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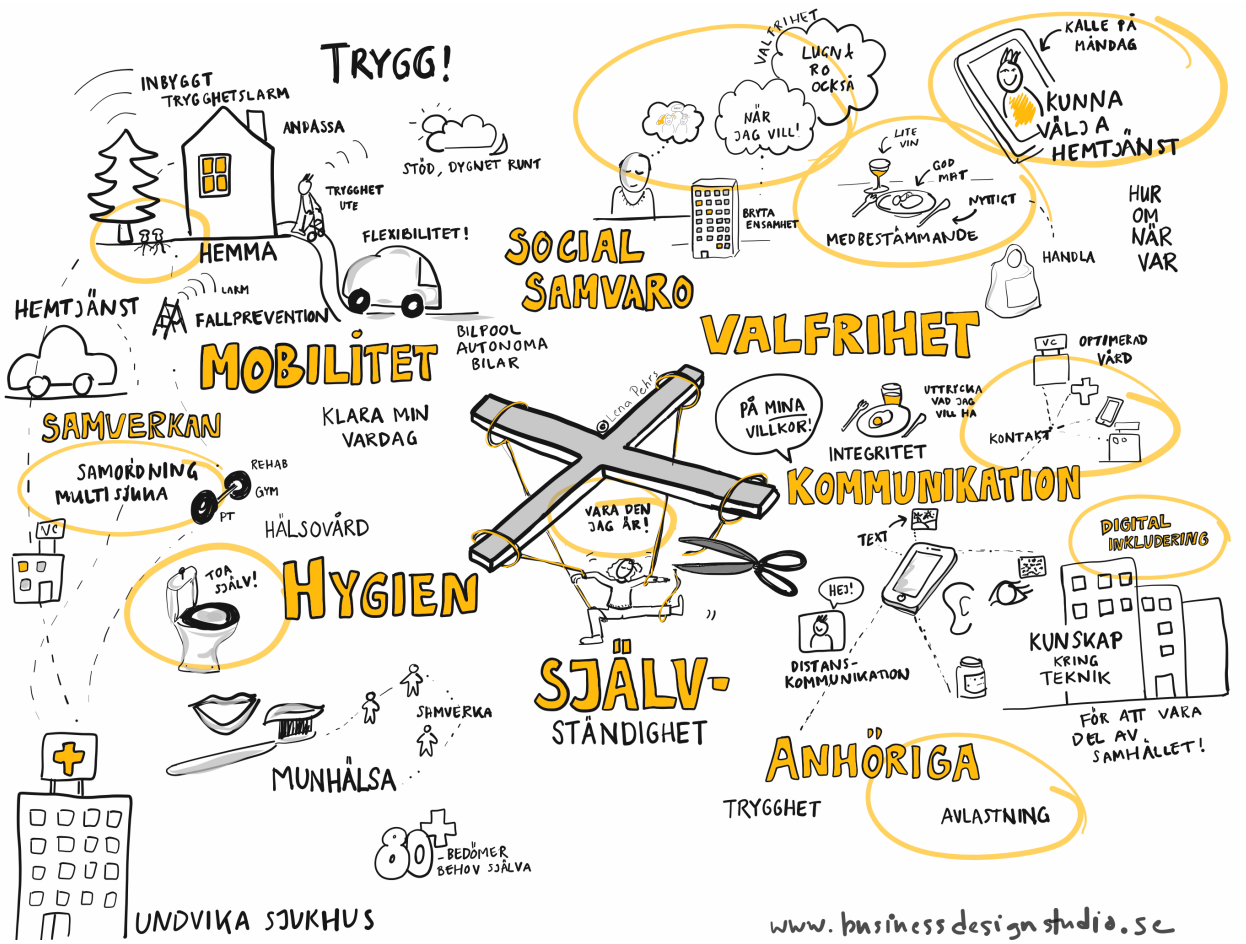

Learn to explore and explore to learn

A multiple case study on how RISE's CoCreation workshop format can create value

Master's thesis in Learning and Leadership
Master's thesis in Management and Economics of Innovation

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Department of Communication and Learning in Science
CHALMERS UNIVERSITY OF TECHNOLOGY
Gothenburg, Sweden 2018

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Abstract

Innovation is often seen as critical to the longevity of an organization, and equally hard to manage. Being able to explore new opportunities and ideas is key to an organization's ability to innovate. Further, exploration have been found to be important to organizational learning. An organization's ability to learn is also related to its innovation capabilities.

This study's general focus will be on exploratory processes and how such processes can contribute to organizational learning. The exploratory process and organizational learning perspectives will be applied to understand how RISE's CoCreation workshop can create value for participating organizations. The purpose is to identify key prerequisites for successful workshops as well as necessary prerequisites within the receiving organization for them to capture value. A qualitative multiple case study is used, investigating six organizations that have participated in a CoCreation workshop. Within the cases interviews are used as the main data collection method, the cases are also complemented with participant observation at one workshop, and an additional survey.

The organizations differed a lot in their intent with the workshop, in their post workshop activities and in gained values. Prerequisites for a successful workshop and value capture has been found, and based on those a workshop process framework has been constructed. In the framework, prerequisites are divided into what is needed when preparing a workshop, during the workshop itself and to succeed with post workshop activities.

A CoCreation workshop can be a powerful way of creating new ideas. The strength of the format of the format lies in conceptualization and the mix of participant perspectives. The workshop can be a part of an exploratory process, with a potential to increase organizational learning. To achieve that, post workshop activities are important. In that way organizations can gain dynamic values, such as knowledge and collaboration. External workshop organizers are thus recommended to give attention to supporting preparations and post workshop activities.

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Thanks to RISE for letting us do our thesis in this exciting topic. It has given us the opportunity to speak with a lot of interesting people and learn a lot. Hopefully, we (and you) are now also better workshop creators. Special thanks go to Erik Ronne, Peter Sandberg, Dag Sjöholm, Anna Mattsson and Ellen Franzén. You have been generous with your time and perspectives, making us and this thesis better for it.

Thanks to all interesting people we have been able to speak with. Thanks to the representatives from the case organizations for letting us take your time and get to know you and your organization, Atlas Copco/Epiroc, LKAB, Boliden, Länsförsäkringar, Rusal Aughinish, SKL. Also, a big thanks to our informants for giving us an initial frame of reference in an interesting but sometimes messy topic; Jonas Thorngren, Magnus Karlsson, Peter Tyreholt. Getting your practical perspectives have been invaluable for the results of this thesis.

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1. Introduction

Many firms struggle to innovate (Dougherty & Hardy, 1996), even though innovation is recognized as an important factor for the success of both companies and society of large (Schumpeter 1942; Cefis & Marsili, 2006; Cefis & Ciccarelli, 2005). As global competition intensifies and more and more of the world's economy becomes increasingly knowledge-based, the importance of innovation for competitiveness is expected to increase even more (Lawson & Samson, 2001). In academia, innovation is usually defined as value creation from novel ideas (e.g. Schumpeter, 1942; OECD and Eurostat, 2005), this can be contrasted to everyday speech where innovation instead often refers to new ideas or creativity (O'Connor & Ayers, 2005).

Being able to explore new opportunities and ideas is key to an organization's ability to innovate (e.g. O'Connor, 2008; O'Reilly & Tushman, 2004). Further, exploration have been found to be important to organizational learning (e.g. Garvin, 1993; Huber 1991), and an organization's ability to learn have been found to be related to its innovation capabilities (e.g. Cohen & Levinthal, 1990).

This thesis focuses on the concrete implementation of exploration in organizations, which can be called exploratory processes (Charue-Duboc et al., 2010). Even if exploration as such is discussed to a large extent by scholars, how to manage exploratory process in practice have not received much scholarly attention. It is the area where this thesis makes its main contribution.

The thesis specifically studies an ideation workshop format from RISE, Research Institutes of Sweden. RISE is a state-owned research institute with the mission to support Swedish businesses competitiveness, aiming to be an innovation partner for other organizations (RISE AB, 2017). The workshop studied is called CoCreation workshop, a two-day collaborative workshop with representatives from the organization ordering the workshop, research and surrounding industry. The first day is focused on brainstorming and the second day on developing the ideas further into concepts.

Ideation workshops are often pursued by organizations wanting to improve their innovation capability (O'Connor and Ayers, 2005; Birkinshaw et al., 2011) Yet, they often suffer from lack of follow-up from the organization, and are unlikely to have the intended result on innovation capabilities (Birkinshaw et al., 2011). By relating ideation workshops to exploratory processes and organizational learning this thesis aims to find prerequisites for value capture from ideation workshops. Potentially it can help workshop organizers (like RISE) to organize workshops that have a larger value to participating organizations. In this thesis, value includes any positive effects observed for participating organizations and individuals.

1.1 Aim and purpose

The aim of the thesis is to evaluate CoCreation workshops based on what value they create for participating organizations. The focus will be on value created through the organization's exploratory processes and through the organization's learning. The purpose is to identify key prerequisites for successful workshops as well as necessary prerequisites within the receiving organization for them to capture value.

The study will focus on answering the following research questions:

- What kind of value can an ideation workshop create?
- How can an ideation workshop contribute in an exploratory process?
- How can a workshop process contribute to organizational learning?

1.2 Delimitations

The workshops that will be evaluated are RISE´s CoCreation ideation workshops and the case organizations will be the clients that have participated in these workshops. Beyond this concept, other parts of RISE also offer similar workshops and working methods using co-creation methods, but these are not included in this thesis. Respondents will be limited to employees of the case organizations and RISE. Primary focus will be the people who have been responsible for the workshop from the client company and workshop attendees.

2. Frame of reference

This chapter will start with introducing exploratory processes and the antecedent of successful exploration, drawing on relevant theories from innovation management and organizational learning. Next, the concept of organizational learning will be defined and introduced, together with a few frameworks explaining mechanisms of organizational learning. Lastly, literature will be briefly summarized and the authors will provide a reflection on previous research and the areas where this thesis will make its main contribution.

2.1 Exploratory processes

Being able to explore and experiment is key both to organizational innovativeness and learning (e.g. Garvin, 1993; O'Reilly & Tushman, 2004; Huber 1991; Cohen & Levinthal, 1990). The concrete implementation of exploration and experimentation in an organization, can be called exploratory processes (Charue-Duboc et al., 2010) Further, exploratory processes have been mentioned as an important element in a system for organizational innovation capability (O'Connor, 2008).

So, what is an exploratory process? O'Connor (2008) emphasizes that the exploratory process should achieve learning and generate a large variety of options. The proposed process outline relies on generating multiple options and pursuing each option to the point of learning enough to take the next step of development. This proposed process has similarities to the concept *purposeful experimentation* as well as recently popularized methodologies like *the lean startup* and *design thinking* (Murray & Tripsas, 2004; Blank, 2013; Mueller & Thoring, 2012). An important similarity of all of these theories is that ideas that are brought up are tested. In this context testing is not only intended as validation, but also serve as a way of a generating new exploration paths, bringing an iteration to the process (Charue-Duboc et al., 2010).

2.1.1 Exploration and variety

As mentioned, variety should be enhanced in an exploratory process, and is essential to create knowledge in the process (O'Connor, 2008). When the organizational environment is uncertain, variance becomes even more important (McGrath, 2001).

Many factors can help enhance variety. The scope of exploration is important, as a too narrow scope can make ideas homogenous while a too broad scope can become hard to manage (Charue-Duboc et al., 2010). Another important parameter relates to how and where new knowledge is acquired. Roughly, this can be divided into local search, i.e. exploration closely related to previous R&D work, and boundary spanning exploration, i.e. crossing either organizational boundaries or venturing into new technology (Rosenkopf & Nerkar, 2001).

In research venturing into new technology or crossing organizational boundaries has been found to be an effective innovation strategy (e.g. Chesbrough, 2012, Rosenkopf & Nerkar, 2001). Other findings point towards that external entities, like consultancies or researchers, can act as knowledge brokers helping to integrate external knowledge and apply old ideas into new contexts (Hargadon & Sutton, 1997; Börjesson 2011). Poetz and Schreier's (2012)

findings further indicate that users and customers can help bring valuable ideas. Yet, local search and company employees are still important to coming up with new ideas, especially if the problem is complex and knowledge-intense (Poetz & Schreier, 2012). Apart from whether knowledge and skills come from internal or external sources, a mix of skills and knowledge in a group in itself has also been found to enhance creativity (West, 2002).

When bringing in new and diverse perspectives, a key challenge is knowledge integration, i.e. making sure everybody understand and can acquire knowledge (Suominen et al., 2017; West, 2002). Knowledge integration hinges on that different communities of knowledge can make their own communities perspective clear, and take on the perspective of other communities. This process is called perspective-making and perspective-taking (Boland & Tenkasi, 1995).

2.1.2 Ideation workshops

Ideation events like workshops, can create attention and excitement, and generate useful ideas (Birkinshaw et al., 2011). There are however reasons to be cautious. Directing attention towards innovation could risk to be harmful to innovation capabilities if no other innovation activities are established (Börjesson & Elerud-Tryde, 2017). Further, if the generated ideas are not developed further, ideation events can be disempowering to participants, as it can feel like generating ideas to no use (Birkinshaw et al., 2011). However, in the right context, ideation workshops can still bring value to participants and involved organizations (e.g. Soini & Pirinen, 2005; Hansen & Birkinshaw, 2007).

Workshops are essentially events of knowledge transfer (Soini & Pirinen, 2005). As discussed above, integrating knowledge from other organizations, technologies or even industries can be vital to creating variety in the ideation phase of exploration. Workshops is a good tool to facilitate such knowledge integration (Suominen et al., 2017). Especially collaborative workshops can provide a non-competitive discussion and collaboration arena not often found elsewhere, integrating perspectives from many different organizations, industries and disciplines (Soini & Pirinen, 2005). Further workshops have been found to be able create commitment and a shared vision, both in the host organization and its ecosystem (Soini & Pirinen, 2005).

A key aspect of ideation workshops is that they can produce new types of ideas by stimulating out-of-the-box creativity. Building upon innovation and creativity theory, Lempiala (2010), have identified four antecedents of out-of-the-box creativity on a group level; *vision*, *culture of questioning and tolerance*, *balanced risk-taking,* and *priority and demand for radical innovation*. Implementation of ideas is also important to creativity. Because if ideas are not used, people in the organization can feel like they failed and are likely to recall these failed ideas during future ideation sessions, which usually inhibits creativity (Lempiala, 2010).

2.1.3 Idea integration

To create value from an exploratory process, successful ideas have to become innovation projects and finally integrated in the business of the organization (Govindarajan & Trimble, 2013). In the execution of innovation projects, overcoming other challenges than just the quality of the idea are critical to success (Govindarajan & Trimble, 2013; West, 2002). As mentioned above, success in the execution stage is also important to creativity (Lempiala, 2010).

Converting an idea into a project requires a significant investment of time, resources and efforts (Cohendet & Simon, 2015). Getting these resources can be very challenging, as many organizations are not set up to execute innovation (Dougherty & Hardy, 1996; Govindarajan & Trimble, 2013). In many cases the access to resources is largely dependent on the individual innovator's own networks and ability to hustle resources (Dougherty & Hardy, 1996).

Most companies will have some type of traditional product development process (Cohendet & Simon, 2015). One view is that idea development within exploratory processes should be a separate process, and should be loosely coupled with the traditional development process (Cohendet & Simon, 2015). Another view is that ideas from the exploratory process precede a "normal" development process, i.e. is part of what has been termed the fuzzy front end (Reid & De Brentani, 2004).

Backman et al. (2007) points out that ideas in the fuzzy front end that comes from a different source than what is considered "normal" in the organization, can be difficult to transfer into a traditional development process. To overcome such difficulties, it is important that ideas are conceptualized and contextualized properly (Backman et al., 2007).

To have a strong individual advocating the idea within the organization can also aid in the execution (Backman et al., 2007). Further, perceived external threats, an uncertain environment or high levels of external demands can also help by producing an urgency to act (Backman et al., 2007; West 2002).

2.2 Organizational learning

Learning and the capability to discover new knowledge is often described as important organizational abilities, in particular improving firm competitiveness through increased innovativeness (Cohen & Levinthal, 1990). Yet, the concept of learning has traditionally been confined to the individual acquiring knowledge (Nooteboom, 2000). Vygotsky and Dewey, introduced social constructivism and with it a social context to the concept of learning. They argued that communication and interaction enhance learning (Phillips & Soltis, 2009). Social constructivism has later been developed by others like Kolb, and now form one of the foundations of organizational learning theory (Dixon, 1999).

Two major concepts describe an organization's ability to learn, organizational learning and learning organizations. While some scholars differentiate the concepts (e.g. Kontoghiorghes et. al, 2005), most define both in terms of to creating and maintaining learnings in the organizations memory (eg. Argyris 1999; Fiol & Lyles, 1985; Garvin, 1993). This thesis will use any literature focusing on how organizations can learn regardless of the label used and will use Garvin's (1993) definition:

> "A learning organization is an organization skilled at creating, acquiring and transferring knowledge, and at modifying its behavior to reflect new knowledge and insights" (p.3, Garvin, 1993).

2.2.1 Frameworks on organizational learning

Several frameworks exist that help explain what mechanisms are at play to achieve organizational learning. Argyris single and double loop learning is introduced first. Then the 4I-framework will be presented, giving a more general explanation on how knowledge is obtained and spread throughout an organization.

