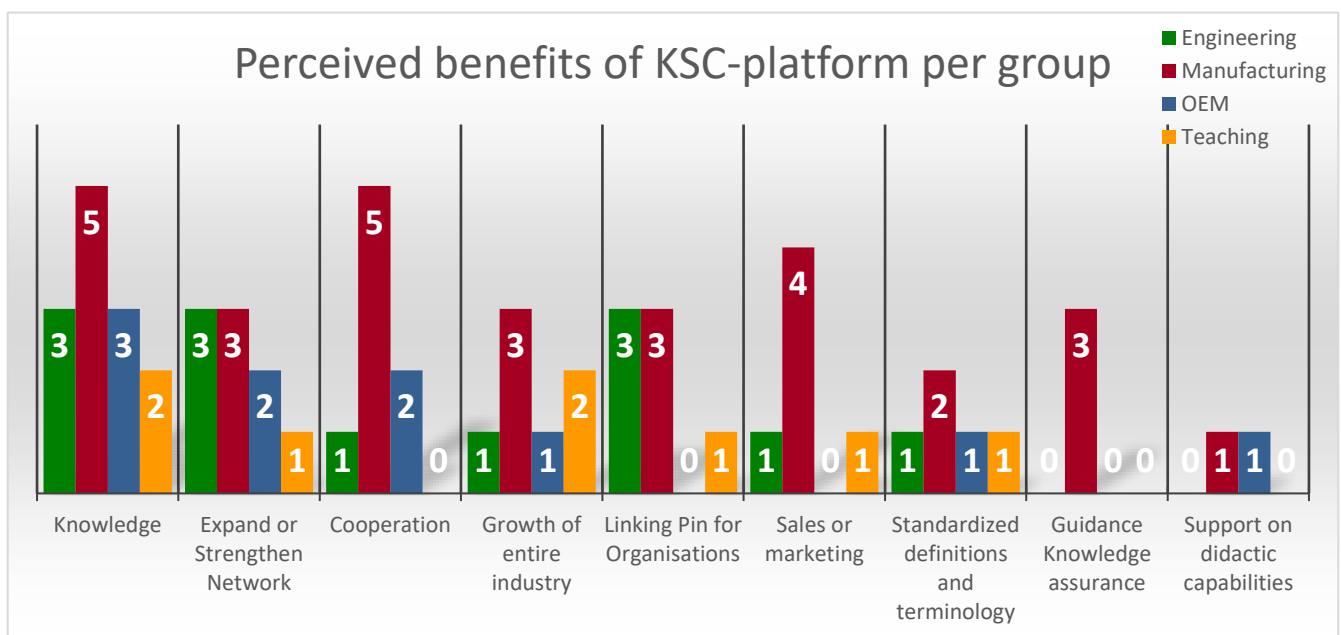


Figure 8: overview perceived benefits of KSC-platform per participant group.

About half of the representatives of manufacturing organisations hope the KSC-platform can provide guidance to enhance their internal knowledge assurance, as they mentioned that the internal knowledge assurance of their organisation is not up to standard and often do not know how to improve their knowledge assurance. Participation on the platform can motive these organisations to enhance their internal knowledge assurance and eventually use that knowledge to cooperate within the industry.

All in all, the different participants groups show much resemblance as most perceived benefits are evenly spread over all participating groups. However, certain types of benefits are perceived more in certain organisations groups than in other groups. What could cause this variation in perception is discussed further in the discussion chapter.

5.3 Risks and restrictions

Besides benefits, respondents have also been asked to reflect on the risks they perceive with inter-organisational knowledge sharing and what restricts them from actively participating on the KSC-platform. This resulted in a variety of different perceived risks. An overview of all risks is presented in Figure 9. The most frequently mentioned risks are discussed hereafter as well as common restrictions for participation.

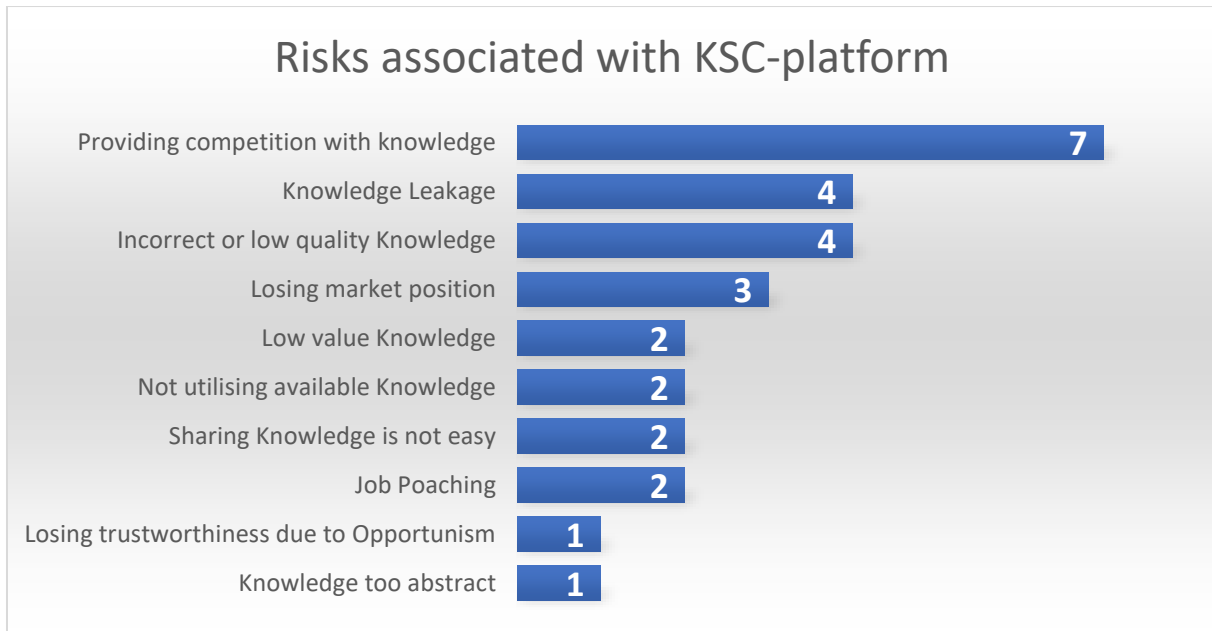


Figure 9: Perceived risks of KSC-platform numbered by code frequency

The risks to provide competition with essential knowledge is mentioned in seven interviews. Respondents perceive their knowledge to be distinctive from other organisations. By sharing this knowledge, they would inform other organisations and create more competition in their market. These respondents often express the fear of sharing their knowledge and losing their unique or exceptional market value or position as a result of it. Knowledge is considered as power. Representatives indicated another reason why respondents perceive providing the competition with knowledge as a risk: Sharing knowledge can help organisations identify the level of knowledge their competitors possess. This can cause organisations to withhold more advanced knowledge and approach competitors' clients. For example, a representative in the industry expressed the following during an interview:

“A significant risk is to lower cover. Competitors hear the position of organisations, keeps their own card to their chest because they are at a higher level. They approach clients directly with the argument that they are better. That's a risk for organisation that shared their knowledge. Therefore, organisations are wary to show the back of their tongue.” (Respondent 02.1)

Corresponding with this example, three representatives have expressed they perceive risk with losing market position due to knowledge sharing. This could occur when a client searches on the platform and finds another supplier which is better suited or more affordable or when a learning module of a teaching institution is replicated.

Knowledge leakage is another risk that is perceived by respondents. Knowledge leakage is closely related to the risks mentioned above. When mentioning knowledge leakage respondents mostly refer to knowledge exposure or that organisations unintentionally share knowledge that is not meant to be shared (e.g., intellectual property). Knowledge leakage can happen when for example employees share or

transfer tacit knowledge in inter-organisational projects and unintentionally share too much in the process. Ten respondents stated they will not participate on the platform when knowledge sharing entails their intellectual property knowledge. Organisations decide for themselves which knowledge is shareable knowledge and which knowledge is intellectual property, but this distinction is not always clear or easy to make.

Another aspect that is seen as a potential risk concerns knowledge itself. Respondents acknowledge a certain risk with the quality, correctness and actuality of knowledge. Knowledge lacking in these areas can cause misinformation and ultimately cause organisation to use of the platform less. For example; a client might contact a supplier based on the knowledge provided on the platform, but the suppliers may have stopped using that manufacturing technique; or a designer may draw up a prototype based on the manufacturing knowledge on the platform, yet the knowledge is incorrect and thus the design is not manufacturable. This can cause users on the platform to question the reliability of the knowledge presented on the platform and eventually stop using the platform.

Knowledge on the platform also needs a certain degree of value for organisations to keep participating on the platform. Whenever the knowledge on the platform is too common or obsolete, organisations have no incentive to look or search for solutions on the platform. This presents a risk for organisations that invest and do share valuable information, but do not have an opportunity to gain useful knowledge from the platform. Some representatives (3) stated they will not participate on the platform when there is no mutual knowledge exchange. On the other hand, a few respondents expressed that they risk not being able to utilise knowledge available on the platform, either because they do not have the capacity or because the knowledge on the platform is too abstract to obtain.

Representatives mentioned several other reasons that would restrict them from participating on the platform, besides the previously mentioned sharing of IP knowledge, high cost versus low benefits and lack of mutual knowledge exchange. Seven respondents explicitly stated they would stop sharing knowledge when they were to experience unfair sharing or opportunistic behaviour by other organisations. Several others expressed similar concerns without it restricting them from participating. In their opinion, all organisations need to contribute to the platform otherwise only a handful of organisations share knowledge, while all other organisations only retrieve knowledge on the platform. Such opportunistic behaviour would, at least for some organisations, be a reason to stop sharing knowledge. They demand a certain equal participation from all associated organisations in order to practice inter-organisational knowledge sharing. Opportunistic behaviour and unfair sharing imply the need for trust amongst the organisations on the platform, as two representatives actually explicitly stated. More on trust in section 5.4.

There is no indication that organisations from different participants groups perceive risks differently. Due to the variety and moderate frequency in codes regarding the risks associated with inter-organisational knowledge sharing, no notable and significant differences can be found.

5.4 Inter-organisational trust

All respondents have expressed in the interviews that trust is essential for inter-organisational knowledge sharing. Interviews with representatives were analysed based on the theoretical framework, in which the statements of respondents regarding inter-organisational trust and associated factors are combined. A coding overview regarding these statements is attached in Appendix II, which resulted in the overview shown in Figure 10. It is found that communication, opportunistic behaviour, power and dependency, knowledge competence and trust mechanisms are the most important factors for inter-organisational trust according to the organisations in the KSC-network. I will now address each of these in more detail.

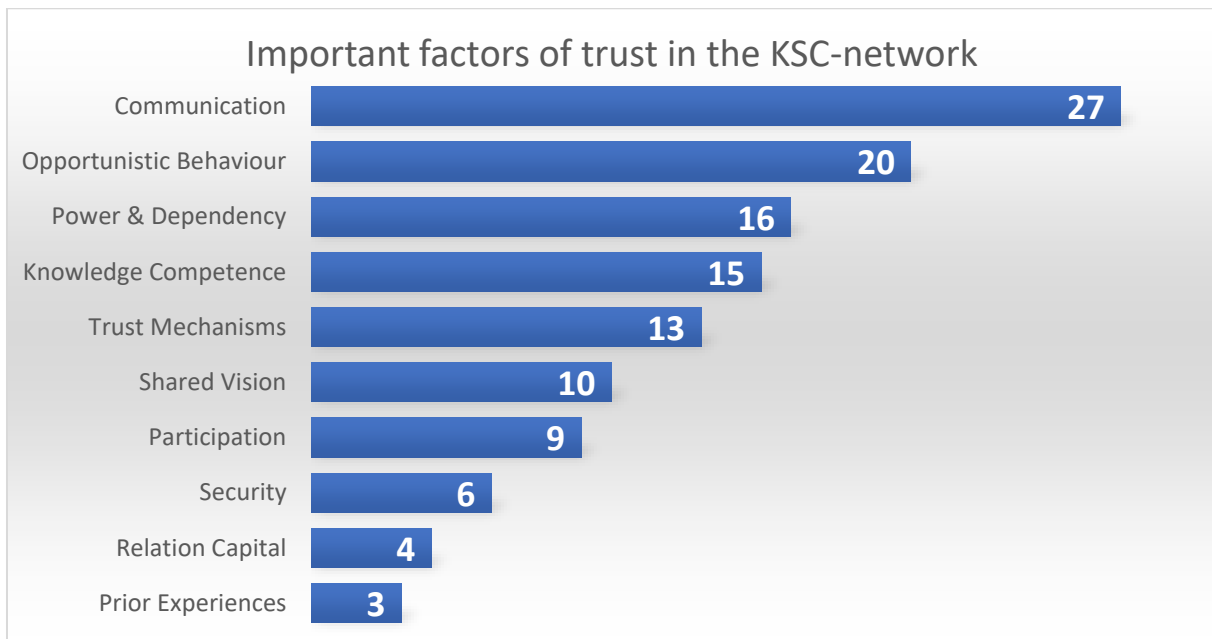


Figure 10: Important factors of inter-organisational trust in the KSC-network numbered by code frequency

5.4.1 Communication

Communication is seen as the most important deterministic factors of inter-organisational trust amongst respondents. All in all, 13 out of the 18 respondents state that there is uncertainty about the expectations and direction of the KSC-platform. These could be communicated more clearly. Representatives also plead for more resolute decision making from the KSC and communication about those choices. However, communication does not only regard the KSC, but also the organisations in the network. It is found that transparency and reliability are highly regard for communication between organisations, as nine respondents addressed the importance of transparency and five the importance of reliability.

Respondents indicated that participants can be transparent and reliable among themselves by communicating their expectations of others, intentions with the knowledge being shared and their own contribution to the platform. It should also be clear who contributed specific knowledge to the platform. Through this openness on the platform, a reliable self-regulating system can come forth, in which organisations reprimand each other when promises or expectations are not met. In general, representatives believe a participant is reliable when they say what they do, and do they say, so that expectations are met and opportunistic behaviour is avoided. One respondent stated the following about inter-organisational trust:

“Trust, it is a matter of competence, times reliability, times transparency. Multiply those three and you have a lot of trust. but you have to divide it by self-interest, if self-interest is high, trust goes down.... so, you have to be reliable. which means, say what you do and do what you say. You have to be transparent about where the knowledge is, where it comes from and what you do with it. If risks and rewards are involved, they must be shared fairly. Those are preconditions, otherwise it will not work.” (Respondent 13.1)