Argyris (1999) describe the levels of learning with regards to past experiences with a concept called *single and double loop learning*, which is illustrated in Figure 1. *Single loop learning* is essentially problem solving, when a failure is discovered and a correction is made. Single loop is often described as a routine-based, lower level of learning, and can lead to changes in rules or system, or development of problem solving skills (Fiol and Lyles, 1995). *Double loop learning* occurs when questions raised of why the failure happened and includes an ability to prevent future failures. *Double loop learning* occurs in insights not related to structures and is non-routine. It could lead to new missions or directions, development of new culture or problem-defining skills (Fiol and Lyles, 1995).

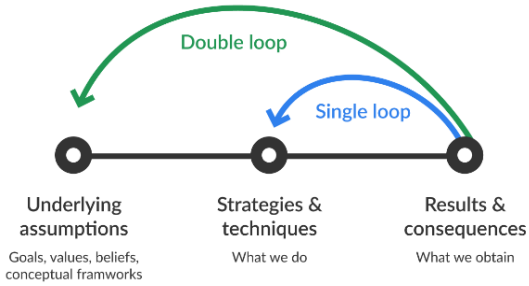


Figure 1 - Argyris (1999) double loop learning model

The 4I-model is built up by the processes *intuiting*, *interpreting*, *integrating* and *institutionalizing* and describe how they relate to individual, group and organizational level of learning (Crossan et al., 2002). The first process of the 4I-model, *intuiting*, is the recognition of patterns due to personal experience for an individual. The second, *interpreting*, the explanation of insights, can happen either at an individual or group level depending on to whom the explanation is directed. The third, *integrating*, the development of a common understanding and mutual routines, happens at a group or an organizational level. The last, *institutionalizing*, is the adaption of new structures, systems or strategies and takes place at the organizational level (Crossan et al., 2002). Huber's (1991), and Zollo and Winter's (2002) frameworks of organizational learning have similar processes and levels connected, which is shown in Figure 2.

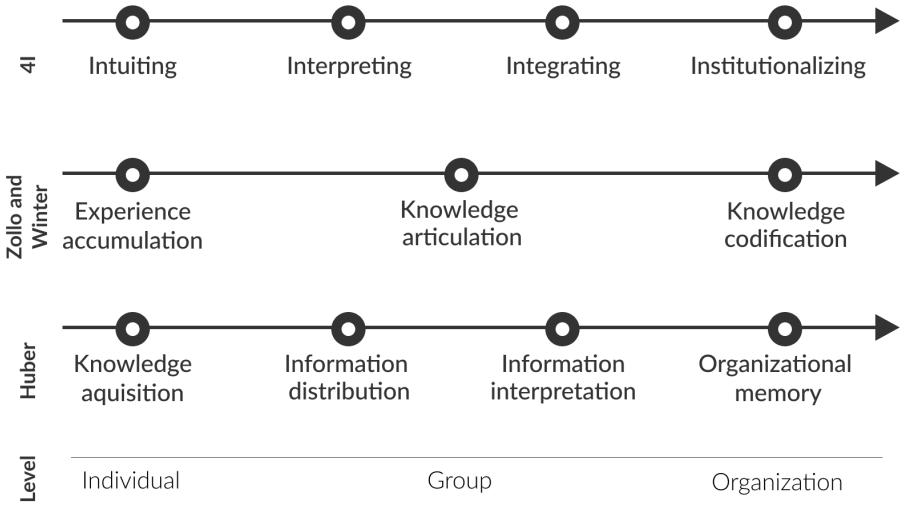


Figure 2 – A comparison of 4I framework (Crossan et al., 2002) to Huber's (1991) and Zollo & Winter's (2002) organizational learning frameworks

Huber (1991) discusses experimental learning as an important mechanism of acquiring new knowledge for individuals and organizations alike, but experiments are seldom supported by organizational administrators. Similarly, Garvin (1993) argues that experimentation is an essential skill for organizational learning, and that is particularly useful to acquire knowledge that allows the organization to explore new opportunities.

2.3 Reflections on previous research

Even if exploration as such is widely discussed, the concrete application does not seem to have received much scholarly attention. Many similar perspectives and names on exploratory processes exist, our interpretation of the perspectives is summarized in Figure 3. It is an iterative process, consisting of scoping, ideation, conceptualization, testing and integration. Our initial understanding is that the CoCreation workshop studied in this thesis contributes to ideation in the exploratory process, and potentially provides a starting point to the upcoming conceptualization of the options generated.

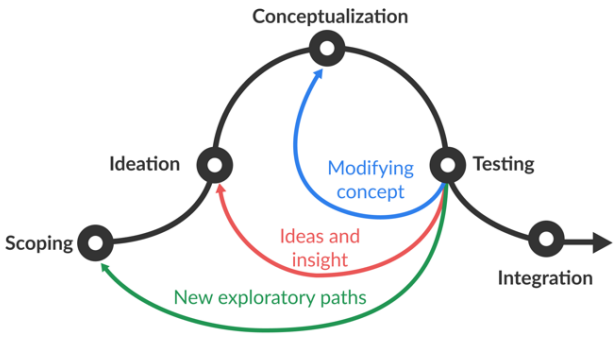


Figure 3 - Exploration process summary

It is important to keep in mind that neither workshops nor great ideas are enough to achieve innovation. Ideas have to be integrated to create value. (Govindarajan & Trimble, 2013; West, 2002). Thus, much attention in this thesis will be directed to what needs to surround and support an ideation workshop to extract value. In literature, we have not found a complete framework for what needs to be in place during and around a workshop, to create value. The main contribution from this thesis will be providing such a framework.

On a more general level, consensus seem to exist around exploration and experimentation being important to an organization's ability to both innovate and learn (e.g. Zollo & Winter, 2008; Garvin, 1993; Huber 1991). Many scholars have also concluded that organizational learning is important to innovation capabilities (e.g. Cohen & Levinthal, 1990; Argyris, 1999; O'Connor, 2008). Yet, after literature review it seems that few have gone beyond concluding one is important for the other, which means the (most likely complex) mechanisms behind how they are connected are largely unexplored. While we do not think, we can help uncover those mechanisms, by applying both an innovation and learning perspective to a specific element of exploratory process, we hope to reach a deeper understanding on how value can be derived.

3. Methods

This chapter will describe the overall research design and research process, followed by methods used for data collection and analysis.

3.1 Research design

This study is a qualitative, multiple case study of 6 organizations that have participated in CoCreation workshops with RISE. As the goal of the research was to evaluate the value and effects of the CoCreation workshop in practice, a case study approach is deemed to be the most suitable research design (Siggelkow, 2007). The qualitative approach was deemed most appropriate as little prior work exist resulting in open-ended research questions (Edmondson and McManus, 2007).

An abductive approach to theory development have been used, following Dubois and Gadde (2002). It means that an initial framework was developed from theory. The framework has then been matched to empirical findings iteratively, in a systematic combining process, resulting in the developed framework proposed in Chapter 7.4.

3.2 Research process

In Figure 4, an overarching outline of the research is outlined. Even if it is outlined as a linear process, it is worth to note that it has had iterative elements going back and forth between literature review, case studies, analysis and development of framework.

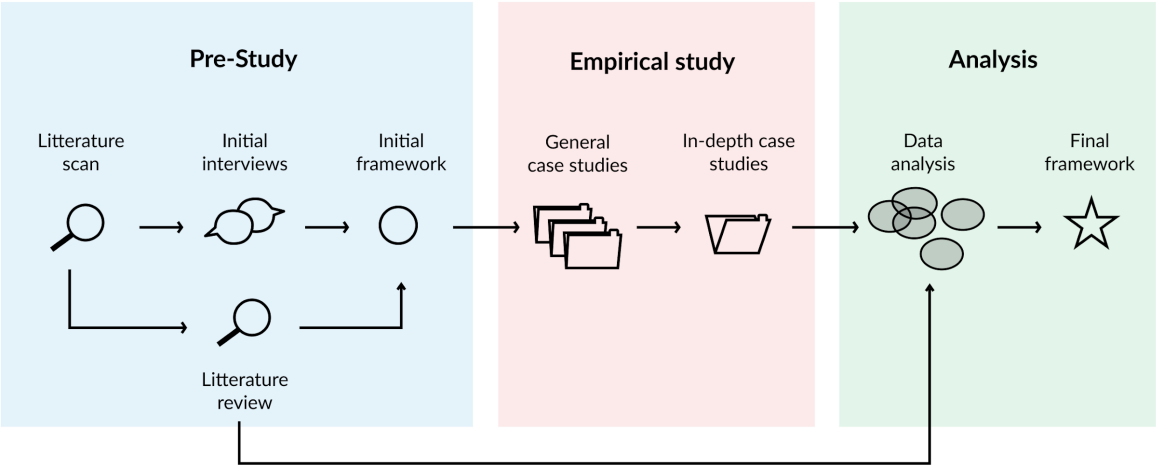


Figure 4 - Research process outline

Pre-study

A pre-study was made to get a better understanding for the field and used to narrow down and make the field of research tangible. The goal was both to exploring specific topics that would be relevant to study from a scientific point of view as well as for RISE, and to create an analytical framework. A literature scan and review was done from the two literature streams

relevant for this thesis, exploratory process and organizational learning. The literature review was complemented by initial interviews with informants from RISE, and innovation consultants, to understand the practical realities of the field.

Result from the literature review and the initial interviews was combined with the researchers own experiences of both participating and organizing workshops to create an analytical framework. The analytical framework was used to get an understanding of what areas that should be studied.

Empirical study

The empirical study was composed of case studies with organizations that had taken part in CoCreation workshops following the specific format studied. As seen in Figure 5, six out of the ten organizations that have participated are included in this study. Three of these organizations did the workshop as a part of a pilot-project, meaning they did not pay, which could have affected results. One additional organization was studied. That organizations workshop format was found too different to the others; thus, the organization is not included further in this study. The choice of cases can be described as a convenience sampling, as it has relied on which organizations have answered a request for interviews. Since this study is a qualitative study there is no value in considering all cases. Still, the number of cases seem to be a reasonable amount to be able to compare and find patterns (Esiasson et al., 2017).

Figure 5 - Timeline of CoCreation workshops

The empirical study was divided into general case studies and in-depth case studies, see Figure 4. The cases where an in-depth study have been done are shown with a larger circle in Figure 5. Due to the study's qualitative approach the data collection was focused on a deep contextual understanding of the situation. To get insights about the cases, general case studies was made by interviewing people responsible from the case organizations, see Appendix A. The in-depth study contained interviews with workshop participants from both RISE and the organization. In this case, a purposive sampling was used which according to Eisenhardt (1989) is most suitable for case studies. The organizations, Länsförsäkringar Alliance and LKAB, was chosen since they had most activities after the workshop. Interviews was made with participant who have been involved or have insight in the post workshop activities, see Appendix A.

Interviews where complemented by participating observation and a survey conducted during the workshop with Sveriges kommuner och landsting, SKL. To complement the case findings, a survey was done with participants from the SKL workshop, which was used to give some

quantitative conclusions from participants and to see if answers differed between participants' roles and backgrounds.

Analysis

An initial data analysis was done in parallel with the empirical study to get more information to guide the following steps. Interviews and survey text answers was analyzed thematically, while quantitative parts of the survey were analyzed statistically. The analysis was made independently from the initial framework. It means that themes were created regardless of previous analytical dimensions. A final analysis was made after the empirical study with the goal to produce a final framework developing theory in line with findings. The final framework is mainly based on empirical findings, but since a qualitative study cannot exclude theory, findings were combined with theory from the initial framework. Quotes used to illustrate themes are freely translated to English by authors when the interview was done in Swedish.

3.3 Data collection methods

For case studies, using different methods of data collection can be a way to increase understanding, as different types of data complement the understanding from the other (Eisenhardt, 1989). As described above, the primary data collection method in the study was interviews, which was supplemented by observations and a participant survey. Each method will be described below.

3.3.1 Interviews

Interviews was made as primary data collection method. Interviews have the benefit of asking for further information and find out why a person answers as they do, which makes them suitable for this kind of study (Esiassion et al., 2017).

Thematic interview guides were created, see Appendix B, since there is no need to ask every respondent the same question in a qualitative study (Kvale & Brinkmann, 2014). Questions and transitions was made to support the interviewer but where not necessary to follow as long as the themes in the guide was covered. To make sure that the questions was relevant and understandable, the first interview guide was tested with two persons and re-designed were needed (Esiasson et al., 2017)

All interviews started with giving both respondent and the organization they represented the opportunity to be anonymous. Further, they were asked if the interview could be recorded. The respondents also got the opportunity to see and approve their quotes before publishing the report.

In total, thirteen respondent interviews were held, see Appendix A. Of those were seven held with respondent peoples from the organizations and six with workshop participants. Due to convenience, most interviews were made over phone or skype, even if interviews are best when you can see each other's reactions (Kvale & Brinkmann, 2014). They took between 50-90 minutes depending on how much the person had been involved in pre- or post work and what results the workshop gave.

In most cases, both researchers participated in the interview, with one asking most questions and the other taking notes and asking follow-up question. The notes were used to write down some immediate reflections after the interview. Notes and reflections was later used to transcribe relevant parts of interviews, as all interviews were recorded. According to Esiasson et al. (2017) this is a good compromise to save time but get data that is easier to analyze.

3.3.2 Observations

Observations were made by the two researchers, who participated in the workshop held with SKL. Observation studies help researchers by letting them see a process or a structure with their own eyes, to see what people actually are doing and not only what they are saying that they are doing. It can also confirm respondents' stories. Further, observations are a good way to notice structures that the other participants might not notice themselves (Esiasson et al., 2017). Notes were taken about things that happened during the workshop and reflections were written down after each workshop day.

3.3.3 Survey

In addition to cases, a survey was made closely after the SKL CoCreation workshop to evaluate the workshop. Surveys is often used to find how common responses are in a particular population and is thereby often used to draw quantitative conclusions (Esiassion et al. 2017).

The survey was digital and send out to all participants. It contained both scale-questions and predefined answers to draw quantitative conclusions and open asked questions to give the participants opportunity to respond more freely (Essiasson et. al, 2017). The questions were based on reflections from observations made during the workshop to see if it was possible to confirm the researchers views with other participants.

40 of the 57 participants (excluding the researchers) answered the survey giving an answering frequency of 70%. That answering frequency can be seen as high enough for the results to be reliable (Essiasson et al., 2017). The demographics of the answering participants are summarized in Chart 1 and Chart 2.

Chart 2 - Participants' past experience of similar workshops

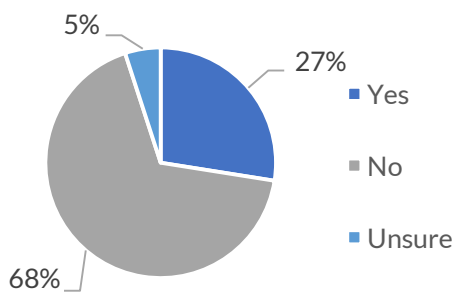
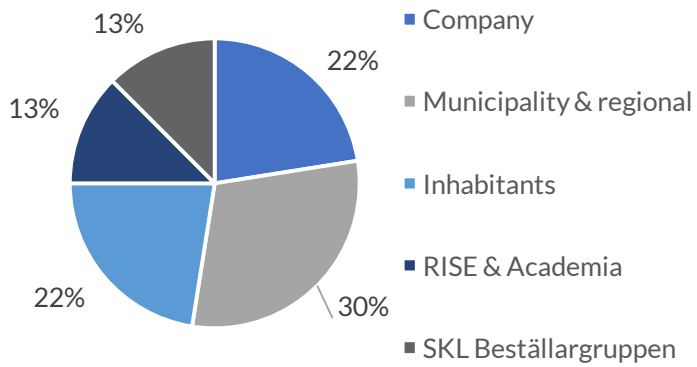


Chart 1 - Participants' roles in workshop



3.4 Analysis and interpretation

The methods for analysis and interpretation of results are described below, separating thematic analysis of qualitative data and statistical analysis of quantitative data.

3.4.1 Thematic analysis

A thematic analysis method was used to analyze interview data. The purpose of an thematic analysis of qualitative interviews to find patterns in answers, rather than counting answers (Esiassion et al., 2017). To facilitate pattern finding in the immense amount of data qualitative interviews render, memos are often used. In memos, parts of an interview, quotes or own notes is written down and is then used to compare and draw conclusions.

In this study, quotes or parts of interviews were marked with different colors depending on whether they related to expectations/intent and values, the workshop or post workshop activities. These quotes were interpreted by researchers, by deriving the essence of each quote and writing down key-words. The researchers first interpreted the interviews individually, these interpretations were then compared and discussed. Memos were created by summarizing quotes to key-words and then analysed case by case. The method of mapping memos (Esiassion et. al, 2017) was used to find opinions related to the organization's expectations and intent, themes affecting the workshop, post workshop activities, and outcomes and values.

The same method was used to find patterns between the different cases. Themes found for each case was compared and mapped into analytical dimensions. The overall process is illustrated in Figure 6.