5.4.2 Opportunistic behaviour and fair sharing

Reliability and opportunistic behaviour are intertwined. Respondents indicated that when organisations operate out of self-interest on the platform, it will be detrimental for trust in the network. Respondents consider unfair sharing or an imbalance of the risk-reward distribution between organisations an indication of opportunistic behaviour. That is why equal and fair sharing is highly regarded and an important condition for trust, as shown in the quote hereabove. Eight representatives have expressed their wish organisations contribute knowledge without the intention to gain an advantage. In order to avoid opportunistic behaviours, representatives argue that sufficient volume and diversity is necessary on the platform, both in terms of knowledge areas, competition within these knowledge competences and in terms of various markets. Diversity ensures more accurate and broader knowledge disclosure and broader profiling, which in turn can create more reliability and fairer sharing. When asked ‘What is important to make the platform succeed?’ a representative of a teaching institutes responded;

“I think it is important that there are sufficient participants. Perhaps KSC has remained relatively limited to the core of organisations. It would be better if it weren’t ten organisations but a hundred. I think it is important to grow the knowledge on the platform through the number of participants.” (Respondent 04.1)

and a representative of an engineering organisation stated the following:

“Volume, it just is not possible with five organisations. it can also be a success if it has critical mass and enough organisations who value it and add information. ... Also, what in my opinion relates to opportunistic behaviour is diversity. So, not just volume but also direct competitors.... you should not have only one of every flavour because it will not work. So yes, that diversity is important.” (Respondent 11.1)

5.4.3 Power and dependency

The notion of fair sharing also entails equal balance in power and mutual dependency, as imbalance can shift dynamics between organisations and cause unfair sharing. Yet, when discussing power and dependency during the interviews, this usually related to the position of KSC on the platform and less to the power balance between the participating organisations. Eight respondents indicated that it is important that the platform is administered by a neutral independent party in order to maintain trust in the network and platform. Moreover, they emphasised that KSC should embrace this role by remaining independent from large organisations in the network and adopt a neutral position to pursue equality. Eight respondents expressed that they expect KSC to act as a mediator, bring businesses together and guide the process of cooperation and inter-organisational knowledge sharing. Examples are posed by the following two statements by a representees of an OEM and manufacturing industry:

“Eventually you end up with such a role, where KSC itself has to supervise the platform. So, if there is a need for this, it is important that KSC is and stays independent.” (Respondent 08.1)

“I see KSC much more as a process facilitator and an institute that manages the network than a centre where knowledge is created.... In this, it is incredibly important that KSC is independent and the platform is not dependent on a few OEMs.” (Respondent 02.2)

5.4.4 Knowledge competence

Besides the importance of fair sharing in relation to opportunistic behaviour, it is found that trust is also influenced by the knowledge competences being shared. Ten respondents expressed that trust is fostered when organisations participating on the platform have equivalent knowledge competences and knowledge is shared on an equivalent level. Inequality in shared knowledge competences can increase the risk that organisations will share unusable or outdated knowledge, which can result in one-sided knowledge transfer. Respondents indicated that the platform should strive for mutual knowledge exchange and continuity, whereby organisations are encouraged to share new knowledge and keep their knowledge up-to-date. This is closely related to opportunistic behaviour and the call of representative for a knowledge contribution mindset.

5.4.5 Trust mechanisms

Inter-organisational trust on the platform can be maintained and monitored by applying mechanisms. The main purpose of these mechanisms is to prevent infringement of mutual trust and can manifest themselves through agreements made by a community or, in this case, network of organisations. An example of explicit agreements are contractual agreements, laws or rules to govern and control the community. More implicit mechanisms can create standards and norms, which pressure members of a community to act like they are expected, especially when subject to social sanctions (Inkpen & Tsang, 2005). An example of such mechanism are structurally scheduled meetings between organisations where they express their expectations and intention, which ensures communication and transparency amongst organisations.

It has shown that the presents of such mechanisms provide respondents with inter-organisational trust. Ten respondents have expressed a need for interventions regarding transparency, reliability, fair sharing and knowledge competence to provide them with a sense of security. Meaning that active involvement and implementation of measures to assure trust also increase initial trust in the platform. Two examples are the following quotes, in which one respondent expressed the necessity of a mechanisms with regard to fair sharing and equal competence and the other with respect to inter-organisational trust:

“What you often see is that it is the same organisations that contribute knowledge and are open while others only reap the benefits and then it will simply fail. So, you need kind of mechanisms in which parties, on their own, bring added value and contribute knowledge.” (Respondent 02.2)

“You have to build trust; without trust nothing will happen. So, you have to substantiate trust, that’s not just taking their word for it.... there need to be norms, standards and rules in place. Without it, you will not create trust and it will just not work.... you really have to fill in those preconditions very well.” (Respondent 13.1)

Three respondents even stated their organisations will not participate on the platform when there are no mechanisms present to ensure trust between organisations. Some respondents provided suggestion for mechanisms to preserve trust on the platform, these are discussing in section 5.6. Never the less, respondents do acknowledge that compiling these mechanisms and safe guarding trust amongst organisations is not an easy task.

5.4.6 Other factors

In additions to the previously mentioned factors, several respondents indicated that that trust can be fostered when participating organisations share a common vision and other organisations (mainly influential frontrunners) actively participate on the platform. Sharing experiences and success stories can boost initial trust on the network. These success stories and lessons-learned also contribute to previous experiences with knowledge sharing, further enhancing inter-organisational trust. Most respondents who had negative experiences with inter-organisational knowledge sharing stated it does not diminish trust towards organisations participating on the platform, while those with positive experiences stated it has positively influenced their trust in the platform and their decision to participate.

5.5 Absorptive capacity

Knowledge sharing also involves the curation of available knowledge and making this available shared knowledge one's own. Literature has shown that ambiguity of knowledge can be a major obstacle in knowledge transfer. To avoid misinterpretations of ambiguous information and knowledge out of context, an organisation needs a certain knowledge absorptive capacity. About half of the representatives of organisations recognise that absorptive capacity is necessary to participate effectively in inter-organisational knowledge sharing. During the interview, specific questions were asked about any risks that representatives experience with absorbing knowledge from external sources and the ability to internalise shared knowledge in their organisation. However, most respondents indicated that the knowledge sharing platform is at a too early stage to provide adequate answers to these questions. In the eyes of the respondents, direction of the KSC-platform is still too unknown and there is still too little knowledge being shared on the platform to discuss the absorption and integration of knowledge into their organisation.

In this stage of the knowledge sharing platform, respondents experience little risk in absorbing knowledge. Representatives think mildly about absorption of knowledge into their organisation and state that possible lack of absorptive capacity will come to light when more complex knowledge is shared on the platform. The majority of respondents stated that their organisation is capable of absorbing knowledge or that they will take necessary action to account for a potential lack of absorptive capacity. In this, seven respondents stated their organisations is fully capable of absorbing externally shared knowledge and six respondents stated their organisation is somewhat capable. Of these six respondents, four indicated that they have less ability in identifying or acquiring potential useful knowledge, also known as potential absorptive capacity. The other two respondents stated they are able to identify knowledge but have less capacity to incorporate that knowledge into their organisation, also knowledge as realised absorptive capacity. An example of lacking acquisition absorptive capacity is posed by a manager when asked on their absorptive capacity:

"I think this is sometimes limited by one's experience or expertise. For example, because my experiences with turning and milling machines, I am able to interpret certain information more easily.... I notice that some engineers in our organisation lack hands-on experiences and therefore the ability to acquire certain knowledge."
(Respondent 17.1)

Furthermore, respondent also expressed that lack of absorptive capacity and the risks associated with it are reduces by the presences of teaching institutions on the platform. Due to the presences of their expertise to convert complex ambiguous knowledge into manageable learning modules, organisations are less dependent on their internal knowledge absorptive capacity.