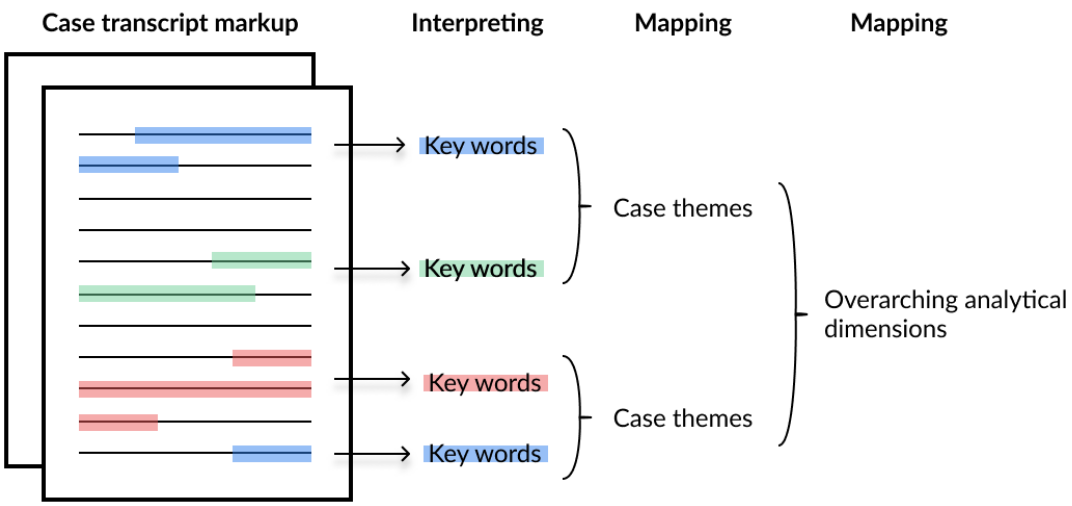


Figure 6 - The thematic analysis process applied

3.4.1 Statistical analysis

The statistical analysis was made in SPSS to check if there were differences between the individual's perception of the workshop related to what background the participants had.

To analyze if there existed some differences in means for expectations, satisfaction, personal contribution, complemented knowledge and group dynamics, the different groups were compared. To see if the results are statistically significant, statistical tests were made using the t-test and analysis of variance (ANOVA). A t-test was done when there were two groups to compare (e.g. between participants who had past experience of similar workshops and those without) (Field, 2009). An ANOVA omnibus test using the F-statistic was used to check mean differences between several groups, and was used for roles, as more than 2 groups existed. In case of a significant omnibus test, Duncan post-tests was used to check differences between individual groups (Field, 2009).

A linear regression model was used to check possible correlation between first expectation and satisfaction, and then, personal contribution with complemented knowledge and group dynamics (Field, 2009).

Outcomes from the workshop were also analyses by checking if different roles had different outcomes. It was made by converting pre-defined answers to binary variables. For such data logistic regression could be used to see whether results are significant, but sample size was too small to apply in this context (Field, 2009). Therefore, differences were only compared in percent of how many had chosen each alternative and not statistically checked.

3.5 Method discussion

Overall the study was performed according to recommended design and method, which is one of the most important parts in increasing a study's reliability (Kvale & Brinkmann, 2014). During the study, several data collection methods were used. According to Eisenhardt, (1989) it can enhance understanding of the context.

Questions can be raised regarding the analytical framework and choice of theory. The fact that the analytical framework is not based on one theory or an existing framework can result in dimensions being missed. Having a pre-existing analytical framework can also create biases in the empirical study and analysis, were new aspects are likely to be missed and data could be misinterpreted (Dubois & Gadde, 2002). To try to overcome that, the analytical framework dimensions was only used to create interview guides that covered those dimensions as well as more general questions. In the thematic analysis, the only the overarching linear process proposed was used, and dimensions added only later. Further, it has been argued that biases always exist, and building an initial analytical framework is actually a good way to explicate and make those biases clear to the researchers themselves as well as readers (Dubois & Gadde, 2002).

Another bias that probably affected the study is the researchers own experience in workshops as participants and organizers. It has clearly affected the construction of the analytical framework, were assumptions were made about how a workshop process works, and thereby probably also interview guides. Further, it could have affected the analysis of the interviews

as well. Even though this experience has given researchers a bias, it has also provided researchers with contextual knowledge of the field of study that is likely to have improved the researchers understanding of the topic. Overall, it makes it difficult to conclude whether this bias has affected results in a mainly negative or positive way.

In qualitative studies, analysis lies in interpretations in answers. Reliability can be increased if more than one interprets the results (Kvale & Brinkmann, 2017). In this study, both researchers were marking quotes in each interview. Were different interpretations were made, the interpretations were discussed to reach consensus (Hedin, 2011). One final check was also made by asking all respondents read their organizations case descriptions and quotes to see if their answers were correctly understood.

The opportunity for respondents to give their opinion has both up and down sides. Giving respondents opportunity change their answers so they are correctly understood could increase the reliability (Corden et al., 2006). It is also a matter of ethics, as it makes it possible for respondents to control how they are interpreted (Kvale & Brinkmann, 2017). Giving the possibility to see quotes also result in respondents not being happy with the picture of themselves, and trying to change quotes to be more flattering (Corden et al., 2006). Another ethical aspect relates to anonymity. In this study, both interviewees and respondents on survey had the opportunity to be anonymous.

Generalizability is one of the study's biggest issues. Even the study was limited to the CoCreation workshop, there were some differences between the workshops. Further, the fact that this study only focused on one type of ideation workshop also makes it questionable whether results can be generalized to any ideation workshop.

Regarding the survey, it was only made with one of the case organizations. The reason for that was because the workshop was conducted during the study, and the survey was mainly a follow up on the researcher’s observations. Arguably, the survey should be made with other case organizations to draw general conclusions. Especially since the SKL workshop was focusing on needs and not ideation. On the other hand, it could be questioned if participants would have remembered details about the workshop after a longer period. Further, the survey was done additional and not as a primary data collection method. Thus, the benefit of getting survey answers from more organizations in this case did not outweigh the time it would have taken.

4. Analytical framework

In this chapter, the analytical framework used in this study is presented. The analytical framework is based on literature review of organizational learning and exploratory processes. The assumed process that different dimensions from literature have been mapped to is based on researchers own experience of workshop processes and informants practical experience. Further, dimensions are confirmed by informants' practical experiences. The framework aims to explain what dimensions affect the organization's utilization of results from the CoCreation workshop.

The analytical framework shown in Figure 7 consists of four different parts relating to a workshop process. It is presumed that the workshop process includes expectations and intent to conduct a workshop, a workshop, post workshop activities, as well as outcomes and values, including outputs from the workshop. Further, the workshop as such, and the post workshop activities contains analytical dimension that assumes affects outcomes and values from the workshop process.

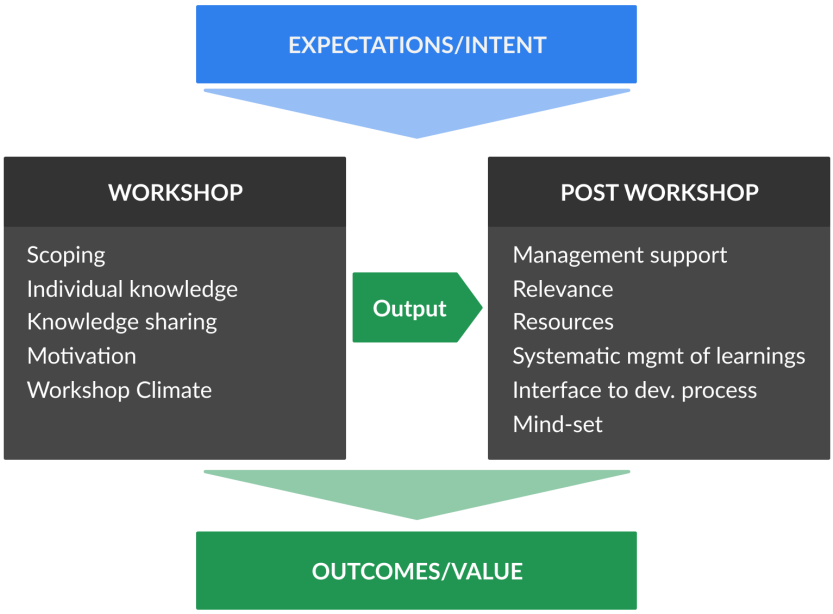


Figure 7 - Analytical framework

Analytical dimensions related to the workshop are shown in Table 1. It shows an explanation of what underlying concepts each dimension includes. For example, *Individual knowledge* includes a mix of participants' skills and knowledge as well as access to external knowledge.

Analytical dimensions for post-workshop process are presented in the same way as for dimensions for workshop, see Table 2.

Table 1 - Analytical dimensions during the workshop

Dimensions	Explanation	References
Scoping	• Definition of exploratory field • Type and broadness of problem is selected	Charue-Duboc et al. 2010; Zollo & Winter, 2002;
Individual knowledge	• Access to external knowledge, eg. open innovation and knowledge brokering • Mix of individual skills and knowledge	Rosenkopf and Nerkar, 2001; Chesbrough, 2012; Hargadon & Sutton, 1997; Börjesson, 2011; West, 2002
Knowledge sharing	• Conditions for participants to share knowledge Perspective-making and perspective-taking • Group dynamics	Boland & Tenkasi, 1995; Suominen et al., 2017
Motivation	• Individual people's commitment to the problem • Motivation to learn and share lessons learned • Vision	Nonaka, 2008; Lempiala, 2010
Workshop climate	• Positive view of failure • Courage to come up with crazy idéas and "forbidden thoughts" • Culture of questioning and tolerance • Balanced risk-taking.	Argyris, 1999; Lempiala, 2010

Table 2 - Analytical dimensions relating to post workshop activities and value capture

Dimensions	Explanation	References
Management support	• Management has understanding • Focus on the question • Recognition and rewards.	Kontoghiorghes et. al, 2005; Garvin, 1993; Nonaka, 2008; Fiol & Lyles, 1985; McGrath, 2001
Relevance	• Sense of urgency • Importance to the organization and individuals participating.	Backman et al, 2007; Zollo & Winter, 2002; West, 2002; Lempiala, 2010
Resources	• Budget • Time and available team members • Committed individual driving the process • Political influence • Contacts and networks	Cohendet & Simon, 2015; Dougherty & Hardy, 1996; Zollo & Winter, 2002; Kontoghiorghes et. al, 2005; Govindarajan & Trimble, 2013
Systematic management of learnings	• Systems and processes used to spread learnings • Could be as a part of a knowledge management system.	Kontoghiorghes et. al, 2005; Gavin, 1993; Charue-Duboc et al, 2010
Interface to development process	• Exploratory process coupling with "traditional" development process. • Fuzzy front end	Backman et al 2007; Cohendet & Simon, 2015
Mind-set	• Organization view of learning and exploration. • Risk-taking mind-set • Positive attitude towards changes and failures • Learn from mistakes	Garvin, 1993; Kontoghiorghes et. al, 2005; Martins & Terblanche, 2003; Zolo & Winter, 2002; Fiol & Lyles, 1985

5. The six CoCreation workshops

First, the general CoCreation workshop format will be introduced briefly. Then, the findings will be presented as cases, one for each organizations workshop. The order of the cases will follow the order they took place.

5.1 The CoCreation workshop format

A typical workshop lasts two days and involves representatives from the organization hosting the workshop, established firms and startups in the surrounding industry, as well as researchers from RISE and academia. Organizers from RISE facilitates and documents the workshop. The documentation can take different forms, for example the workshop can be recorded in video or audio. In some cases, a graphical recorder that illustrates the discussions have been involved.

Before the workshop, organizers from RISE and the participating organization discuss the problem description and purpose of the workshop. Adjustments can be made in the program or schedule to meet the organization's expectations. In some of the cases a Request for Proposal (RfP) have been written in this stage, to better specify the scope of the workshop. Then an invitation is sent out to relevant potential participants within the organization, RISE and the RISE extended network.

Day 1 of the workshops starts with an introduction so everyone understands the problem and knows what will happen during the coming days. The introduction is sometimes followed by an inspirational lecture, to get the right mindset, or an icebreaker activity. Then, there is ideation through brainstorming in small groups (6-8 people) with mixed backgrounds. This part of the workshop focuses on idea volume rather than quality. Ideas are written down on post-its. Sometime brainstorming starts with a creativity exercise. Day 1 ends with a presentation of all ideas from all groups. During the presentation, post-its are put up on a wall and clustered according to emerging themes.

The focus of day 2 is conceptualization, to take the ideas from the brainstorming one step further. In groups, participants pick clusters of ideas and try to evolve that cluster further through constructing a concept canvas (see Appendix E). The concept canvas contains a drawing and specific explanation of the solution. After the concept canvases are created, they are presented to the whole group again. The last part of day 2 is ranking of the canvases. This is done by voting. Each participant gets a number of votes and decides which canvas they think is the best. In some cases, this is followed by a ranking of the top canvas by different parameters, for example most impact and most economical.

After the workshop, RISE submits and presents all the results from the workshop. Usually concept canvases are re-typed for clarity and sometimes re-visualized in by a designer. Depending on what the organization want, further work can be done by RISE.

5.2 The case workshops

Each case includes a description of the organization, the background and intent with their participation, a brief description of how the workshop was performed and the results of the workshop. The results from the survey with SKL will be presented last, after the SKL case.

5.2.1 Atlas Copco/Epiroc

Atlas Copco is a Swedish multinational enterprise with operations in 180 countries, serving industrial, mining and construction clients (Atlas Copco AB, 2017). In this specific case, the mining business area has been studied. This area is currently part of a split of Atlas Copco corporation, and are together with the construction business area becoming its own company under the name Epiroc (Atlas Copco AB, 2018). Epiroc will be used to describe the business area involved in the CoCreation workshop henceforth. The host within Epiroc was the strategic projects and alliances department, responsible for long-term product renewal. Epiroc's business centers around small series of products tailored to customers, as each client has very different conditions in their mines. The mindset is described as very open to new ideas, as long as it origins in customer needs, which can be seen kind of demand pull attitude to innovation.

The workshop was initiated by RISE, who offered Epiroc to do a CoCreation workshop as a pilot within the EU program EIT Raw Materials. Being a pilot company meaning that Epiroc did not pay for the workshop, but provided facilities and the time of internal participants. It also affected intent of the workshop, as it was not an activity to get ideas, but rather seen as a way of trying a new type of workshop method. However, they hoped that it would result in more concrete ideas compared similar workshops they have participated to.

In the workshop, three issues were worked on. All issues were on a general level, trying to improve or solve problems regarding certain functionalities for future generations of the product. Due to internal constraints, the time for the workshop was reduced and it lasted 1.5 days. It included around 15 participants from RISE and different departments and functions at Epiroc. Internal participants both represented engineering and marketing. The workshop was perceived positively, due to inspiring facilitation and good collaboration within the groups in the workshop.

Overall Epiroc was happy with trying the workshop method, and a few interesting ideas came out of it. Since they related to a future version of the product, they did not have resources to develop them further. Instead, they were put in the organizations suggestion bank and not been processed further at the time for this study.

5.2.2 LKAB

LKAB is a Swedish state-owned iron mining and refining company, which produces highly refined iron products for the global steel market (LKAB, 2018). LKAB has been described to have a strong line-management. At LKAB, innovation seems to be based on creative and technically strong individuals collaborating with strong line managers.

Like Atlas Copco, LKAB was approached by RISE in the pilot-phase. The timeline of the RISE pilot-project lined up well with the timeline of an internal LKAB project, were a project team

had an idea that they wanted to develop further. The idea was to simulate pellets flow to better prevent breakage, so the topic of the workshop was then to figure out how such simulation could be made, and solving related problems. The opportunity was spotted by an innovation consultant involved in the project and the director for external cooperation who were then involved as organizers. The intention was to get enough input to the idea to be able to pursue it further as a project.

In total around 25 participants from LKAB, RISE, universities as well as suppliers of simulation software attended the workshop. Both before and during the workshop, the external consultant focused on the participants' ability to contribute. During the workshop, it was expressed through facilitation of group discussions. As the problem was quiet complex, specialists and their knowledge was needed to solve the problem. The workshop ended with participants making up a plan for further work and distribution of responsibility.

The main result was that a collaboration was started with an academic research group that was represented in the workshop. Through that collaboration and further work was done in the project, technical knowledge has been expanded and the simulation tool improved. At the time of the study, the project was put on hold as a result of a reorganization.

5.2.3 Boliden

Boliden is a Swedish exploration, mining and smelter company, with operations mainly in the Nordics (Boliden Group, 2018). The study was performed at the mining technology department, which is a centralized support function that develops technology for all the mining and production sites. Specifically, it was done within a R&D program focusing on autonomous mining vehicles. The aim of the program is to find new methods and ways of working for Boliden, i.e. innovation.

Just as Atlas Copco and LKAB, Boliden decided to do a CoCreation workshop after they were contacted by RISE and was offered to try out the workshop format as a pilot company. The department had previously done other idea generation workshops, and were interested in seeing whether a better way of performing such workshops existed. Since the workshop was initiated by RISE, Boliden did not have a specific problem they needed to solve nor a specific innovation area that they wanted to generate ideas within at the beginning of the process. Instead they were instructed to find a wide and yet specific issue, and in the end, they focused on mine reinforcement with concrete.

The workshop was done at a Boliden site and had a total of 30 participants from different functions at Boliden, companies active within the field and researchers from RISE. The internal participants were chosen to be open minded. The workshop was seen as a method they would like to continue with, but not something they would be able to do themselves Facilitation was perceived as important for the workshop success. It contributed to a open and creative climate, and made the workshop method clear to participants.

The intent and main value was trying out a new method for workshops. The interviewee pointed out that it brought ideas further into conceptualization than "ordinary" brainstorming sessions. Some interesting ideas and contacts were also made. None of these ideas have been processed further, and Boliden consider it RISE's responsibility to make

contact to drive ideas further. However, the interviewee has expressed interest in bringing three-four ideas further into a literature study.

5.2.4 Länsförsäkringar Alliance

Länsförsäkringar Alliance (LF) is a customer-owned Swedish bank and insurance company (Länsförsäkringar AB, 2018). The alliance consists of 23 regional companies that coordinate and collaborate through the holding-company Länsförsäkringar AB.

LF had seen a need of becoming more innovative to cope with societal change. Before, LF have made efforts to work in a more exploratory and innovative manner that has not been successful due to lack of structures and earlier experiences. Thus, with the goal of establishing innovation capability in the alliance, LF in 2017 created a new Head of Innovation role. While the intent was to establish innovation capability, it was clear that they did not want to build an innovation department. Instead they wanted to engage employees from regional companies within what is called *the Innovation Arena*.

The workshop was hosted within *the Innovation Arena* and was intended to create engagement and generate ideas to work further on in the arena's processes. It included around 70 participants with representatives from all regional LF companies and the holding company, RISE, startups, industry as well as non-profit organizations. Internal participants were chosen through a nomination process. Upon management request, two areas were chosen to work on in the workshop, *home* and *health*. To guide the work in the workshop, a vision was presented:

> "We are not selling insurances, we are creating the basis of a secure and safe life, free from injuries." -

While overall group discussion and climate is described as respectful and creative, interviewees think that more room for individual preparation would have made it better. Further, decisions on which ideas to take forward into canvases as well as the voting on concepts in the end was perceived as ad-hoc and unclear.

The fourteen concepts that the workshop resulted in were developed further, and tested to make sure they responded to existing customer needs. Three of those concepts were selected to become pilot projects. These pilot projects are still ongoing and providing further innovation. The Head of Innovation has spent a lot of time sharing results and lessons from the workshop and the process around it. It has created a lot of attention and drive around innovation within the alliance. The workshop also resulted in both the creation of networks and some marketing to external parties present.

5.2.5 Rusal Aughinish

Rusal Aughinish is a large European alumina refinery. The maintenance reliability group, that was responsible for the CoCreation workshop, have the main task of investigating potential maintenance improvements all over the plant. The plant operates in a very competitive market. This has led to a culture where people always look for smarter and more efficient ways of doing business, and welcome new ideas. Management also seem to have been important in establishing that mindset, as the interviewee puts it:

> "Management recognised that the way to survive was to be leaner and more innovative than the competition so they have always cultivated and supported this approach"

Rusal Aughinish came into contact with the opportunity to do the CoCreation workshop through the EU-program EIT Raw Materials. Just as the pilot companies, they got the opportunity to do the workshop for free except for the provision of facilities and the time of internal participants. For the maintenance reliability group, the format both seemed to fit their way of working and the tasks they work on. Before the workshop, work was done to find a good scope. Two specific issues were selected, both of large importance to bring down cost of maintenance. The first about maintenance of structural steel and the second about scaling and descaling of vessels. While hoping to get suggestions that would contribute to solving the problems, the expectation was that the workshop would not succeed, as the problems worked on are difficult and have been worked on extensively before.

The workshop was set at Aughinish plant, included a mixed group of participants from Aughinish, academics and participants from industry in Europe. In total, there were 45 participants. The interviewee thought that the different perspectives was great, but wanted more people from the industry. The workshop was described as creative and energizing due to a open climate and good group dynamics and discussions. The interviewee suggested that the number of ideas worked on in the workshop should have narrowed down earlier and by experts in the fields.

Right after the workshop, there was a list of ideas worthwhile to investigate further. Even if time was an issue, the organizer felt ownership for further processing the ideas. The ideas were presented to management and other relevant stakeholders at the plant. As ideas were tested, and the concepts turned out to not work. From this no further conclusions seem to have been drawn apart from that these ideas did not work. Still, it was perceived as a worthwhile method. Overall the workshop gave insights about the method, and extended internal and external networks.

5.2.6 SKL

Sveriges Kommuner och Landsting (SKL) is the Swedish association of local authorities and regions. It works both as an employer organization and as representatives for Swedish municipalities and regions. Within SKL several groups exist that help municipalities and regions coordinate and collaborate around shared challenges. One of these groups is called Beställargruppen, and is the host of the workshop studied. Beställargruppen coordinates procurement of welfare technology, specially focusing on digital solutions.

The workshop was a part of a current project, with the overall aim is to do what is called an *innovation procurement*, to help municipalities procure new innovative solutions. The innovation procurement process is based on setting functional requirements based on actual resident needs, instead of requiring a specific technology, which is what municipalities usually do when procuring welfare technology. To define such functionality in a relevant way, Beställargruppen are doing a need analysis for residents whom require support to maintain or increase their independence. The workshop was a part of this need analysis, and intended to bring in well-defined needs from perspectives that the group had not seen before. In contrast to the other workshops, this workshop was done to find needs and not solutions.

The workshop included around 60 participants from RISE, SKL, municipalities and companies active within the field of welfare technology. Further, it included inhabitants in need of support to remain independent. Overall the interviewee thought that it was a positive climate, but there were a few groups were certain participants were perceived as dominating, making it hard for other participants to contribute.

Values from the workshops include contacts made and the needs brought up. Worth to note is that while needs were brought up, during the workshop solutions was also generated, forcing organizers to step in and clarify the scope of the workshop to participants.

5.2.7 The SKL Survey

Here results from the SKL survey study that are used for further analysis are presented. All diagrams, tables and results are presented in Appendix C.

Overall the survey shows that participants were satisfied with the workshop. Participants felt that they could contribute, with a mean of 3.79[1]. They also feel that others complemented their knowledge with a mean of 3.72[1]. Further most seem to think collaboration was good, with a mean score of 4.08[2]. There are small differences between answers depending on participants' roles and if they had former experience in similar workshop. These differences were in most cases not proved to be statistical significant.

What is proved to be statistically significant, is that there are differences between participants' expectations depending on their role and previous workshop experience. There is also a correlation between how well participants felt that they could contribute and whether they thought others had complementing knowledge.

Table 3 shows outcomes for individuals participating to the SKL workshop. The table shows the percent of participants answers for each outcome for all participants and for each group of roles. There seems to be some differences in which outcomes the different groups have got, but those differences cannot be statistically tested due to the small sample. Worth to note, is that there is only a small number of participants that felt that they did not have any particular outcomes, 5% in total.

Table 3 - Individual outcomes from the SKL CoCreation workshop

	Contacts	Knowledge about other organizations business	Insights about resident needs	Knowledge about methods	Inspiration/ energy	Other knowledge	Nothing particular
Company	78%	67%	89%	67%	56%	11%	0%
Municipality/regional	50%	25%	33%	58%	42%	33%	8%
Inhabitant	22%	56%	78%	56%	44%	56%	11%
RISE/Academia	80%	80%	40%	40%	60%	0%	0%
SKL Beställargrupp	80%	60%	80%	80%	60%	20%	0%
All participants	**58%**	**53%**	**63%**	**60%**	**50%**	**28%**	**5%**

[1] On a scale of: 1 - Not at all, to, 5 - To a high degree

[2] On a scale of: 1 - Very bad, to, 5 - Very good

6. Findings and analysis

In this chapter findings and analysis are summarized from all the cases described in Chapter 5. The analysis follows the analytical framework presented in Chapter 4. Themes found in each of the individual cases have been collected, compared and interpreted to form overarching groups. Quotes are used to illustrate the groups and themes discussed. A full case-by-case analysis for the individual cases is presented in Appendix D.

The outcomes and value from the workshops will be presented first, followed by the expectations and intent of the participating organizations. Then, the identified prerequisites for the workshop itself as well as the prerequisites for value capture after the workshop will be presented. In the end, a brief summary and comparison of the cases will be made.

6.1 Outcomes and value

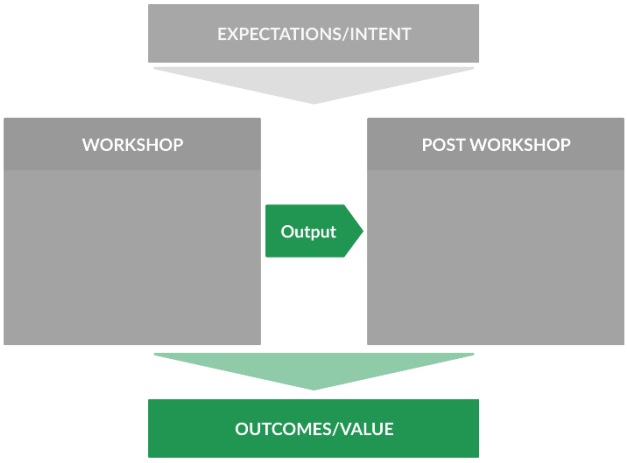


Figure 8 - Analytical framework, with emphasis on outcomes and value

The outcomes and value from each of the workshop processes studied differ. Outcomes and value captured came both from the workshop itself and the post workshop activities. Concrete output from the workshop is also included.

The main output from the workshop itself described by RISE is conceptualized ideas. These ideas have been noted down on a concept canvas during the workshop as described in Chapter 5.1. Looking at the cases, all interviewees described that they have gotten new ideas (or input to needs in the SKL-case). Whether there were many new ideas to the organizations, for just a few vary between cases. These ideas, or outputs from the workshop can also be seen as an input to the post workshop activities where these ideas can be processed further, see Figure 8. That the ideas are conceptualized has been described as a key difference to other workshops. By conceptualizing the ideas, they become more concrete and thus easier to investigate further. As one of the interviewees said:

> "... [the workshop] is quite similar to what we usually do, but we took it two steps further here."

When ideas have been processed further post workshop, it seems to have generated more value, both from the project itself and in terms of insights and learnings from the project. At LKAB it has been described to have improved one of their current solutions, as well as generating a lot of valuable knowledge. Overall this is illustrated well by the following quote from one of the organizers at LF when reflecting on their extensive post workshop activities:

> "It is a process of refinement. From the beginning, we had found a lot of minerals. But we haven't got this diamond or gold, we have to take it further. And as we go, we learn."

In the Rusal Aughinish case, processing ideas have made them understand that some solutions did not solve the problems they intended to solve, which arguably is valuable, even though it's not always perceived that way.

Learnings, insights and new knowledge seem to have been derived from both the workshop and the post workshop activities, consisting important value for participating organizations and individuals. The scope of the learnings is quite broad. Some, especially those with little activities post workshop like Boliden and Epiroc, has mainly learned about the workshop method itself. In the survey, learning about the method is also the most common personal outcome with 60% of respondents. Further, half of all the respondents in the survey, more if they participated in their professional role, have learned about other organization's business. Others have gained important knowledge relating to the problem(s) dealt with in the workshop, like LKAB where new knowledge is described as the one of the most valuable aspects of the workshop.

Another outcome described as a valuable are contacts and networks created by meeting and working with people from other organizations and from other parts of their own organization. In the SKL workshop, 58% of respondents said they got new contacts, and an extended network have been mentioned in all of the other cases too. In some cases, these contacts have resulted in sustained collaborations with external parties, bringing even more learning as in the LKAB case. In other cases, the most important networking has been internal, as in the LF case, were internal participants got the opportunity to get to know other people interested in the same thing but in other parts of the country or the organization.

In several cases an outcome of the workshop has been described as a personal energy and motivation boost. In the Rusal Aughinish case, the value of the workshop is summarized like this, even if the ideas they got did not turn out that well in implementation, energy is still mentioned as a key result:

> "We all agreed that it would be a great exercise to carry out [...] I would say it was energizing, it was interesting but unfortunately none of the ideas from the workshop survived subsequent evaluation to become implemented solutions"

A related organizational value to energy is attention to innovation work. This is a value that has been mostly seen in the LF case. There, getting attention and organizational commitment to innovation was even mentioned as one of the key aims from the workshop and the process around it. This aim seems to have been reached. For example, it seems that more people want to get involved in the innovation work as a result of the attention, and the process has become something that is talked about throughout the organization.

To sum it up, it seems that this type of collaborative ideation workshop and the subsequent processing can create outcomes and value in different areas. Outcomes and values found in this study can be summarized within five areas:

- New ideas - including the value created by processing the ideas
- Knowledge and insight - about methods, the problem and other organizations
- Contacts and networks - personal and professional contacts through meeting others
- Energy and motivation - creating personal engagement and commitment
- Attention to innovation - workshop process becoming a talking point in the organization, can be a part of creating organizational support for innovation

6.2 Expectations and intent

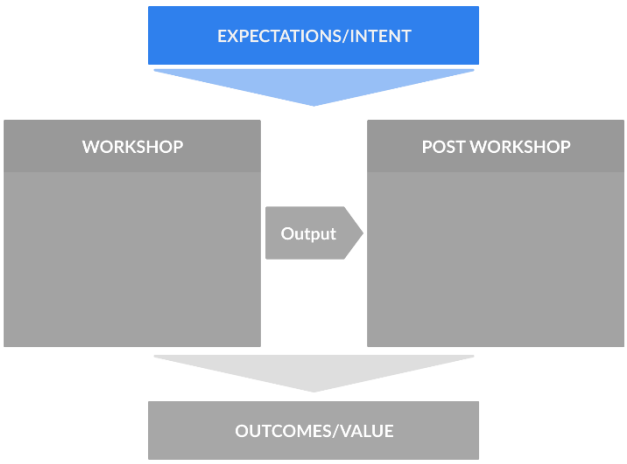


Figure 9 - Analytical framework, with emphasis on expectations and intent

The organization's expectations and intent differed between the cases. Expectations and intent did also differ within cases. It can be illustrated by the Rusal Aughinish case. While concrete expectations on the workshop were low, the intent was clearly for it to contribute to solving difficult and important problems.

As mentioned, Rusal Aughinish had no expectations. Others, like Länsförsäkringar, wanted to create engagement by showing what their vision and innovation work means in practice. Still, both these two are cases where ideas have been processed further. So, expectations on the workshop does not seem to be able to explain why ideas have been processed post workshop.

Even if the organization's expectations seem to not affect the post workshop activities, individual expectations might affect their motivation, effort and contribution. This has been brought up in the interviews. However, in the survey, no correlation is found between expectations and other measured dimensions. Thus, no general conclusion can be made.

If intents instead are compared, Rusal Aughinish, SKL and LKAB all intended to get input to a specific project/problem. Länsförsäkringar seem to have intended to kick of their innovation capability building. Boliden and Epiroc's intent was to explore a new method. The two cases were no post workshop activities have happened both share that their intent was not to get

tangible results to process further, but rather getting to experience a new type of workshop. In the cases were the intent was to either get input or to start an innovation process, more has happened after the workshop. So, overall there seem to be a correlation between intent and whether there has been a process after the workshop, and a correlation between intent and what value can be derived from that process.

6.2 Prerequisites for the workshop

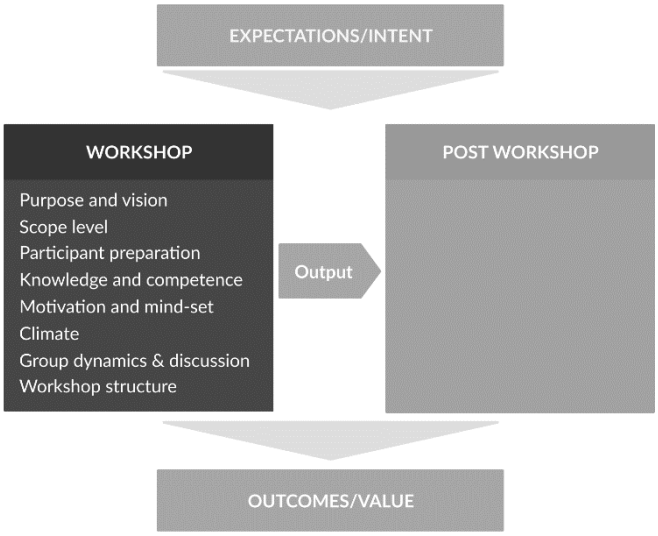


Figure 10 - Analytical framework, with emphasis on workshop prerequisites

From analysis of all the cases, key prerequisites for a collaborative ideation workshop has been found. The prerequisites are shown in Figure 10. The prerequisites affect the workshops potential to result in valuable output and outcomes. For example, the scope level could affect which ideas that comes up and what knowledge that is gained. Each prerequisite is explained separately below.

Scope level

All workshops have differed when it comes to the workshop scope. In some cases, more than one problem or area has been discussed. A common theme is a desire to focus on one problem and put the scope on a concrete level. Further, in cases when an area has been the scope, a wish has been to formulate the scope as a problem to solve instead. It is difficult to conclude which scope level is optimal. A broad scope might on one hand enhance the probability of creative and visionary ideas. On the other hand, the broader the scope, the higher the risk of the ideas coming out of the workshop being non-concrete and unfeasible. As one interviewee discussed, problem could be on detail, function or visionary level, were his former experiences was that there is a risk that nothing relevant comes out from it if too visionary:

"I think you should avoid that [visionary] level, and rather be on the function or detail to feel that you make something that makes sense."