Regardless of the early stage of the platform, several respondents did discuss and expressed certain conditions and wishes regarding knowledge and absorptive capacity. One of which regards the

previously mentioned clear differentiation between shareable knowledge and knowledge that is intellectual property. Nine respondents stated this differentiation needs to be clear within organisations that want to participate on the platform. Several reasons provided by respondents are; it protects organisations from unintentional knowledge sharing by employees, it makes organisations conscious of their own knowledge competence, it creates certainty for others that knowledge being shared is useful. Furthermore, six representatives expressed their desire that knowledge on the platform is provided in an accessible and manageable manner and seven representatives wish KSC curates the knowledge available on the platform. Also, because there is a risk that knowledge otherwise is too abstract and therefore cannot be utilised.

5.6 Measures for mitigating risks and exploiting benefits

After having discussed the benefits and risks of inter-organisational knowledge sharing and the KSC-platform, respondents were asked about potential measures for mitigating these risks and exploiting the benefits. Besides the previously mentioned pursuance of critical mass and independency of KSC in managing the platform, respondents offered several suggestions, which are discussed in this section.

One suggestion mentioned was a balloting committee for organisations willing to join the platform. This committee could check how a joining organisation suits the values and standard of the platform and the organisations already in it. This would involve evaluating the intrinsic motives of organisations to join the platform, checking the maturity of internal knowledge assurance and the added value an organisation can bring to the platform. Such a committee mechanism would ensure that organisations have the desired mindset, being the intention to bring knowledge to the platform, which would reduce the risk of opportunistic behaviour taking place.

Another suggestion made was a points or tokens system. This idea is that organisations can accumulate points by sharing knowledge on the platform. These points can then be spent to retrieve knowledge from the platform. This would imply that organisations first have to contribute to the platform before reaping the benefits. While a regulated system like this will mitigate many risks posed by this research like opportunistic behaviour and fair sharing, respondents acknowledge that the set-up of such system is difficult and must be done thorough. Respondents expressed challenges for such system like; How to value the knowledge shared, how to control knowledge exchange or transfer, can points be bought monetary and how to deal with disagreement on value of knowledge? All in all, a points system can be a strong mechanism to regulate trust on the platform, but entails a difficult and thorough process to set-up. Also, too much regulations and initial effort could present barriers that avert organisations from participating.

6. Discussion

KSC aims for inter-organisational knowledge sharing to become standard practice amongst its members. However, KSC lacks a clear understanding of what drives or hinders organisations to share knowledge outside of organisational boundaries. The aim of this study was to gain a better understanding of the benefits and risks the organisations perceive with inter-organisational knowledge sharing and how this impacts their considerations for participating in the KSC-platform. In line with this research objective the following main question was formulated:

How can KSC support organisations in the high-tech industry to practice and participate in inter-organisational knowledge sharing on their platform?

Several sub questions were formulated to gain insights necessary to answer this main question. In this section, the results of each of these sub questions are discussed accordingly.

Q1. What considerations determine the stance of organisations in the high-tech industry towards practicing and participating in inter-organisational knowledge sharing?

Most organisations that want to participate on the platform consider, in order for them to participate in inter-organisational knowledge sharing, that the benefits of participating should outweigh the risks. The majority of organisations also consider costs of participation like fees, time and reputation. When the costs are too high or outweigh the benefits, organisations will not be inclined to participate on the platform. To summarise, it seems that if costs do not exceed certain limits, organisations mainly account for benefits and risks in their decision to participate.

Q2. Which benefits do organisations perceive in inter-organisational knowledge sharing and what do they hope to gain from the KSC-platform?

Scientific literature tends to focus on the long-term benefits of inter-organisational knowledge sharing like competitiveness, innovativeness and performance (Cummings, 2004; Easterby-Smith et al., 2008; Lawson et al., 2009; Loebbecke et al., 2016). However, it is not clear what organisations gain from inter-organisational knowledge sharing that makes them accomplish these long-term benefits. In this study, it is found that the main benefits organisations perceive are access to more in-depth knowledge, the possibility to expand and strengthen their relations and direct commercial value. A rather unexpected benefit of the platform that organisations perceive is the contribution to standardisation of definitions and terminology across the high-tech industry.

Q3. Which risks do organisations associate with inter-organisational knowledge sharing and what restricts them from participating in the KSC-platform?

As inter-organisational trust and absorptive capacity are considered important antecedents of inter-organisational knowledge sharing, the lack thereof can cause organisations to perceive risks with participating in inter-organisational knowledge. As a result, these risks and uncertainties may inhibit the sharing of knowledge (Seyyedeh et al., 2009). Literature argues that organisations can perceive the following risks as a result of low trust and absorptive capacity: knowledge leakage, opportunistic behaviour of partners, receiving low quality or not useful knowledge (Easterby-Smith et al., 2008; Inkpen & Tsang, 2005; Loebbecke et al., 2016; Seyyedeh et al., 2009). Similar results are found in this study, as the risks that organisations associate with inter-organisational knowledge sharing the most are; providing competition with knowledge and thus losing market position, leakage of knowledge that is not meant to be shared and the risk that knowledge being shared on the platform is incorrect, obsolete or low quality. Some organisations also fear for job poaching or that they are not able to utilise knowledge available on the platform, because knowledge is too abstract or they lack the capacity.

Organisations might not participate on the platform when they are expected to share intellectual property, costs are too high, there is no mutual knowledge exchange or they experience unfair sharing or opportunistic behaviour.

Trust between organisations is viewed as a precondition to inter-organisational knowledge sharing in scientific literature (Easterby-Smith et al., 2008; van Wijk et al., 2008). Therefore, the same is expected on the KSC-platform. All organisations agreed on the necessity of trust when participating in inter-organisational knowledge sharing on the platform. Inter-organisational trust on the platform provides participating organisations with a certain security that they and the knowledge they share are not exploited. Factors that influence inter-organisational trust on the platform the most are transparent and reliable communication, avoidance of opportunistic behaviour, independency and balance in power, equal knowledge competence and the implementation of mechanisms that ensure trust. All factors that are discussed in the theoretical framework are also represented in the data, though some factors are considered more important than others. In addition to literature, it is found that equal knowledge competence and presents of measures and mechanisms for trust increases inter-organisational trust amongst organisations. In their study, Inkpen and Tsang (2005) argue that implicit norms and rules can lower the risks associated with opportunistic behaviour. This study has shown that the presents of such mechanisms indeed increase inter-organisational trust. Inkpen and Tsang (2005) also argue that trust between network members makes organisations more likely to accept the risk of knowledge leakage to competitors, which is one of the risks associated with participation on the KSC-platform.

It was expected that absorptive capacity and knowledge attributes would be as important as inter-organisational trust, yet it has not been mentioned nearly as often. One of the reasons might have to do with the early stage of the knowledge share platform. Currently there is no or minimal knowledge being shared via the platform, thus the need for absorptive capacity is not evident. Though, it implies that absorptive capacity is consider less important than inter-organisational trust in early stage of the inter-organisational knowledge sharing process. Meaning that when initiating the knowledge sharing process in a network structure, organisations should focus more on establishing inter-organisational trust amongst each other.

Absorptive capacity is still considered essential for inter-organisational knowledge sharing on the platform. It is unclear for organisations which knowledge will be shared on the platform. Never the less, organisations expect they have the ability or will be able to develop the ability to incorporate the knowledge shared by others on the platform. Therefore, organisations currently associate little risk with the knowledge aspect of the platform. However, it is possible that risks associated with lack of absorptive capacity become more evident when more complex knowledge is shared. Organisations do wish knowledge on the platform is being curated in an accessible and manageable way by the KSC to avoid knowledge being too abstract or hard to interpret.