Others instead refer to the levels of a problem as simple, complicated and complex. The opinions differ on what type of problem this workshop is suitable to solve. The organizers from RISE claim that it can be used to solve all types of problems. When asked about which levels of problems the workshop is suitable for an interviewee answers:

"This type of workshop as it is structured now might be suitable for complicated problems."

Purpose and vision

A clear vision and/or greater purpose of the workshop seems to affect participants' motivation and commitment. In the LKAB case, it was clear that the workshop should result in further work. The respondent felt that it created energy in the workshop:

"So, [you have] to gather around a problem with a will and plan to take it further. Because then people dare, then people feel that it is worth putting their energy in it."

LF's vision created a mind-set that worked as a guidance for participants, and forced them to think in a less traditional way. The goal was to expand the horizon beyond insurance, but the focus of the vision was also perceived as limiting the scope to ideas related to the insurance business rather than LF´s other business areas.

Participant preparation

Making more information available beforehand, and thus giving the participants a possibility to prepare has been discussed as a way to develop the workshop format. It relates to information about method, purpose, and scope. Lack of preparation could affect motivation, the knowledge the participant brings into the workshop and by extension the ideas that come up. Further, it means that the thinking process of the participant starts first at the workshop. If participants instead have the possibility to start thinking before they are likely to come up with better and more thought through ideas. As one the external participants from RISE puts it:

"It's great to come up with ideas, but it's really important to come up with good ideas and relevant ideas so [the organization] think - Yes, let's go. To do that you must have thought it through. Most times, you haven't."

Knowledge and competence

What knowledge and competence participants have seems to be important to create good concepts and to learn from the workshop. Both the specific knowledge and competence of individual participants, and the mix of perspectives different backgrounds bring, have been mentioned as positive themes in the cases.

In the LKAB and Rusal Aughinish cases, specific knowledge and perspectives brought in by individual participants is pointed out as important for getting input to their problem. In the LKAB case it was a researcher who contributed most, in the Rusal Aughinish case it was people from the industry, as the interviewee puts it:

"The kind of thing that was great was that they could say *In our company we do X*, rather than *I heard people do X*. They were able to talk about what they were actually doing."

In other cases, it has been the mix of competences that was important, which is exemplified well by this quote.

"The first worked with communication, the second worked with the settlements of claims, a third in…. That mix was really great. [...] We also got many external [participants]. And had a mix with research. I've heard from many people that it was the winning formula. [When asked why?] You get new perspectives that you haven't heard before which was great."

Motivation and mindset

An aspect that seem to be important to how the workshop proceeds are how motivated and open-minded the participants are. Some companies have chosen internal participants depending on how motivated they likely will be. An interesting example is that LF required a written motivation from participants that had been nominated to participate, which resulted in a commitment before the workshop started. As an interviewee puts it:

"What was even better was that we asked [the participants] to motivate why they would be involved. It also required some reflection. *Is that really the right person? Am I the right person?* It made you feel committed even before you got there too, which was great."

Both internal and external participants have also found the method itself energizing and enjoyable, which is motivating in itself. Further things affecting individual motivation positively are the importance of the workshop to the participant's specific position and work, or to the organization in general.

Climate

The goal of the workshop is to create ideas, thus, arguably a climate encouraging creativity is desirable. When discussing the climate at the workshop with respondents, it has been described as respectful, open, positive, creative or friendly. In interviews, inspiring facilitation and methods encouraging creativity have been mentioned as contributing factors to this type of climate. The fact that participants generally don't know each other at the start of the workshop also seem to affect the climate and has both up and down-sides. A respondent puts it like this:

"You do not know each other, which means that it can take time to get open minded, but everyone is very nice to each other. If you know each other from before then you can have open discussions [faster], but you are also more prone to be critical."

Group dynamics and discussion

Group discussions seems to be an important prerequisite to the process of coming up with good ideas. As one participant states, when discussing how they came up with the best ideas:

"It was the discussions we had. We discussed our way to it. It is possible that if we had been alone, each of us would have taken the safe ideas. Now we were in a climate where no limits existed [...] We dared to try a little bit."

Group dynamics is important to create such discussions. In some cases, interviewees seem to think that the format only fits to those who like to raise their voice. It could result in missing important ideas or knowledge by those who need more time to think things through. Further dominant people can affect the rest of their group, especially those in the group who are not

comfortable speaking up. Even if this has been raised as a concern, not the least in the SKL case, the survey results seem to tell a different story. Participants overall seem happy with the collaboration with a mean score of 4.08 (on a scale of: 1 - very bad, to 5 - very good).

For discussions to be productive when it comes to sharing knowledge and creating new ideas, it seems to be important that participants are on a similar level of knowledge and experience of similar methods. Supporting this conclusion is that in the SKL-survey exist a statistical significant correlation between how well participants felt that they could contribute and whether others had complementing knowledge. So if you feel like you can contribute, you are also more likely to think others have complementing perspectives. There has for example been reflections around internal participants not being as used to this type of workshops as external participants, affecting their ability to contribute.

But even if all participants are on the same level when it comes to workshop experience, it is still not certain that they can meet. They also need to speak the same language. One respondent states:

> "There are nuances in languages and details. But ... I think we were in a position where we understood enough, and he managed to simplify his description to a level where we understood what he said. So, it's probably a combination of your level of knowledge and where you can meet. "

Workshop structure

Workshop structure has been mentioned frequently as both a success factor and a challenge. Aspects raised range from facilitation of the workshop and the decision-making processes, to the time for problem solving.

Clear and inspiring facilitation has been raised as important for both this workshop format and workshops in general. Facilitation has an important role to play in helping participants know what to do at all times, which gives focus to the activity and probably improves the outcomes. One respondent stated:

> "I thought the facilitators were very professional. They guided us through it in a really good way."

The part that seems to have been most unclear during the workshop relates to decision making, both when it comes to which ideas to develop further into concepts, and which concept to vote for. Questions have been raised on which ground decisions should be made, and if the quantity of ideas makes it more difficult to make well-grounded decisions. Overall, a lacking decision-making process could result in missing good ideas.

In the Epiroc case, the workshop was shorter compared to others which returned in lack of time to solve the problem. On the other hand, other participants found that time pressure can result in effectiveness and is seen as a positive aspect.

6.3 Prerequisites for value capture post workshop

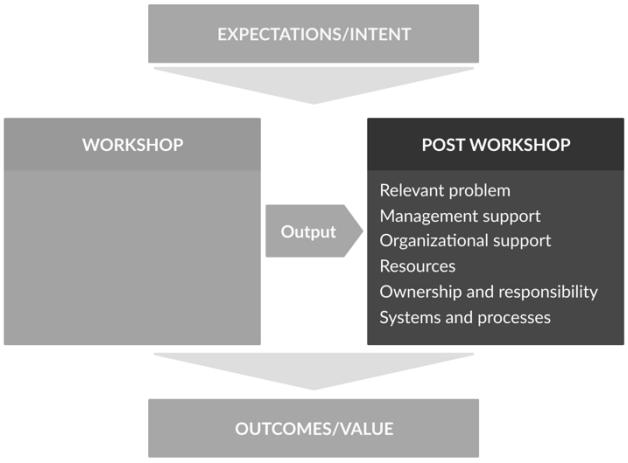


Figure 11 - Analytical framework, with emphasis on prerequisites for value capture post workshop

From analysis of all the cases, key prerequisites for value capture in post workshop activities has been found. The prerequisites are shown in Figure 11. The prerequisites affect how potential outcomes and values are captured by the organization. For example, it is important that the problem solved is relevant for the organization to process it further. Each prerequisite is explained separately below.

Relevant problem

Solving a relevant problem in the workshop, seem to be central to whether solutions are further processed post workshop. Two of the pilot workshops, Boliden and Epiroc, have not had any activities after the workshop. One reason for that could relate to the fact that those two companies had non-urgent problems. When discussing why no further work has been made, one respondent reflects upon it like this:

"[...] again, this was a trial of a new method, not direct problem-solving, then I think it would have been a faster process."

The relevance of the problem is closely related to scope level, which has been discussed as a prerequisite for the workshop. As an external participant from RISE reflects when comparing LKAB, Boliden and Epiroc workshops that differed with regards to the relevance and urgency of the problem:

"In the workshop, there was not much difference, because it was an enormous involvement from everybody and they came up with a great amount of thoughts, ideas and ways to express them. However, it made a difference to how you handle things after."

Overall these findings, together with the findings on scope level point towards problem definition being a critical activity. It is important to the success of both the workshop and activities after. Several interviewees have suggested that more time should be spent on it.

Management support

During the study, management support has been discussed as an important part. Both relating to encouraging post workshop activities and for individuals to spent time on it. As mentioned in Chapter 5, LKAB's project had been put on hold due to a reorganization. It could

be interpreted as management support have not existed in the way the project thought. An organizer reflects upon it like this:

"[...] we have thought that as we presented [the project] we had gotten support from management. But it is such a classic mistake to believe that others understand the problem, and understand what a fantastic idea this is and what value it will produce."

Organizational support

Beyond management support, organizational support seems important, as stakeholders other than management can be critical to bring ideas to their conclusion. For example, in the LF case, as they have wanted to involve employees from regional companies in innovation work finding support and dedication from employees and regional management has been an important theme. As an organizer puts it:

"[...] and my plan is to get the dedication, show that this cannot happen without your participation. [...] Then it becomes everyone's responsibility to drive innovation. Otherwise we will stay where we are and might even go the opposite way."

Resources

To be able to manage both results from workshop and further work, the organization need to have resources. Resources could be budget, staff or time. In the Epiroc case, they did not have the resources to move further with the concepts at the time right after the workshop. The interview puts it like this:

"If you don't have the resources available and don't have the right timing in the product development process, then you have to wait."

That external partners have time to spend, has also been raised as an essential resource if collaborations are needed in further work.

Ownership and responsibility

Having a person feeling ownership and having responsibility is a recurring theme when it comes to activities post workshop. In the cases of LF, LKAB and Rusal Aughinish there has either been a person with responsibility or a person feeling ownership for further work. At Rusal Aughinish, ownership is highlighted by the interviewee. Feeling this ownership compelled them to find time to be able to work on testing the ideas. An interviewee puts it like this:

"Both myself and the other organisers, I think we felt an ownership for bringing the ideas to a conclusion."

Systems and processes

All cases have used different systems and processes to manage the concepts that came out of the workshop. In some cases, like Epiroc, the organization already had a system to manage ideas, meaning that even if nothing has happened so far, ideas can be brought forward at a later stage. In the LF case, important processes have been built up during the work. Even though the processes did not exist from the beginning, they have been perceived as clear to participants and people involved. An organizer reflects upon how the processes and structures have been built like this:

"There are many who think that you are supposed to create a process and have a structure done, but then you're never ready. I started running immediately. Then I've built a process together with those involved in the meantime."

At LKAB, a process was created during the last part of the workshop, making it easier to start working after the workshop.

6.4 Comments on cases

So, which of these prerequisites are most important to succeeding in processing ideas after the workshop and getting value out of the workshop? In one of the cases, SKL, it is still too close to the actual workshop to say anything about what happened after workshop. That leaves five cases that had the potential to do post workshop idea processing. Of these, two have not (yet) gotten stuck anywhere in the process. No definite conclusions regarding what prerequisite are most important can be drawn from such small sample. Yet, some hints can be spotted by looking at what seems to be the reasons behind that Epiroc and Boliden have not done any post workshop activities and why LKAB's project have been put on hold.

The Epiroc and Boliden cases are similar, and in both cases two factors seem to have contributed more. The problem solved during the workshop have not been that relevant, and no one have had the responsibility or felt the ownership to bring ideas forward. When there has been someone responsible for driving the process, like in the other cases much more have happened after the workshop.

In the LKAB case, there was a project started after the workshop that have been put on hold due to a reorganization. It could be interpreted as management support have not existed. Worth to note is that all these are prerequisites are relating to post workshop activities, so it does seem that the workshop in itself is not the problem.

7. Discussion

In this chapter, the research questions of the study are discussed using empirical findings and previous literature. This discussion will be summarized by proposing a new framework for a workshop process, and then connected back to the title of this thesis, "Learn to explore and explore to learn". Worth to stress that the results discussed here are mainly applicable to the CoCreation workshop format that has been studied. To generalize between different formats, other ideation workshops would need to be studied.

7.1 Value from an ideation workshop

We have found several areas of value that the workshop could create, and all of them line up well with previous research. The primary area of contribution from the workshop to a participating organizations exploratory process is in ideation, and specifically through ideas (Birkinshaw et al., 2011). Knowledge and insight have also been an important area of value, which was expected (Suominen et al., 2017). Not least, because how much attention exploration gets in organizational learning literature (eg. March, 1991; Garvin, 1993). The other areas of value, network, energy and motivation, and attention to innovation has also been mentioned in previous work (e.g. Soini & Pirinen, 2005; Börjesson & Elerud-Tryde, 2017).

We propose that these five areas of value can be differentiated on a more general level. The area, new ideas, can be seen as direct value. The direct value is expected and impacts the organization by directly solving the problem that the workshop intended to solve. The other areas create value in an unexpected, dynamic way. This is because knowledge gained, extended networks, energy, motivation and attention, that all can create value in other settings beyond the intended scope of the workshop, e.g. when solving other problems, or starting a collaboration.

Looking at direct value, it does seem that ideas from the workshop have created most value when being processed further. It has resulted in actual improvements of products (or tools like in the LKAB case), instead of just getting a number of *"good"* ideas to keep track of. The findings line up well with the view that innovation needs to be implemented to create value, and that ideas is not enough in themselves (Govindarajan & Trimble, 2013, West, 2002). From this, we argue that the CoCreation workshop format studied, derives one of its main benefits compared to other ideation workshops, from bringing ideas further in conceptualization and thus closer to being integrated.

Direct value could be argued as the most important type of value, as most organizations assess success by short-term financial success or likewise tangible measures (Grant, 2016). If instead looking at long-term success, dynamic value might be more important.

As mentioned above dynamic value is value created through contribution to some other process creating direct value. For example, the dynamic value of network and contacts can contribute to a project by being the starting point of a fruitful collaboration that would otherwise not have happened (like in the LKAB case). Beyond being directly useful in another

context, dynamic value could also be valuable by contributing to develop organizational capacities and capabilities. For example, prior knowledge is important to an organization's absorptive capacity which has been argued as key to building innovation capabilities (Cohen & Levinthal, 1990). Thus, acquiring new knowledge could actually in itself be a part of developing innovation capabilities.

The energy and motivation of participants can also contribute to building innovation capabilities (like we have seen in the Länsförsäkringar case), possibly by affecting organizational culture to be more open towards new ideas and experimentation (O'Connor, 2008; Martins & Terblanche, 2003). In cases were a system for innovation exist, previous studies have found that attention directed towards it can help develop innovation capabilities (Börjesson & Elerud-Tryde, 2017). If not, it might instead be harmful.

Overall, it is difficult to say whether direct or dynamic value from the workshop is more important to participating firms. What we can conclude is that as direct value is easier to measure, there is a risk to put too much focus on direct value, while missing to pay attention to dynamic value. Thus, it is worth to pay attention to dynamic value and effects, and how to enhance it. In the long run, dynamic value might even be more important than direct value through its contribution to building more capable organizations.

7.2 Ideation workshop in an exploratory process

Having exploratory processes in place is a vital part of an organization's innovation capability, but it is not the only important thing (O'Connor, 2008). In this thesis we have mainly discussed a certain type of ideation workshop and its surrounding process. How can such a workshop process contribute to an exploratory process?

Using a generalized outline of an exploratory process (see Chapter 2.3) it seems that the workshop in itself mostly contributes to ideation through giving a number of options to explore further which was expected (Birkinshaw et al., 2011). As argued above, conceptualization is one of the key strengths of this workshop format, but that does not necessarily mean that conceptualization is done because ideas are closer to concepts after this type of workshop. On the contrary, for example in the LF case more work was needed in the conceptualization phase before taking the decision on which concepts to move forward with. Further, the workshop could potentially help in scoping of an exploratory field. This is especially true if organizers help participating organization defining workshop scope, as it can give an external perspective on what scope is chosen for exploration. To conclude the workshop in itself contributes to a small part of an exploratory process, which is illustrated by the blue color in Figure 12.

If we look at the whole workshop process including preparations and activity afterwards, when ideas have been brought to their conclusion, the process is essentially an exploratory process. What is lacking is an iterative element, and letting testing inform new exploration (Charue-Duboc et al., 2010). Iteration in this context essentially requires some form of organizational learning, as an organization must absorb and use new knowledge to be able to iterate in an meaningful and effective way, this will be discussed in the next sub-chapter. However, if we look at the CoCreation workshop format as of today, it is currently not setup

to bring in knowledge from such iterations. Any knowledge brought in from previous exploration is in the current format a serendipitous occurrence, as it happens when individuals bring their own knowledge and experience. Finding a way to systematically bring in such knowledge to allow participants to use insights from previous exploration could be a way to strengthen the format, and allow it to contribute more to the organizations exploration.

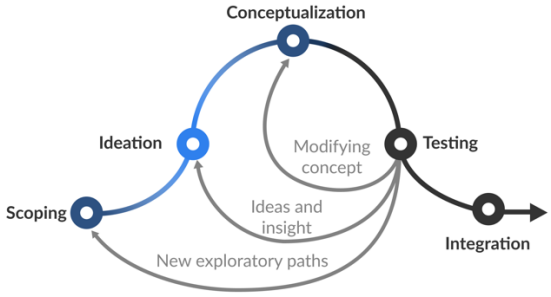


Figure 12 - A exploratory process, showing the workshop's contribution in blue

7.3 Exploratory process and organizational learning

Our thesis started with the hypothesis that learning is important for managing innovation. Literature confirmed our hypothesis and exploratory processes are important for learning (e.g. Zollo & Winter, 2008; Garvin, 1993; Huber 1991), and organizational learning when building innovation capability (e.g. Cohen & Levinthal, 1990; Argyris, 1999; O'Connor, 2008). Yet, we have found that there is only a little focus on learning when it comes to the CoCreation workshop. After conducting this study, it may not be surprising. The organizations did not have the intent to increase their knowledge by participating in the workshop. Also, the workshop itself is not designed for learning.

We have found that participants mainly gained two kinds of knowledge, knowledge about method and knowledge from other participants. Even if we have found few cases were organizations have changed their way of work, participants have got insights in an exploratory way of work. Hopefully, those insights can lead to increased exploratory working methods as a way of building innovation capability (O´Connor, 2008). What's even more important, is knowledge from other participants. Workshops per se, are a method for gathering and share knowledge (Suominen et al., 2017). As mentioned above, the ability to absorb this knowledge is also a way of building innovation capability (Cohen & Levinthal, 1990). This kind of knowledge could be technical knowledge, knowledge about products, services or other companies' businesses. As literature shows that learning is important for innovation, but the workshop does not focus on it, we argue that there is potential for further improvement. Possible areas for improvements are discussed below.

To be able to share knowledge with each other, we have discovered the importance of being on the similar level of knowledge and having some shared language. It is one of the important parts in social learning according to Vygotsky (Phillips & Soltis, 2009). To manage that, preparations are important. We have found that people with different perspectives and knowledge are important for creativity and ideation. Arguably, different perspectives are also needed to share knowledge. But according to both literature and findings in this study, there

is a limit for how large the difference can be. One way of reducing differences could be giving participants more prior information about the problem. It gives them opportunity to read about the subject. But also to start their thinking process, which is particularly important for some people ability to contribute.

After workshop, the exploration of ideas hopefully takes place. During the study, we have found that organizations rather reflect upon *if* a concept did not work rather than *why* it did not work. It can be compared with Argyris (1999) single and double loop learning. To achieve organizational learning in this perspective, organizations should increase their focus on the double loop learning. Literature tells us that it is important, but as mentioned there is no existing framework that tells us how. The literature that exists tells us that management is important, encourage time for reflections and changes in culture (Argyris, 1999). Reflections can also be included during the workshop, as Kolb states that reflection is needed to learn from experiences (Dixon, 1999).

Even if individuals learn during the workshop process most knowledge seems to stay on an individual level. If we map what is happening in the workshop process to the 4I model, most learning during the workshop can be seen as *interpreting*, verbalizing one's insights and experiences (Crossan et al., 2002). Looking at LF case, they seem to have reached the level of *integrating* (Crossan et al., 2002). They have started to share a common way of looking at innovation by those who have been involved in the workshop or post workshop activities. To reach the highest level, *institutionalizing*, and change strategies and structures, they would need to include the rest of the organization (Crossan et al., 2002). We have found attempts of organizational involvement, by spreading of insights, activities or knowledge. Overall, it seems like the workshop process can contribute to organizational learning, by the 4I-framework, the areas where it has been found to contribute most are shown in blue in Figure 13. But there seems to be a potential for reaching a higher level of organizational learning, by engaging in more knowledge spread activities.

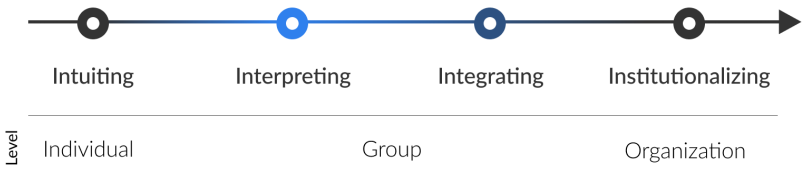


Figure 13 - The 4I organizational learning framework, the workshop's contribution in blue

7.4 The value creation process

So far, we have discussed what kind of value an ideation workshop process can result in as well as how it can contribute to an exploratory process and organizational learning. But, we have yet to discuss what prerequisites exist to create and capture value from an ideation workshop. Value includes both direct value from ideas and their processing, as well as dynamic value from learning, getting contacts, etc.

In Chapter 4, an analysis framework for a workshop process was introduced, including intent, workshop, post-workshop activities and value. While it was useful for analysis of the cases in

this study, we found it can be tricky to use as a tool for constructing a workshop process that is likely to create value. In the framework in chapter 4, we proposed that certain dimensions just affect the workshop and others the post workshop value capture. This neglects the fact that some of these dimensions are critical in preparation and might also interplay. For example, dimensions relating to problem definition (relevance, scope level, and purpose and vision) have been found to affect both the workshop and the post workshop activities, and both should be considered when preparing the workshop.

Therefore, in Figure 14 a new outline of a workshop process, informed by both theory and analysis of empirical findings, is proposed. The main elements are pre-workshop preparation, the workshop in itself and the post workshop activities. Pre-workshop is proposed to affect both the workshop and the post workshop activities. Further, the workshop affects the post workshop activities by its output. All dimensions proposed are defined in Appendix F. As this is a qualitative case study, it is not possible to exclude dimensions proposed as important in literature, and not say that one dimension is more important the others. Instead, we can draw conclusions on that certain themes seem to be important, and by the examples given clarify the meaning of certain analytical dimensions. To exclude dimensions and rank them by importance, further research is needed with a quantitative approach.

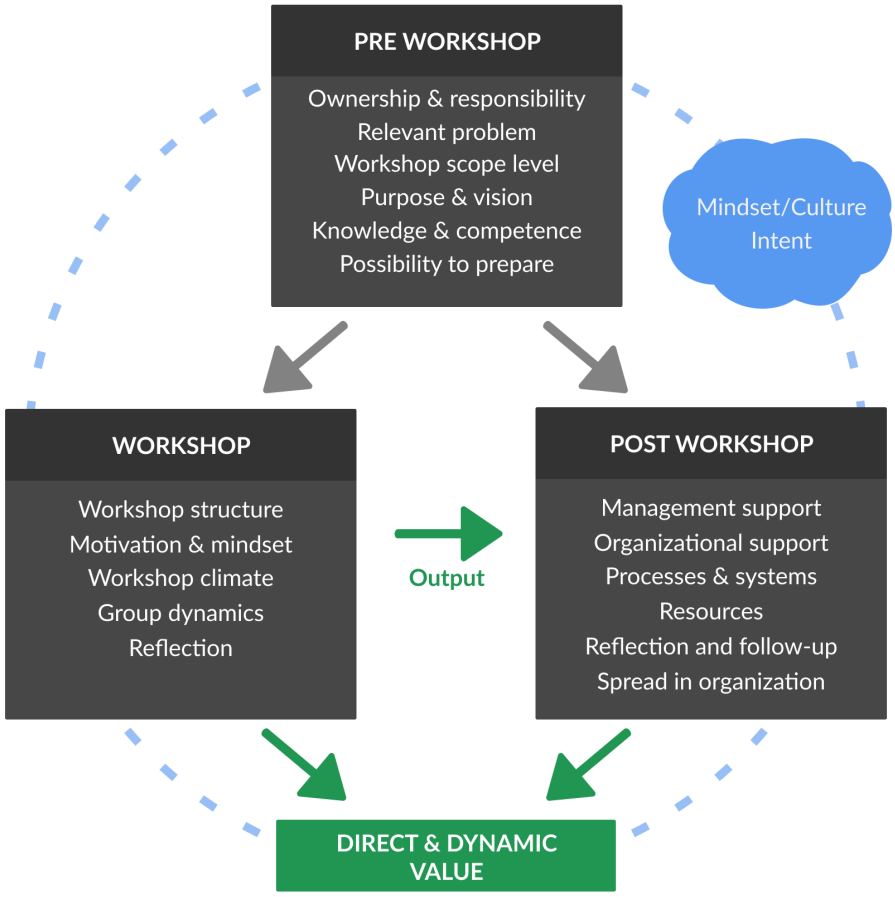


Figure 14 - Framework of a value creating workshop process

Two dimensions are proposed to affect all proposed elements of the process. The intent with the process and the mindset/culture of the organization, especially with regards to innovation. How intent have been found to affect the whole process is described in Chapter 6. Mindset/culture have been difficult to study in the frame of this thesis. Culture is a complex phenomenon, needing more attention to actually understand properly than has been possible to give in this study. Even though some insights have been gathered, it has mostly been from the perspective of one person in the organization, meaning it is hard to draw any hard conclusions on how mindset/culture affect each of the cases. Further research is needed to do so. Still, from previous studies on innovation and culture, it is safe to say that it does probably affect value creation from the workshop (e.g. Martins & Terblanche, 2003, O'Connor 2008).

In the cases studied, the workshop in itself has worked well, even if there has been minor suggestions of improvements and tweaks. The reasons behind that line up well with what theory suggest is necessary for a creative group environment. There has been a mix of people and competences, that also have brought in external perspectives (e.g. Chesbrough, 2012; Hargadon & Sutton, 1997; West, 2002). Group dynamics seem to have favoured a knowledge sharing and integration (e.g. Suominen et al., 2017; West, 2002; Boland & Tenkasi, 1995). Further there has been an open workshop climate allowing for crazy ideas as well as mistakes (Argyris, 1999; Lempiala, 2010). What has not been explicitly been mentioned in literature, but rather been taken for granted is the workshop structure. In this study different prerequisites of the workshop structure have been underlined as important to the results of the workshop. While workshop structure does seem important to the results, no conclusions can be drawn on what structure is most appropriate or optimal since we just studied one format. It is also an area that requires more research.

When it comes to the post-workshop process, a few things surprised us. From theory, we did expect resources to be one of the most important prerequisites of successful integration of ideas (Dougherty & Hardy, 1996). From our findings, especially in Länsförsäkringar and Rusal Aughinish cases, it does seem that having a dedicated responsible person feeling ownership for the process can counteract a lack of resources. In many ways this counteraction is done by the person finding resources previously unavailable, which has been a common theme in previous research (Dougherty & Hardy, 1996; Backman et al. 2011).

Similarly, we thought that processes and systems for development and knowledge management would be very important, and that specific configurations of processes and systems would be superior to others (Cohendet & Simon, 2015). While we found that having a process going forward from the workshop and some kind of system of knowledge management is important, exactly how those processes and systems are configured does not seem to matter much. Processes and systems does even seem like they do not have to be pre-existing, but can be constructed along the way, as in the Länsförsäkringar case.

As discussed in Chapter 7.3, creating sustainable organizational learning requires more than a workshop processes informed by our empirical findings and analysis in Chapter 6. We propose that both the workshop and the post workshop activities are important to learning. But to really achieve sustainable effects further work and thinking is needed. To achieve individual and organizational double-loop learning, more focus on reflection and follow-up is needed (Argyris, 1999; Dixon, 1999). To bring the whole organization on board, and disseminate knowledge individuals have gained through the workshop process, knowledge and results should be spread further in the organization (Crossan et al., 2002).

7.5 Learn to explore and explore to learn

The first part of the title of this thesis, emphasizes that the process could be a way for organizations to learn how to explore, to learn how to conduct these types of workshops and processes without aid from an external organization. In the findings, it is clear that several organizations have found insight to the workshop method and that way of working valuable in itself. Yet, we do doubt that organizations really can learn to do this type of exploration themselves. Mainly, because it is a process that benefits from the external perspective, which has been pointed out over and over, both in our findings and in theory (e.g. Chesbrough, 2012; Hargadon & Sutton, 1997; West, 2002). But also, because organizations seem to enjoy and be content in getting help with the facilitation of workshops.

So probably the most important process to master is not workshop facilitation itself, but how to process ideas further. That seem to be the main challenge for many of the organizations that have participated in our study. While our proposed framework is probably not covering all possible challenges in post workshop processing of ideas, it is a start to understand what is needed to address to be successful.

The second part of the title points towards that an ideation workshop can be a part of an exploratory process aimed at learning. We have seen that learning from the process is not the main focus of today. Yet, we do argue that to produce lasting value from a workshop and an exploratory process, achieving learning for the organization is vital. Because if the organization have learned something, these learnings can be used to create new options, even if the options generated at the workshop fails. This applies both for knowledge about the working method and technical knowledge. In essence, participating organizations that have learned will also have gained in innovativeness. If RISE can help organizations to do so, RISE is well positioned in the mission to become a leading innovation partner!

8. Conclusions

To start, there is surprisingly little research on ideation workshops, even though they are common. This study contributes with conclusions on how a type of ideation workshop, the CoCreation workshop, can contribute to create organizational value. Further, through the construction of a workshop process framework (see Chapter 7.4), the study indicates key prerequisites needed to create value. The study also reveals that today, learning is not in focus during or around the CoCreation workshop, even though theory and empirical findings suggest the format could be suitable for learning. Increased focus on learning could be a potential for creating more organizational value.

Research question 1: What kind of value can an ideation workshop create?

Among the organizations studied, the workshop process has resulted in value within the following areas; new ideas, knowledge and insight, extending networks, energy and motivation, and providing organizational attention to innovation.

Those values could be divided into direct and dynamic values. New ideas and value from further processing, is a direct outcome from the workshop, and could be most valuable in short term. The other areas of values found during this study are dynamic. Those values have potential to affect other parts of the organization's business than just the problem solved during the workshop. Increased focus on the dynamic values cloud give the organizations a greater long-term value. To accomplish that, the whole workshop process is important, especially post workshop activities.

Research question 2: How can an ideation workshop contribute in an exploratory process?

An ideation workshop in itself is a way of creating new ideas. It could be seen as the ideation part of an exploratory process. If looking at a full workshop process including preparations and activities after, it can be seen as almost a whole exploratory process as long as ideas are brought to their conclusions. To reach its full potential, all steps should be iterative and results be integrated to the organization. Effective iteration relies on the successful integration of knowledge from previous iterations, essentially organizational learning.

Research question 3: How can a workshop process contribute to organizational learning?

In this study, learning has not been the primary focus of organizations in the workshop process. Thus, the study cannot conclude how organizational learning affects innovation capability building. What can be said, is that there is potential to increase the organizational learning, both during the workshop and in the processing of concepts. To increase individual learning, that is a starting point of organizational learning, it is important to give participants opportunities to reflect on what they have learned. Further, reflections should be made on *why* concepts do not work rather than *if* they work. Another potential lies in spreading learnings from the whole workshop process to the entire organization.

Final words

To summarize, this study indicates that CoCreation workshop format is a powerful way to generate concrete ideas. Its strengths lie in conceptualization and mix of participant's perspectives. Conceptualization makes it easier to process ideas further compared to other similar workshops. A mix of perspectives gives new insights and better discussions.

A process around the workshop is essential to realize value. To achieve that, the organization must have an intent to proceed after the workshop. Even if that intent exist several prerequisites have found to be important to post workshop activities. They include having worked on a relevant problem and having a person responsible for driving the process. Further, management and organizational support, resources, and processes and systems are important. However, this has not been the case for all participating organizations. To conclude it has been found that many organizations need support in preparation and post workshop activities.

9. Recommendations for workshop organizers

Participating organizations all seem to like the CoCreation format, and it seems to work well for ideation. So, as an ideation workshop, we recommend the format. It is worth to note, that this study's findings indicate that an ideation workshop has most value as a part of a larger process. Our recommendations to workshop organizers will thus relate to all parts of the workshop process outlined in Chapter 7.4; pre-workshop, workshop itself, post workshop and lasting learnings. The recommendations will be directed to workshop organizers that help other organizations facilitate workshops and the process around it.

Overall, organizers must know the organizations intent to conduct a workshop. Thus, adjustments can be made and support around the workshop can be created. Participating organization must be made aware of what value a workshop can create and their role in realizing it.

Preparations before the workshop influence both the workshop quality and the post workshop activities. It is essential to find an important and relevant problem suitable for the workshop format used. It is also important that the participants complement each other, can collaborate and discuss at the same level. The participants also need prior information about the method, purpose and problem to be able to contribute fully.

Organizers play an important role during the workshop, as prerequisites like the workshop structure, climate and group dynamics are important. Here, facilitation plays an important part, both in making sure participants know what to do and to help them approach activities with the right mindset. To make sure that the workshop results in feasible suggestions, there is a value in conceptualization, in making the ideas more concrete. Processing ideas several times can also be useful to both develop ideas further and to narrow down the number of ideas. In this process, it is important to be mindful of what intention the participating organization has.

To increase the possible learning from the workshop, it is important that participants get an opportunity to reflect at the end of the workshop or shortly thereafter. An evaluation can provide one such opportunity to reflect, that also helps the organizers to learn and improve. To help the transition into post workshop processing, it is also important to clarify the responsibilities after the workshop.

Since more value is gained during post workshop activities, organizers should focus on what support the organizations may need. Things that could be considered obvious may not be. Support may be needed to obtain involvement inside the organization, create the processes that are needed and to acquire resources. Organizers could also provide a practical support by getting involved in further development of concepts.

Further, the whole process could generate additional value by focusing more on learning. For that, things mentioned above such as people that complement each other, the participants' ability to prepare and group dynamics are important. There is also need for time to reflect and to spread learnings through the organizations. Here, an opportunity exists for the organizers to support the organization in achieving that.