Q4. How do the four participant groups differ with regards to perceived benefits and risks for participating in the KSC-platform?

While it was expected that organisations in different participants groups perceive and experience different benefits and risks with inter-organisational knowledge sharing, results show much resemblance between participant groups. Some benefits are perceived more by organisations in certain participant groups than in other groups. However, these differences seem to be induced by organisation size rather than the type of organisation. Also, there is no indication that organisations from different participant groups associate risks differently with inter-organisational knowledge sharing or participation on the platform.

6.1 Theoretical implications

Organisations are not necessarily hesitant for inter-organisational knowledge sharing. This study found that organisations are reserved mainly due to uncertainties surrounding the initiative, which confirms findings in extant literature on the impeding effects of risks and uncertainties on knowledge sharing behaviour (Seyyedeh et al., 2009). Moreover, organisations mostly consider the risks and costs versus the benefits in their decision to participate in inter-organisational knowledge sharing. Meaning that uncertainties regarding the costs of such initiatives negatively affects the decision making at organisations to participate.

Extant literature has proven the importance of inter-organisational trust and absorptive capacity and determined influential factors for these antecedents (Aulawi et al., 2009; Chen et al., 2014; Cheng et al., 2008; Easterby-Smith et al., 2008; Lin, 2007; Seyyedeh et al., 2009; van Wijk et al., 2008). Yet, it was unclear whether these factors are also important for inter-organisational trust and absorptive capacity in a network structure. This study addresses that research gap and confirms that the following factors also determine inter-organisational trust in a network structure; relation capital, opportunistic behaviour, participation and communication, shared vision and goals, and prior experiences. While the importance of these factors varies, this confirmation implies that insights and suggestions from this extant literature also apply for inter-organisational knowledge sharing on a network level. In addition to these determining factors, this study found that inter-organisational trust is also determined by equal knowledge competence and implementation of mechanisms for trust.

Moreover, this research is conducted on a business case which is characterised by its early start-up phase and found that organisations in this phase tend to establish relations and trust with others before they share knowledge. As is evident from the difference in importance between inter-organisational trust and knowledge absorptive capacity, and the focus on transparent and reliable communication, clarification of direction and expectations and aversion for opportunistic behaviour when establishing trust. This study contributes to research on network-based inter-organisational knowledge sharing by identifying factors that impact inter-organisational trust the most in an early stage of a network-based inter-organisational knowledge sharing process, which are communication, opportunistic behaviour, power and dependency, equal knowledge competence and trust mechanisms.

6.2 Practical implications

This research provides valuable insights for practitioners who seek to initiate inter-organisational knowledge sharing process on a network level. In their study, van Wijk et al., (2008) show that inter-organisational trust and absorptive capacity are important antecedents that precede the inter-organisational knowledge sharing process. However, while they are both considered important, this study found that trust between organisations is more important than absorptive capacity in an early stage of the network-based knowledge sharing process. Therefore, it is suggested that those who seek to start the knowledge sharing process on a network level first need to focus on social connections and establishing mutual trust between all organisations. Uncertainties in inter-organisational knowledge sharing process can negatively affect the participation and intentions of organisations to share knowledge externally (Seyyedeh et al., 2009). The outcome of this research suggests that network-based knowledge sharing initiatives can put effort in reducing uncertainties through communication and implementing measures to ensure organisations hold up to expectations. In this, it is especially important to be transparent and reliable in communication and provide clarification regarding the direction, intentions and expectations of participants. Organisations participating in inter-organisational knowledge sharing should avoid opportunistic behaviour, as it diminishes trust between organisations (Cheng et al., 2008). Respondents of this research suggested that a neutral independent party can be

appointed to monitor fair sharing and avoid dependency and power imbalance. Sharing equivalent knowledge competences and implementation of mechanisms that prevent infringement of trust can contribute to mutual trust between organisations (Inkpen & Tsang, 2005). However, the necessity of absorptive capacity should not be forgotten. Dependent on the attributes of the knowledge being shared, a certain degree of knowledge absorptive capacity is needed to share knowledge comprehensibly and take advantage of the knowledge being shared (Easterby-Smith et al., 2008; Seyyedeh et al., 2009; van Wijk et al., 2008). Furthermore, respondents of this research suggested that organisations could focus on their internal knowledge assurance, as it helps organisations to determine which knowledge can be shared externally and thus know their contribution to the knowledge sharing initiative before participating in inter-organisational knowledge sharing.

6.3 Limitations

Semi-structured interview was chosen as the data collection method in this study to provide the interviewees with more freedom to express their opinions and thoughts. This method led to rich data which provides additional insights into inter-organisational trust and absorptive capacity. However, this cause interviews to digress away from potential risks associated with inter-organisational knowledge sharing. Therefore, it was not always clear from the data why those conditions and wishes were set or which risks induce the need for those conditions. This limited the findings regarding the risks associated with inter-organisational knowledge sharing, as only statements that explicitly addressing risks could be interpreted as such. Never the less, interviews did provide rich useful data that produced meaningful insights into inter-organisational trust, absorptive capacity and the risks and benefits regarding inter-organisational knowledge sharing.

This thesis strives to be a valid and reliable research, yet the ecological validity of the research might be in question. The generalisability of this research is limited by the close relation to the specific business case of the KSC-platform. Findings, insights and recommendations are mainly applicable in the situation of KSC, though can be used in comparable situations and initiatives. That is either a third party or group of organisations that want to initiate or are in an early stage of an inter-organisational knowledge sharing process on network level.

6.4 Future research

This research is limited to a specific business case. In order to gain more generic insights and improve the ecological validity of similar studies, one can included organisations that participate in other network based inter-organisational knowledge sharing initiatives into the research sample. Furthermore, dynamics between organisations can change when these initiatives evolve and develop, especially when organisations actually share knowledge amongst each other. It is expected that these developments will affect the opinions and focus points of participants, which in turn could cause other risks to prevail and shift the importance of antecedents and influential factors. Therefore, future research could aim to identify different stages or maturities in network-based inter-organisational knowledge sharing. As well as, investigate how the development of knowledge sharing initiatives affects the dynamics between organisations in each of these stages.

As these initiatives develop and grow, so do the number of participants. It could be useful to identify organisation characteristics that influence how organisations perceive benefits and associate risks with inter-organisational knowledge sharing. By classifying organisations based on these characteristics, one can predict the considerations of new participants joining the initiative and manage them accordingly. This study was not able to conclusively identify differences based on the participant groups classified in the KSC-platform. Yet, data suggests that an organisations' size or business maturity might influence

how they approach inter-organisational knowledge sharing, and therefore the risks and benefits they associate with it. Future research could investigate the influence of different organisational characteristics on the considerations of organisations with regard to inter-organisational knowledge sharing.

7. Recommendations

This study implies that, in an early phase, network-based knowledge sharing initiatives need to establish inter-organisational trust rather than absorptive capacity. According to the KSC-network, communication, opportunistic behaviour, power and dependency, equal knowledge competence and trust mechanisms have the most influence on inter-organisational trust. Furthermore, this study found benefits and risks that the KSC-network associates with participation on the platform, as well as conditions and wishes that those organisations set for the platform. These results, insights and implications of this study provide guidance to endorse specific actions for KSC to encourage participation of organisations and foster inter-organisational knowledge sharing on the platform. In this chapter, hands-on recommendations are provided towards KSC and aim to answer to following research question

Q5. How can KSC exploit benefits and mitigate the risks that organisations perceive with inter-organisational knowledge sharing to foster the practice of inter-organisational knowledge sharing on their platform?

So how can they? When looking at the risks, restrictions, conditions and wishes representatives expressed and the results of the analysis on how those statements relate to inter-organisational trust and absorptive, three trends stand out. For one, representatives expressed concerns regarding the uncertainties that about the direction, decision making, costs and actual benefits of the platform. Second, representatives of organisations hope that the KSC-platform will become an open and trusted community, as they emphasise the importance of transparency and reliability in communication, intentions to contribute, fair sharing, equality and solidarity towards each other. The third trend regards an accessible platform where organisations can share and collect comprehensible knowledge, as representatives expressed their wishes for knowledge curation and support with knowledge assurance, and the importance of measures to safeguard trust on the platform and ensure knowledge on the platform stays relevant, accessible and easy to digest. Because their importance to the KSC network, it is suggested that KSC addresses the uncertainties surrounding the platform, and strives for an open and trusted community of organisations and an accessible platform in order to mitigate the risks and exploit the benefits that organisations perceive. In the following sections suggestions are provided on how KSC can approach these objectives.

Uncertainties surrounding the KSC-platform

First, it is suggested that KSC addresses the uncertainties about the direction, decision making, costs and actual benefits of the platform by providing more frequent and clear communication. First of all, in this study representatives declared they hope to obtain certain specific knowledge, strengthen their network relations and use the platform for marketing and sales purposes. Yet, organisations do not know which benefits can actually be gained by participating on the platform, nor the costs that go with it. Therefore, it is suggested that KSC communicates the benefits and costs more evidently to avoid discrepancy between what the platform can provide and what participants hope and expect to gain from the platform. By propagating these benefits, the platform can attract more participants. Furthermore, to provide participants with more clarity on the future of the platform, KSC can present their future plans and direction in a roadmap. Through a roadmap they can communicate the intentions and direction of the platform and inform participant what can be expected, as well as develop and represent their strategic plans (Kappel, 2001; Kerr et al., 2012; Phaal et al., 2004). The time-based graphical framework of a roadmap is a powerful communication mechanism to present information in a condensed form and communicate across functional or organisational boundaries, yet it is recommended to support this condensed information with elaborative documents (Phaal et al., 2004). In case of KSC, the roadmap can show the objectives of the platform, the steps required to accomplish them and in general shows the

direction of the platform. Yet, it is not a fixed planning, targets in the roadmap can shift and are open for change as new objectives or opportunities arise. Though, it is important that progress, accomplishments, changes and choices made throughout the process of the roadmap are communicated with participants.

To address the two other objectives, an open and trusted community and accessible platform, the SECI model by Nonaka and Takeuchi (1995) is used. The SECI model describes four dimensions of a knowledge transferring process. A visual representation of the spiral model is shown in Figure 11, which includes brief examples of each dimension in the knowledge conversion process. While this model typically addresses the process of knowledge conversion between people, in this case the SECI model is applied on the inter-organisational knowledge sharing process on the KSC-platform. As the aim for an open and trusted community and an accessible platform complements multiple dimensions of the SECI knowledge conversion process, the choice is made to use the SECI model as a baseline for further recommendations. The four dimensions of SECI model can represent themselves as follows in case of KSC.



Figure 11: SECI Spiral model (Nonaka & Takeuchi, 1995)

Socialisation: Organisations come together to share tacit knowledge and experiences

Externalisation: Conversion of tacit knowledge to explicit knowledge done through internal knowledge assurance and external sharing of knowledge to the platform.

Combination: In case of KSC this occur in two places:

on the platform: Combining of new explicit knowledge with existing knowledge on the platform, mainly through categorizing and connection knowledge competences.

at organisations: Combining explicit knowledge on the platform with existing knowledge in the organisation, mainly through absorption of externally acquired knowledge (potential absorptive capacity).

Internalisation: Incorporating and applying acquired knowledge in business operations of an organisation, either through absorption of this knowledge (realised absorptive capacity) or collaboration with the knowledge owner. This is where product developments or innovations are established.

After the internalisation phase, the process can reinitiate at the socialisation phase as organisations can again share their newly absorbed tacit knowledge and experiences. KSC can have a crucial role in this knowledge conversion process on the platform. So, how can KSC approach these dimensions to foster the knowledge sharing process between organisations participating on the platform?

Open and trusted community

In the socialisation phase it is important to break down barriers that hinder social interactions. An open and trusted network of organisations complements the socialisation phase, as trust and development of strong personal relations between organisations breaks down potential barriers (Nonaka & Takeuchi, 1995). This study shows that transparent and reliable communication is key for an open and trusted network. Moreover, frequent interaction and communication between participants can increase the strength of relations (Seyyedeh et al., 2009; van Wijk et al., 2008) and establishing communication mechanisms is essential for trust and inter-organisational knowledge sharing (Cheng et al., 2008; Gilbert & Cordey-Hayes, 1996; Treleaven, 2004). Therefore, it is suggested to connect participants through scheduled gatherings or events, in which they actively express their expectations, intentions and contributions to the platform and other participants. During these meetings, it is important that organisations put themselves in the shoes of others and understand what they want to achieve and how their own knowledge can contribute to one other's goals, as lack of empathy can present barriers to knowledge sharing (Amayah, 2013). Empathy between organisations can also facilitates communication in knowledge networks in order to maintain high performance (Miller & Wallis, 2011). By letting participants to engage in each other's problem-solving process, it is expected that organisations can be motivated to think about the potential possibilities of their techniques or products for others. Which will not only enhance empathy across different participants groups but also initiates cooperation between organisations. These activities can later evolve in gatherings where participants collectively discuss, decide and agree on steps to take or type of knowledge to share on the platform, as effective communication mechanisms can enhance joint planning and decision making (Cheng et al., 2008). Through joint decision-making participants can ensure equivalent knowledge competences are being shared. Moreover, joint decision making can enhance group cohesiveness (Huang, 2009), which can make the platform feel more like a community.

Accessible knowledge sharing platform

In the externalisations phase of the SECI model, organisations are required to transfer their tacit knowledge into explicit knowledge before they are able to share it to the platform (Nonaka & Takeuchi, 1995). Yet, results of this study show much variance in internal knowledge management. About half of the representatives of manufacturing organisations indicated that the internal knowledge assurance of their organisation is not up to standard and they often do not know how to improve their knowledge management, which might present difficulties for organisations to share explicit knowledge on the platform. Therefore, it is suggested to support organisations by propagating the importance knowledge management and providing guidance in internal knowledge management and sharing knowledge externally. In this study, representatives suggested that best-practices, practical lessons learned and experiences on knowledge management can help them in setting up their internal knowledge assurance. Sharing knowledge with other organisations can induce misinterpretations due to knowledge ambiguity and complexity (Easterby-Smith et al., 2008; Seyyedeh et al., 2009). In order to prevent this, KSC can offer education to organisations on how to share knowledge in a comprehensible and understandable manner and thereby increasing the change that participants provide each other with knowledge that is easier to understand and identify.

Knowledge curation of manufacturing knowledge can significantly improve knowledge sharing and communication between knowledge competences (Wood, 2017). According to representatives, knowledge on the platform also needs to be reliable, correct and up to date in order for the platform to be accessible. They also suggest that KSC, as a neutral independent party, can take on the role of curator to monitor and maintain the knowledge being shared to keep the platform reliable and accessible. By curating the knowledge on the platform, KSC can police the quality, validity and actuality of knowledge on the platform. As well as, point out potential opportunistic behaviour and approach organisations to update their knowledge on the platform. While it is possible to appoint a third party as curator,

representatives do indicate that management and curation of the platform should be done by a neutral independent party to ensure fair sharing and equality on the platform. Furthermore, as a curator, KSC can also influence the combination phase of the SECI model by highlighting the connection between knowledge competences by combining new and existing knowledge from different knowledge competences. Linking these knowledge competences can show potential collaborations between organisations (Groza et al., 2013) and thus propagate the benefits of the platform even more. It is recommended to also showcase successful collaborations projects as a result of knowledge sharing between different knowledge competence, as positive prior experiences can stimulate learning efforts (Inkpen, 2000).