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Appendix A - List of interviewees

This appendix shows a list of all interviews made during the study. It in which part of the study the respective interview was conducted.

Informant interviews

Jonas Thorngren, CEO Pollen AB, 2018-01-29
Peter Tyreholt, Head of Advisory Cybercom Göteborg, 2018-02-08
Magnus Karlsson, Chairperson Innovationsledarna, 2018-02-13
Erik Ronne, VP Innovation RISE, 2018-02-13
Ellen Franzén, designer at Interactive Institute RISE, 2018-03-27
Peter Sandström, Innovation Strategist RISE, 2018-04-23

Respondent interviews - general case study

Niklas Huss, Länsförsäkringar AB, 2018-02-20
Mikael Andersson, Boliden, 2018-02-26
Bernadette Sinnott, Rusal Aughinish, 2018-03-01
Ann Johansson, Länsförsäkringar AB, 2018-03-08
Mikael Ramström, Epiroc, 2018-03-09
Petra Åhl, Ducit Innovation (Former LKAB), 2018-03-13
Anna-Maria Andersson, Skellefteå kommun (Part of SKL Beställarorganisation), 2018-03-26

Respondent interviews - in depth case study

Björn Åström, LKAB, 2018-04-10
Tobias Groth, Länsförsäkringar Göteborg, 2018-04-10
Lisbeth Björfäll, Länsförsäkringar Halland, 2018-04-11
Aslak Felin, RISE, 2018-04-19
Matz Sandström, RISE, 2018-04-20
Petra Sommarlund, RISE, 2018-04-24

Appendix B - Interview guidelines

This appendix shows interview guidelines used during interviews. The second guide is not translated since those interviews were held in Swedish.

Interview guideline - General case study

Introduction	**Who are we** **Why we do this** **What we do with the company contribution**	Cecilia & Veronika. We evalute what results and effects the Cocreation workshop have had, we do this to **improve** RISE CoCreation workshops. We want this to be more of a **conversation**. We will talk about the background to the workshop, the workshop itself and what happened after. **Time** hard to estimate 45-70 min.
	Recording	Is it ok that we **record** this conversation? It is for the sake of our memory, and it will be deleted when our thesis work is over. We will send any **quotes** to you for correction.
	Anonymity?	Do you want to be **anonymous**? Is it ok to **mention** your company name?
	Introductory questions	What is your title? Can you describe your role? How is your role/department related to the rest of the company? When was the CoCreation workshop? What was the setting? What was your role in the workshop?
Background	**Problem**	Can you describe the background of the CoCreation workshop? Was there a certain problem you wanted to solve? What was the case you brought into the workshop? *If the person does not know background:* Can you describe your innovation process? Have you done a similar workshop before or after?
	Why RISE?	How did you get in touch with RISE?
	Expectations	What were your expectations before the workshop? Did you have any expectations when it comes to results?
	Additional background information	Do you have anything to add regarding the background? Then we move on to the workshop itself

Workshop	**Evaluation - Opinions**	What did you think about the workshop? What should be kept as it is? What needs to be improved?
	Internal knowledge/roles	Can you describe who participated in the workshop? Backgrounds, roles, motivation and engagement How did the group dynamics work?
	External knowledge/roles	As we understand there were also external people. Did that contribute to something specific? How? Did it create new networks?
	Additional workshop info	Do you have anything to add regarding the workshop?
Results	**Post-workshop work**	What happened after the workshop? .... Evaluations, more work etc. What are the reasons for that?
	Value for the company - **Projects** - **Individual learning** - **Organizational learning**	Did the workshop live up to your expectations? Did the workshop help you with XXXX? Do you see a difference when it comes to XX Have the workshop created any other type of value? What? How? What reasons do you see for XXX? - What happened with the concept canvases / ideas? What are reasons for that? What happened with the concept canvases/ideas that did not turn out well? Have you been able to learn or draw conclusions from what turned out well and not? - Have the workshop affected those who participated in any way? How? Why? What are your takeaways? - Have the results been spread in the organisation? How? Why? Have the workshop triggered anything else? Changes in language, mindset, processes, strategy How have the workshop fit with the rest of your innovation processes?
	Resources	What resources have you had for post-workshop work? Time, money, responsible How do you think it has affected the work?
	Management	Has management been involved? How? How do you think it has affected the work?

	Mindset	Can you describe the mindset when it comes to exploring new ideas/concepts?
Ending	**Additions**	Do you want to add something?
	Data-access	Next steps Can we get access to contact details to the participants? Can we send a survey? Could we do an additional interview if needed? Do you have any documentation, like an evaluation that we could get access to?
	Thank you!	Thank you! We will send you the **report**, and there will be a **seminar** in Gothenburg/stockholm, probably possible to stream online if you want to attend!

Interview guideline - In-depth case study

Introduktion	**Vilka vi är** **Varför vi gör detta** **Vad vi gör med företagets bidrag**	Cecilia & Veronika. Vi gör det för att förbättra CoCreation workshops. Vi önskar att det blir mer ett **samtal**. Vi kommer prata bakgrund, lite workshop och sedan efterarbete. **Tiden svår** att estimera! Får gärna vara kritisk, vi försöker förbättra!
	Anonym?	Vill du vara **anonym**? Vill företaget vara anonymt? Nämnt i rapporten men inte kopplat till resultat?
	Spela in	Är det ok att vi **spelar in**? Vi gör det bara för vårt minnes skull och raderar såklart efter exjobbet är klart. Vi kan skicka eventuella **citat** till dig
	Öppningsfrågor	Vad har du för titel? Beskriv din roll?
Bakgrund	**Problem/Bakgrund/Syfte**	Varför ville du vara med? Vad uppfattade du som syftet med workshopen? Uppfattade du att andra tyckte det var tydligt? Hur märktes det?
	Förväntningar	Vad hade du för förväntningar på workshopen? Vad upplever du är företagets förväntning på detta arbetet? Vad är målet?
	Ytterligare om bakgrund	Finns det något mer du vill tillägga om bakgrunden till workshopen? Annars går vi vidare till själva workshopen

Workshopen	**Utvärdering - Åsikter**	Vad tyckte du om workshopen? Vad bör behållas? Vad behöver utvecklas?
	Scoping	LF: Vi har förstått det som ni jobbade med hem och hälsa under workshopen. Vad tyckte du om dem områdena? Var det relevanta områden för dig? Vad var anledningen till det? Tycker du att en sådan här workshop passar för den här typen av frågeställning? Varför? LF: Har den vision som uttryckts (vi säljer inte försäkringar, men förutsättningar för ett tryggt och skadefritt liv) påverkat arbetet? Hur?
	Bidrag och perspektiv	Hur funkade gruppen? Fick alla komma till tals? Hur upplevde du att det funkade att ni kom från olika bakgrunder? Påverkade det era ideer? hur? Kompletterade era perspektiv varandra? Varför?
	Klimat	Vad hade med dig för känsla från workshopen?* Hur upplevde du klimatet på workshopen? Vad bidrog till det?
	Val	På vilka grunder uppfattades du att val i workshopen gjordes?* … dvs varför X togs vidare framför Y Post-its till canvas, röstning canvas. Var det rimligt att det togs på dem grunderna? Varför?
	Ytterligare	Finns det något mer du vill tillägga om själva workshopen?
Efterarbete /Resultat	**Efterarbete**	Vad hände efter workshopen? …. Utvärderingar, vidare arbete osv. Vad tror du är anledningen till att XXX hände? Har du vart med i något vidare arbete?
	Värde	Levde resultatet upp till dina förväntningar? Har det gett något värde för dig? Vilket? Hur? Varför? Lärde du dig någonting? Tror du workshopen har gett företaget något värde? Vilket? Hur? Vad ser du för anledningar till att det blev det värdet?

	Spridning av resultat	Har resultaten från workshopen spritts i organisationen på något sätt? Har workshopen triggat något mer? Förändringar i språk, processer, arbetssätt, mindset, strategi
Avslutning	**Tillägg**	Vill du tillägga något?
	Tack!	Vi skickar rapport och bjuder in till presentation

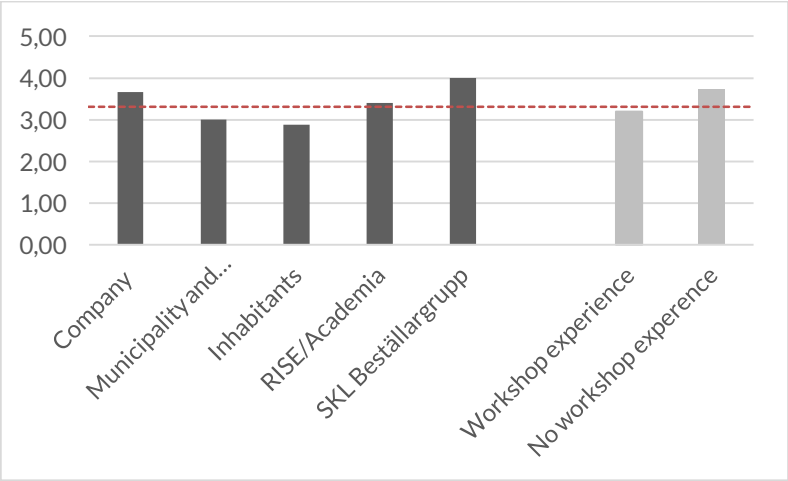
Appendix C – The SKL Survey result

This Appendix shows the result from the evaluation survey made with participants in SKL workshop.

Expectation and satisfaction

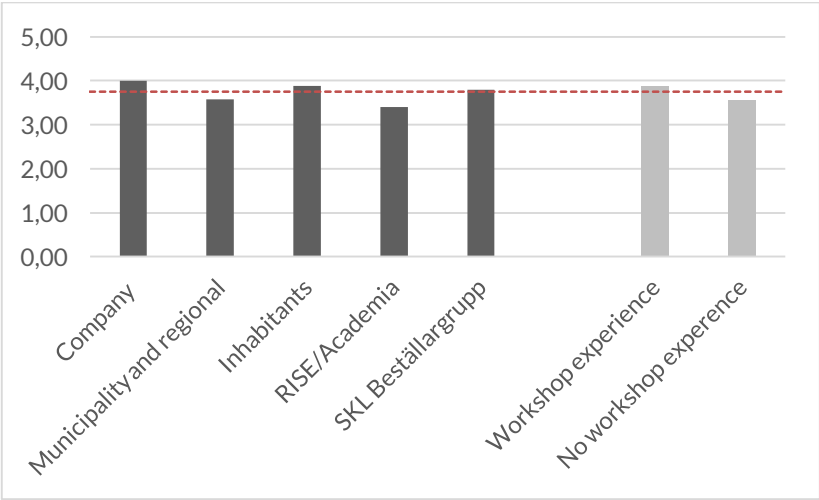
Chart 1. shows participants expectations before the workshop, with a mean of 3.31 (on a scale of: 1 – *Low expectations*, to 5 - *High expectations*). There is a difference between the participants role and their expectations. People from SKL Beställargruppen (mean of 4.0), company (mean of 3.67) and RISE/academia (mean of 3.40) had higher expectations than those from municipality and regional employees (mean of 3.0), and inhabitants (mean of 2.88). In the same way, the participants with earlier experience from similar workshops (mean of 3.73) had higher expectations than those who did not have earlier experience (mean of 3.19).

Chart 1. Participants expectations before workshop.



There are no significant differences between roles and former experience of similar workshops when it comes to satisfaction, see Chart 2, with a mean of 3.75 (on a scale of: 1 – *Very bad*, to 5 – *Very good*). There is no correlation between participants answer of expectation and satisfaction.

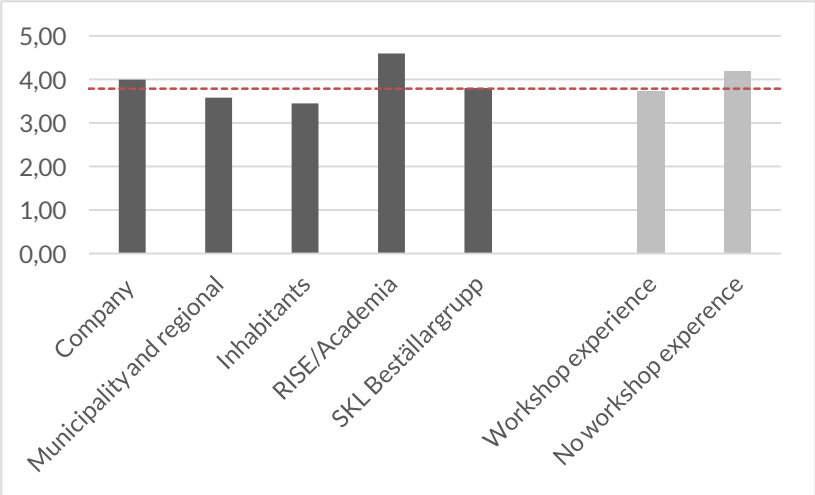
Chart 2. Participants satisfaction after the workshop.



Contribution and group dynamics

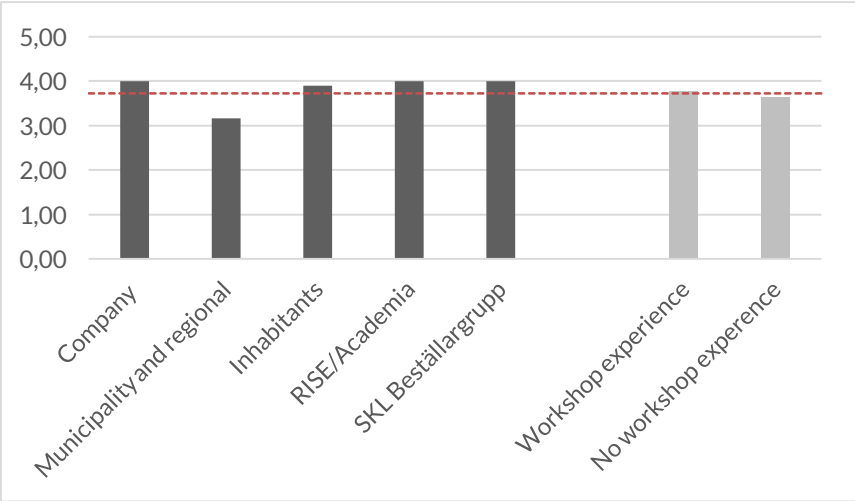
As shown in Chart 3, the answers indicate that there are some differences in how well participants thought they could contribute even if it is not statistical significant. Overall participants felt they were able to contribute, with a mean of 3.79 (on a scale of: 1 - *Not at all*, to 5 - *To a high degree*). The results indicate that people from RISE/academia (mean of 4.6) and those with former experience (mean of 4.18) were able to contribute most. Compared to inhabitants (mean of 3.44) and participants from municipality and regional (mean of 3.58). There is a correlation between the ones who felt that they could contribute also felt that other had complemental knowledge. There are no other correlations between those who felt they could contribute and other questions measured found.

Chart 3. How well participants felt they were able to contribute.



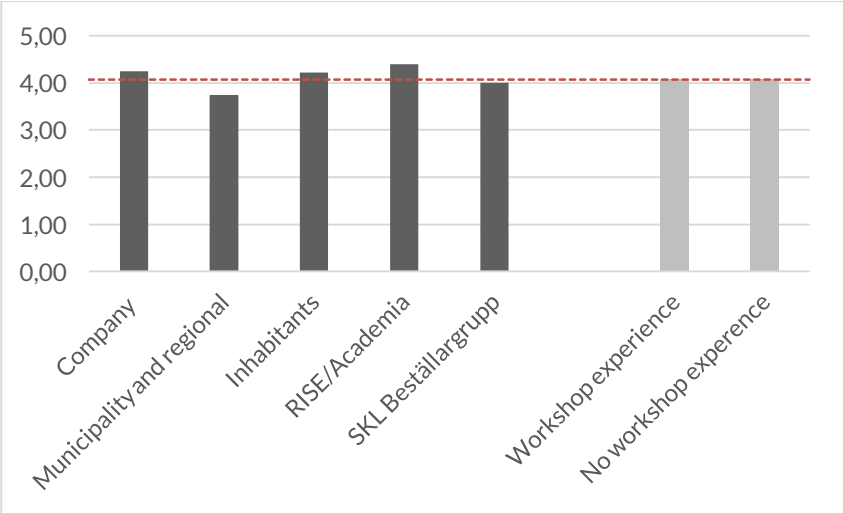
There are no significant differences in how well the participants felt that other complemented their knowledge, see Chart 4. Participants felt that others complemented their knowledge with a mean of 3.72 (on a scale of: 1 - *Not at all*, to 5 - *To a high degree*)

Chart 4. How well participants felt that other complemented their knowledge.



When it comes to collaboration, there is no significant difference between which groups that felt that collaboration was good, see Chart 5. Most participants seem to think collaboration was good, with a mean score of 4.08 (on a scale of: 1 - *Very bad,* to 5 - *Very good*).

Chart 5. How good participants felt that collaboration was.



Individual outcomes

Table 1 shows participants outcomes from the SKL workshop. The last row shows the total percent of participants answers for each outcome. The Table does also show outcomes for each group of roles that participated to the workshop. There seems to be some differences in which outcomes the different groups, but it cannot be statistically tested due to the small sample.