Lastly, the position of KSC in the last two phases, combination at organisation and internalisation, of the SECI model is discussed. In these phases it is mainly up to the organisations themselves to identify and acquire useful knowledge on the platform (potential absorptive capacity) and applied that knowledge into their business operations (realised absorptive capacity). At the time of this research, most organisations indicate that they are fully capable or somewhat capable to do so. However, as the platform develops and knowledge sharing on the platform becomes more complex, it is possible that organisations lack the necessary absorptive capacity. If so, it is suggested that KSC supports participants with additional training and workshops regarding absorptive capacity, because absorptive capacity is such an important antecedent of inter-organisational knowledge sharing (Easterby-Smith et al., 2008; Seyyede et al., 2009; van Wijk et al., 2008).

All in all, suggestions discussed in this recommendation chapter provide KSC with possible interventions, measures and mechanisms to establish an open and trusted community and accessible platform, which in turn can mitigate risks and exploit benefits associated of participation on the platform and foster inter-organisational knowledge sharing on the KSC-platform.

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Appendix

In this chapter all appendices are presented.

Appendix I. Interview schedules

This appendix presents the interview schedule use to gather data for this thesis, this interview schedule is in Dutch.

Interview Knowledge Sharing Centre

Het doel van dit interview is om inzicht te krijgen in de beweegredenen van bedrijven om aan externe kennisdeling te doen. Met externe kennisdeling wordt specifiek kennisdeling tussen organisaties bedoeld.

Voorwoord

Ik - Dennis van Tuijl - doe dit onderzoek als thesis onderzoek voor mijn Master Innovation Management. Ik doe dit onderzoek in opdracht van het Knowledge Sharing Centre om hen te ondersteunen bij het opzetten bij een platform voor externe kennisdeling.

Met het onderzoek wil ik graag meer duidelijkheid krijgen over de waarde die bedrijven hechten aan extern kennisdelen en – belangrijker nog – welke factoren bedrijven er mogelijk van weerhoudt om kennis met andere bedrijven te delen. Bovendien ben ik benieuwd naar de rol die managers en leidinggevenden spelen bij externe kennisdeling.

Naast dat ik met u spreek, zal ik ook praten met mensen van andere organisaties in het KSC-netwerk.

Graag wil ik uw toestemming vragen om het gesprek op te nemen. Dit helpt me om me nu op het gesprek te concentreren en later bij het analyseren van de antwoorden. Ik zal een samenvatting maken van ons gesprek en dit zal ik u ter verificatie toesturen.

Ik zal u eerst vragen naar uw visie op de voordelen van externe kennisdeling voor uw organisatie. Daarna wil ik ingaan op eventuele risico's die u voorziet. Vervolgens wil ik het met u hebben over de huidige bedrijfsvoering met betrekking tot kennisdeling en afsluiten met enkele vragen over wat het Knowledge Sharing Centre voor uw organisatie kan betekenen.

Graag wil ik benadrukken dat het interview uitdrukkelijk gaat om kennisdeling buiten de grenzen van de eigen organisatie.

Algemeen

Nog voordat we ingaan op de situatie rondom het KSC ben ik benieuwd;

Hoe is uw organisatie op dit moment bezig om de kennis van uw werknemers te borgen en delen?

Op welke manier?

Hoe wordt het initiatief om kennis te borgen en delen ontvangen bij uw medewerkers?

Wat denkt uzelf dat hiervan de oorzaak is?

In hoeverre is externe kennisdeling op dit moment een belangrijk thema binnen uw organisatie?

In hoeverre is uw organisatie actief met externe kennisdeling? Op welke manier? Binnen of buiten het KSC?

Dit schets wel een goed beeld van de huidige kennisborging en deling van uw organisatie. Graag zou ik nu graag willen richting op het platform dat het KSC wil ontwikkelen waarin kennisinstellingen, OEMs, engineeringbureaus en bedrijven in de maakindustrie onderling kennis uitwisselen.

Benefits

Wat zouden voor uw organisatie de mogelijke voordelen zijn van zo'n platform en de beoogde externe kennisdeling?

(knowledge) Welke specifieke kennis hopen jullie te vergaren?

(relation) Nieuwe relaties of verbeteren van bestaande relaties?

(other) Waarom wordt er waarde gehecht aan?

Risks

Wat zijn voor u de risico's die verbonden zijn aan een dergelijk initiatief?

Welke risico's zijn er voor jullie verbonden aan het extern delen en borgen van kennis?

Welke risico's ervaren jullie met betrekking tot andere organisaties?

Absorptive Capacity | Absorberend vermogen

Knowledge

Welke specifieke kennis hoopt uw organisatie te vergaren middels het Knowledge Sharing Centre?

Knowledge Ambiguity and Type of Knowledge

Uitleg: er zijn verschillende vormen van kennis:

- Expliciete kennis = Kennis die te documenteren is; Informatie; Know-what
- Impliciete kennis = Kennis van een persoon of bedrijf; Vaardigheden; Ervaring; Know-how.

Tevens kan kennis verschillen in complexiteit, verschillende geïnterpreteerd worden, uit context of vaag zijn.

Wat zijn de risico's die u erkent bij deze verschillende vormen van kennis?

Waarom zijn dit risico's in voor uw organisatie?

Absorptive capacity

Reden dat ik hierna vraag is omdat er bepaalde vaardigheid bij komt kijken om kennis van andere organisaties te herkennen, begrijpen, verwerken en benutten. Hierom de vraag:

In hoeverre beschikt uw organisatie over de vaardigheid om nuttige kennis van andere organisaties te herkennen, begrijpen, verwerken en benutten? *Details vragen per categorie*

Wat zouden mogelijke problemen kunnen zijn bij het ontbreken van deze vaardigheden?

Hoe zouden deze problemen vermeden kunnen worden?

Hoe staat u er tegenover als er trainingen worden aangeboden in het herkennen, begrijpen, verwerken en benutten van externe kennis?

Self-efficacy

In hoeverre denkt u dat uw medewerkers in staat zijn om relevante kennis van andere organisaties te herkennen en gebruiken als die wordt aangeboden op het platform?

Denk u dat uw medewerkers kennis van het platform ook echt zouden (willen) gebruiken? En waarom?

Wat zijn voor uw organisatie belangrijke voorwaarden om op het KSC-platform kennis te delen?

Interne kennis borging → waarom ziet u interne kennis borging als noodzakelijk

→ Hoe kan het KSC uw organisatie hiermee ondersteunen?

Vertrouwen → Door naar onderstaande vraag | Vertrouwen

Anders → Waarom zijn deze voorwaarden belangrijk voor u?

Trust | Vertrouwen

Bij vertrouwen gaat het specifiek om het vertrouwen tussen of ten opzichte van organisaties

In hoeverre speelt vertrouwen een rol in uw overweging om kennis te delen via het KSC-platform?

Voorziet u hierin problemen in het geval van het KSC? En waarom?

Hoe zou het KSC volgens u het onderlinge vertrouwen kunnen verbeteren?

Prior experience

Nog even over uw eerdere ervaringen met kennisdelen met andere organisaties;

Hoe zou u deze ervaringen beschrijven?

Slechte ervaring? → Wat zou KSC kunnen doen om dergelijke ervaringen te voorkomen?

Goede ervaring? → Hoe voegt deze positieve ervaring toe aan uw vertrouwen in het KSC?

Participation & Communication

Hoe belangrijk zou het voor u zijn om te zien dat andere organisaties actief kennis delen op het KSC-platform?

Zouden jullie meer geneigd zijn om kennis beschikbaar te stellen als andere organisaties dat ook doen?

Bent u van mening dat KSC daarin zou moeten bemiddelen/optreden? Op welke manier?

Staat u ervoor open om deel te nemen aan evenementen en bijeenkomsten gericht op kennisdeling tussen organisaties?

Wat voor soort evenement of bijeenkomst zou voor jullie een bijdrage leveren?

Wat maakt dergelijke evenementen of bijeenkomsten aantrekkelijk voor jullie?

Opportunistic behaviour

Wat zijn eventuele gevolgen voor u wanneer een andere organisatie lijkt te opereren vanuit eigen belang?

Op welke manier zou dit gevolgen hebben op het delen van kennis?

Relation Capital

Wat is in uw ogen de meerwaarde van een netwerk zoals het KSC dat voor ogen heeft?

Waaraan zou dit netwerk van organisaties moeten voldoen om meerwaarde te hebben?

Verwacht u dat dit netwerk ook meerwaarde heeft los van de eventuele kennisdeling via het platform?

Power Relation & Dependency

Zou het voor jullie nadelig zijn als andere organisaties beter zijn kennis eigen te maken

In hoeverre is uw organisatie instaat te definiëren welke kennis wel en niet gedeeld mag worden?

Is er behoefte aan ondersteuning bij het afbakenen van deelbare kennis?

In hoeverre is men in uw organisatie bang om afhankelijk te worden van andere organisaties als gevolg van externe kennisdeling?

Waarom verslechterd of verbeterd de handelspositie als gevolg van externe kennisdeling?

Op welke manier is afhankelijk zijn van andere organisaties van invloed op jullie externe kennisdeling?

Wat kan het KSC hierin betekenen?

Shared Vision/Goal

Stel het Knowledge Sharing Centre zou een gezamenlijke visie met bijpassende doelen willen formuleren voor het kennisdelingsplatform

Zou u het aanmoedigen om een gezamenlijk visie te formuleren? Waarom?

Zou u inspraak willen hebben bij het opstellen van deze visie en doelen? Op welke wijze?

Zou het uw vertrouwen in het netwerk verbeteren wanneer deze visie met alle bedrijven besloten wordt?

Management & Leader behaviour

Vision

Is er een visie binnen het bedrijf dat zich richt op externe kennisdeling, en zo ja wat is die visie?

Hoe wordt deze visie overgedragen naar medewerkers?

Zo nee, is er wel een visie betreft interne kennisdeling?

Management Practices

Is er formeel beleid binnen uw organisatie om externe kennisdeling te bevorderen of juist te voorkomen?

Wat wordt hier zoals mee gedaan?

Hoe worden managers en leidinggevenden betrokken in dit beleid? En steunen zij dit beleid?

Hoe bekwaam zijn leidinggevenden in uw ogen om hier op een goed manier ondersteuning in te bieden?

Welke management praktijken worden er momenteel gebruikt in uw organisatie om kennisdeling te bevorderen?

Denk hieraan:

- *Aanbieden van trainingen en persoonlijke ontwikkelingen op basis het delen van kennis;*
- *Gestandaardiseerde procedures of organiseren van informele sociale evenementen;*
- *Het creëren van een open en vertrouwde bedrijfscultuur;*
- *Selecteren van personeel op basis van communicatievaardigheden of past bij de organisatie;*
- *Werk methodes die samenwerking van cross-functionele medewerker stimuleert;*
- *Erkenning en beoordeling van kennisdelingsgedrag;*
- *Beloningssystemen voor effectieve kennisdeling;*
- *Gebruiksvriendelijke en passende IT die kennisdeling of socialiseren mogelijk maakt.*

Management Support

Hoeveel aandacht besteden jullie aan het stimuleren, enthousiasmeren en ondersteunen van medewerkers om kennis te delen?

Op welke manier proberen jullie medewerkers te stimuleren en ondersteunen in het delen van kennis?

Denk hieraan:

- *Erkenning van gewenste kennisdeling;*
- *Training geven of een medewerker toewijzen een training te geven;*
- *Aanmoedigen van trainingen, communiceren en leren;*
- *Betrekken van medewerkers in besluitvorming;*
- *Wegnemen van barrières om kennis te delen;*
- *Het gebruik maken van gedeelde kennis;*
- *Teambuilding;*
- *Het veranderen van taken of functies van medewerkers;*

Hoe effectief zijn jullie in het stimuleren van kennisdeling onder medewerkers?

Zijn de resultaten van het stimuleren van kennisdeling onder of boven verwachting?

Afsluitend

Wat is voor jullie belangrijk om het kennisdelingsplatform dat Knowledge Sharing Centre voor ogen heeft te laten slagen?

Waarom is dit belangrijk?

Is er nog iets dat niet te spraken gekomen is en die het KSC volgens u wel zou kunnen doen of rekening mee zou moeten houden?

Einde

Bedankt voor het beantwoorden mijn vragen.

In de flyer werd een klankbordgroep voorgesteld, momenteel is nog onduidelijk wanneer en op welk manier de klantbordgroep Plaatst gaat vinden. Op dit moment lijkt die een digitale sessie te gaan worden. Meer informatie wordt te zijner tijd toegestuurd. Een uitnodiging voor deze klankbordgroep volgt.

Nogmaals bedankt, succes en hopelijk tot de klankbord sessie.

Appendix II. Coding overview statements inter-organisational trust

Coding frequency is determined by number of unique codes regarding a factor. For example, the two statements underlying reliability includes eight codes, of which five are unique per interview. In the factor communication, only the number of unique codes count. In this overview, themes are in bold text and codes in regular.

Themes (factors) and underlying codes	Type of statement	Number of Respondents	Number of statements
Communication		16	27
Clear Expectations or Direction	Condition	13	13
Reliability		5	8
Incorrect or low-quality Knowledge	Risk	4	
Knowledge correct and Up-to-date	Condition	4	
Transparency		9	11
Clear Ownership of Knowledge	Condition	4	
Providing competition with knowledge	Risk	7	
Knowledge Competence		10	15
Low value Knowledge	Risk	2	
Mutual Exchange	Condition	10	
No mutual knowledge exchange	Restriction	3	
Opportunistic Behaviour		14	20
Diversity in participants	Condition	5	
Intentions to bring knowledge	Wish	8	
Unfair Sharing or opportunistic behaviour	Restriction	7	
Participation		8	9
Active Influential frontrunners	Condition	2	
Others also Participate	Condition	7	
Power and Dependency		13	16
Independent	Condition	8	
Moderator or Management role	Wish	8	
Prior Experiences		3	3
Showcase successful cases	Wish	3	
Relation Capital		4	4
Critical Mass	Condition	4	
Security		6	6
Job Poaching	Risk	2	
Knowledge Leakage	Risk	4	
Shared Vision		10	10
Shared Vision	Wish	10	
Input on vision KSC	Wish	5	
Trust and Trust mechanisms		12	13
Lack of Trust or Trust Mechanisms	Restriction	3	
Trust and Trust mechanisms		10	
Fair sharing	Condition	3	
Knowledge Competence	Condition	3	
Reliability	Condition	2	
Transparency	Condition	6	