Table 1. Individual outcomes

	Contacts	*Knowledge about other organizations business*	*Insights about resident needs*	*Knowledge about methods*	*Inspiration/ energy*	*Other knowledge*	*Nothing particular*
Company	78%	67%	89%	67%	56%	11%	0%
Municipality/regional	50%	25%	33%	58%	42%	33%	8%
Inhabitant	22%	56%	78%	56%	44%	56%	11%
RISE/Academia	80%	80%	40%	40%	60%	0%	0%
SKL Beställargrupp	80%	60%	80%	80%	60%	20%	0%
All participants	58%	53%	63%	60%	50%	28%	5%

Appendix D - Case analysis

This appendix shows an analysis for each of the studied cases. The order of the cases will follow the order they took place. Each case is described under the headings; expectations and intent, workshop, post workshop, and outcomes and values.

D.1 Analysis of Atlas Copco/Epiroc

Expectations and intent

The reason for conducting the CoCreation workshop can be summarized by this quote:

> "We saw that we had a need to solve, and then we also saw that we could help our consortium, as they needed a pilot"

The interviewee described that he was curious to see whether a better method for doing workshops exists. The hope was that this type of workshop would produce more concrete input then other open innovation workshops he previously had been involved in. The expectations were quite low as the reason for entering the workshop rather was to help RISE out then to get a specific result. As he put it:

> "Getting something for free is nice, but one will have a very hard time demanding anything when one is not paying."

Workshop

The workshop in itself have been perceived positively. Reasons for this relate to the external perspectives available by a mix of participants, good group composition and dynamics as well as inspiring facilitation. Further, the interviewee reflected on the level of scope of the issues brought into the workshop. He thought the level of problem was the right one, but since they were quite general, more time would have been needed to get anywhere. So the main reason for the workshop not delivering many tangible results seem to be that the time of the workshop was reduced. He stated it like this:

> "It was probably more that it wasn't really rigged right, which meant we didn't get what we had hoped for"

Post Workshop

Several themes seem to be able to explain why the ideas from the workshop have not processed further. Relevance, both of issues worked on and the suggestions seem important. As stated before, several of the suggestions were not new. Further, the issues were non-urgent, since they worked on solving problems for a future product generation rather than the one in development at the time of the workshop. Adapting the process to these new, and sometimes crazy, ideas would have taken a lot of resources according to the interviewee.

> "We want a bit of new, odd solutions and then it's not possible to just plug-and-play them in what is already happening [...]. If you don't have the resources available and and don't have the right timing in the product development process, then you have to wait."

There still seem to be potential for utilization of the ideas. The relevant ideas have been put into the department's system for idea management. Senior engineers are responsible for bringing these ideas into the development process at an appropriate timing which could take a couple of years.

Outcomes and value

The results align to the low expectations. Even though some ideas have entered in to the project proposal system, none has to this date been taken further. Several ideas brought up had also been previously touched upon in internal studies. Yet, the method was perceived as worthwhile, and it was highlighted that experience of participation in such a workshop makes it easier to do it again.

D.2 Analysis of LKAB

Expectations and intent

Going into the workshop, the intent was to get specific input to the project. The fact that the workshop was going to involve people with mixed competences was seen as extra positive, as the idea at hand needs a mix of competences to be realized. Expectations seem to have differed between different people who were involved from LKAB's side. While the innovation consultant and director for external cooperation both were very hopeful, some of the more technical staff seemed more doubtful and even sceptical.

Workshop

The most important theme relating to the workshop seem to be the individual participants knowledge and ability to share knowledge. The knowledge exchange worked best in the group exercises, when the large format was broken down to smaller groups. There was especially one individual, an academics, who brought a lot of important knowledge which he was able to share effectively. One of the interviewees describe it like this:

> "X was probably a bit better to describe what he meant in words and not just using a lot of theoretical models [...] When you encounter a person who knows his subject area so well and can describe it comprehensively. Then you feel very fortunate. "

Even though most of the groups seem to have had a good discussions and group dynamics, both interviewees expressed some worry that the workshop format does not encourage the people who can contribute the most. Instead, they described it as instead promoting people who like to talk, which is not necessarily the ones who contribute most.

To get everybody to actually participate, facilitation was discussed as an important positive factor. RISE was described as contributing with an inspiring structure, while the innovation consultant who led the project from LKAB facilitated specific technical discussions. Neutral facilitation of discussions was described as key to get introverted, and sometimes skeptical individuals to contribute.

Other positive themes include an open and friendly climate, encouraging contributions and that IP-rights were made clear from the start. The latter, potentially also helped the open climate, as it made the business implications of the workshop clear.

The scope of the topic, has been described as both contributing positively and negatively to workshop results. The scope gave a clear purpose for the workshop, which could potentially have helped create involvement and engagement during the workshop. But, the scope was also complex, and according to one of the interviewees almost too complex for such a workshop, making it hard for many of the participants to contribute. A conclusion from this could be that preparation of scope is very important, both for the workshop process but also to be able to get the right participants there.

Post workshop

After the workshop, significant work has been done with the idea and it was brought into a formal project form. At the time of the interview, the project was though put on hold as a result of a restructuring of development within LKAB.

Several themes have contributed to bringing the idea further post workshop. There was people responsible to drive the project further, they had a budget, and there was a relevance for the company and external partners with useful knowledge and time to cooperate. A reason for that seems to have been that a clear process to drive the project further as well as the distribution of responsibility was actually the last point on the agenda of the workshop. Further, the workshop addressed a issue that could lead to significant economic gains for LKAB if dealt with correctly. There has also been external stakeholders interested in the project, making it even more urgent.

At the time of the study, the project had been put on hold due to a reorganization. It could be interpreted as management support have not existed in the way the project thought. An organizer reflects upon it like this:

> "[...] we have thought that as we presented [the project] we had gotten support from management. But it is such a classic mistake to believe that others understand the problem, and understand what a fantastic idea this is and what value it will produce."

Overall finding organizational support seem to be an important theme to succeed in further development in their project. Therefore the interviewee also suggest that line management should be present during the workshop.

Outcomes and value

Overall, the expectations of the workshop was met. As one of the organizers puts it:

> "It reached quite high in the expectations. At least in getting the idea further, finding the next step and building partnerships."

An important result from the workshop seem to be that the project team has found partners to drive the project further. In particular, the contact and subsequent partnership with one of academics involved is described as the main value by the interviewees. The partnership has resulted in important technical knowledge and insight to drive the project further. Additional to the LKAB partnerships formed two of the external companies involved in the workshop have also started to discuss collaboration.

The workshop also provided knowledge about how to use the method to drive an idea further. Especially the writing of a request for proposal which was done to specify the project to potential participants was described as useful in a broader sense, as the writing forced the project team to better specify the project and the implications of it. Knowledge that has started to be spread in the organization, as it is useful to more aspects of the business than

Further, the workshop is described as an important reason of why the project gained speed. The work has resulted a incrementally improved simulation tool, although not the radical improvement that was the aim.

D.3 Analysis of Boliden

Expectations and intent

The interviewee had little expectations, the expectations he had centered around learning something new. The reason for taking part of the workshop was to see a new method. As he said when asked about his expectations of the workshop:

> "No, I can't say that we had any large expectations. It was more seeing a new way of doing workshops and maybe learn something new"

Workshop

Themes brought up as contributing positively are mixed perspectives of participants relating to the different individual knowledge participants brought into the workshop, a workshop climate encouraging creativity, and open-minded friendly participants. Apart from those, facilitation seem to have been important for the workshop success. It both contributed to a open and creative climate, and made the workshop method clear to participants.

When it comes to areas for improvement, one such area is the scoping. The problem worked on in the workshop was broad and a bit fuzzy. As the interviewee states it:

"[...] Perhaps a smaller, narrower problem so one is more likely to come up with sensible solutions"

Post workshop process

In this case, the results from the workshop have not been processed further, even though local management support for the project existed. However the interviewee did express an interest in going forward with a literature study in collaboration with RISE for a few concepts. Some reasons why could be related to the problem that was dealt with in the workshop. The problem was real, but not urgent to solve, and not part of an pre-existing project or process. So, even though some feasible suggestions on how to solve the problem were created, they solved a non-relevant problem.

Another theme with potential explanatory value is that Boliden saw it as RISE responsibility to drive the post workshop process and thus waited for RISE's input. The process has taken time, and no resources have been allocated to further work on the suggestions. This theme can also be related to the relevance of the problem. As the interviewee puts it when reflecting upon why it has taken time:

"[...] again, this was a trial of a new method, not direct problem-solving, then I think it would have been a faster process."

Outcomes and values

The workshop produced some results in spite of the non-existent expectations. The interviewee especially liked the method as it brought ideas further into conceptualization than "ordinary" brainstorming sessions. Some contacts was also made during the workshop.

D.4 Analysis of Länsförsäkringar Alliance (LF)

Expectations and intent

LF saw the workshop as a kick-off for the work in building innovation capability in the alliance. In this setting organizers expected the workshop to help showing what the vision for innovation meant in practice and create organizational involvement. Further it was expected to contribute to the creation an external network and ecosystem for innovation.

Workshop

Many of the themes described as contributing to the making the workshop a positive experience are similar to other cases. For example, different perspectives from participants, a respectful climate between participants, and inspiring facilitation from workshop leaders all that contributed to a climate encouraging creativity.

A unique aspect of the workshop at LF is the vision, introduced to guide the innovation arena as a whole. During the workshop the vision seem to have helped create the creative climate earlier mentioned, by shifting focus from LFs regular business. Together with the areas for

the workshop it provided a broad scope that was perceived as good for creativity. One of the participants also says the vision limited the workshop to innovations related to the insurance part of LF's business.

Some concerns have also been raised regarding the broad scope. Suggestions have been made that one area should have been used instead of two to make it easier to prepare for the workshop. Yet, others point out that the scope should be based in a problem-formulation, to make sure ideas addresses real problems. Overall, as there is both positive and negative aspects brought up regarding the scope it is hard to conclude how it has affected the workshop.

Another unique aspect in the preparations of the workshop is that LFAB had nomination process for internal participants. The nomination process forced participants to reflect on their own role in the workshop and seem to have created a commitment and motivation. One of the LFAB organizers describes the nomination process and it results like this:

> "What was even better was that we asked [the participants] to motivate why they would be involved. It also required some reflection. *Is that really the right person? Am I the right person?* It made you feel committed even before you got there too, which was great."

Visualization, and specifically the visualization by a professional visual recorder, is also described as having a positive impact on the workshop. The pictures made it easier to verbalize certain things, but also to grasp the discussion as a whole.

The decision-making process and lack of preparations for participants have been brought up as themes that could have affected the workshop negatively. The decisions-making process in choosing which post-its to work on as canvases, and voting to determine the best canvas is seen as ad-hoc and unclear. Thus, both organizers and participants worry that some good ideas might have got lost in this process. As all participants do not have the same prior knowledge, the fact that participants did not have a possibility to prepare might have caused unequal terms of participation.

Post workshop

The most important reason for why results have been utilized seems to be that there has been an innovation champion, the head of innovation, who has driven the post-workshop process. He has been responsible and dedicated to build organizational support for the innovation arena, and has succeeded in securing both management support and building organizational interest. Through this a budget for the innovation arena has also been secured, enabling time to be spent on the projects, even though it has sometime been hard to find internal staff for the project. As one of the participants puts it when describing why so much have happened:

"There has been a difference since [the head of innovation] came into the company. He is a person who drives things forward, and wants results and effects, not just talk. That has made all the difference."

Another important theme is that through this dedication, processes and structures that is needed for innovation have been built up were they have not previously existed. Examples include a system for knowledge transfer within and outside the innovation arena and a process for running pilot-projects. Both of these have been perceived as clear to participants and people involved. An organizer reflects upon how processes and structures been built like this:

"There are many who think that you are supposed to create a process and have a structure done, but then you're never ready. I started running immediately. Then I've built a process together with those involved in the meantime."

Other positive themes include that the areas worked on was related but not confined to current business and the speed of the post-workshop process. The relatedness to current business was important for the organization to recognize the relevance of the concepts, while the areas was still broad enough to allow for new types of ideas. The value of a fast process is best described by one of the interviewees:

"With the pace of digital development, I don't think we have the time to work everything through, because then what we did in the beginning will already have become old. Now we need to work more agile. Start the process, and as soon as we know what direction we need to go, start running… "

Even though the broad areas were perceived as relevant, there existed a concern around whether the ideas were relevant to actual customer needs. Thus, after the workshop ideas were validated to ensure that they actually were based on needs. To improve the workshop further, customer validation of needs before or during workshop, was discussed as possible solutions. It could be done by bringing in more backgrounds of people, or presenting needs as the basis of idea generation. In the end, some of the ideas turned out to be based real needs, and it does not seem to have affected subsequent work after validation.

Outcomes and value

The workshop itself created some value. According to interviewees, it became a marketing event to external actors involved. People with interest in innovation all over LF became better connected. Further, LF employees gained insight about exploratory processes and some interesting ideas came up.

Overall this project seem to have created an involvement and drive around innovation in all of the LF alliance, it has almost become an hype. It also shows that results have been spread in the whole organization, and the workshop and post workshop activities have become something people talk about. While design-sprints was not completely finished at the time of the study, it seems clear that they have given insights that can be useful, either in driving the concepts as such further or for other parts of the LF business.

D.5 Analysis of Rusal Aughinish

Expectations

The problems intent of the workshop was to solve the task they worked on. However, the organizers were not expecting to find solutions since the problem was quite complicated, meaning the expectations were quite low.

Workshop

Several themes; open climate, good group dynamics and discussions, individual contributions, and reality based knowledge, all seem to have contributed to a creative and energizing workshop. Mixed backgrounds and reality based knowledge are worth describing more in detail.

In the workshop the mixed backgrounds of attendees seem to have contributed to creativity and insights for the company. The most valuable input came from people from industry, which was also the smallest group of attendees, and thus this group could have been expanded to improve the workshop. The reason for why their input was so valuable relates to one of the further factors found, reality-based knowledge. The interviewee puts it like this:

> "The kind of thing that was great was that they could say *In our company we do X*, rather than *I heard people do X*. They were able to talk about what they were actually doing."

Two themes could point towards areas of improvement. The first relate to the broad issues discussed during the workshop. While they were clear enough to produce a number of concrete ideas, the organizer still would have wanted to spend more time defining the problem even more narrowly. In hindsight, they also wanted to have focused on a single problem to be able to handle it more in depth.

Another theme found relates to the decision-making process during the workshop. The decision-making was perceived as ad hoc, and decisions about which ideas to move along with were taken late. To improve workshop results, the interviewee suggested that the number of concepts should be narrowed down at an earlier stage and by people with expertise in the area to make sure that more time was spent on relevant concepts.

Post workshop

In this case, the concepts developed during the workshop have been worked on further and brought to a conclusion. There are several reasons for that. Firstly, the problem worked on was important and significant, and some ideas were also realistic enough to be worthwhile to pursue. Second, and the reason most highlighted by the interviewee, is ownership. Feeling this ownership compelled them to find time to be able to work on testing the ideas. The interviewee puts it like this:

"Both myself and the other organisers, I think we felt an ownership for bringing the ideas to a conclusion."

Other themes are management support and organizational support. The organizers made sure of having management with them, but also sought broader organizational support by presenting the workshop to relevant parts of the organization. The first part exists in the initial analytical framework, while the part adds to it and highlights that other organizational stakeholders then management can also be important to result utilization.

Outcomes and value

Right after the workshop, the immediate result was a list of concepts worthwhile to investigate further. In the end, the concepts worked post workshop turned out not to work as expected. No further conclusions than these solutions do not work have been drawn. Overall, it still seems that the company was happy with participating in the workshop. Our interviewee puts it this way:

"We all agreed that it would be a great exercise to carry out [...] I would say it was energizing, it was interesting but unfortunately none of the ideas from the workshop survived subsequent evaluation to become implemented solutions"

Further, the workshop contributed to build valuable internal and external networks, and provided new knowledge about both the method and the issues at hand.

D.6 Analysis of SKL

Expectations and intent

The workshop was a part of this need analysis for residents who needs support to maintain or increase their independence. The intent with the workshop was to bring in well-defined needs from perspective that the group had not seen before. The expectations was quite literally to collect needs, and to have those needs concretely described. Moreover, the organizers wanted a report from workshop analyzing the needs that had come up.

Workshop

Perceived as most positive is the different perspectives that emerged during the workshop and the positive climate. This workshop was kicked of with a roleplay, which probably contributed to building empathy and breaking the ice. Even though the mix of perspectives was perceived as important and key to get credible results, the organizers had wished for a larger proportions of inhabitants.

Group dynamics was mostly described positively. From the survey results and interview it can be concluded that most groups let all of its members speak, and share their perspectives. Yet there was a few groups were certain participants were perceived as dominating, making it hard for other participants to contribute. One of the organizer describes the discussion climate like this.

"Overall, [there were] good discussions on most tables, with some exceptions for some tables where there were dominant people, who did not know how dominant they were."

From the survey, answers about the purpose of the workshop related to everything from how to adapt future technologie for individual needs to get an understanding of how the elderly care will be steered in the near future. From this, it can be concluded that the scope of the workshop was not clear to participants. This was also the experience of the interviewee, and the reason for why organizers clarified scope at the start of the second day. It seems like the unclear scope of the workshop could have contributed to the focus on solutions instead of needs during the workshop.

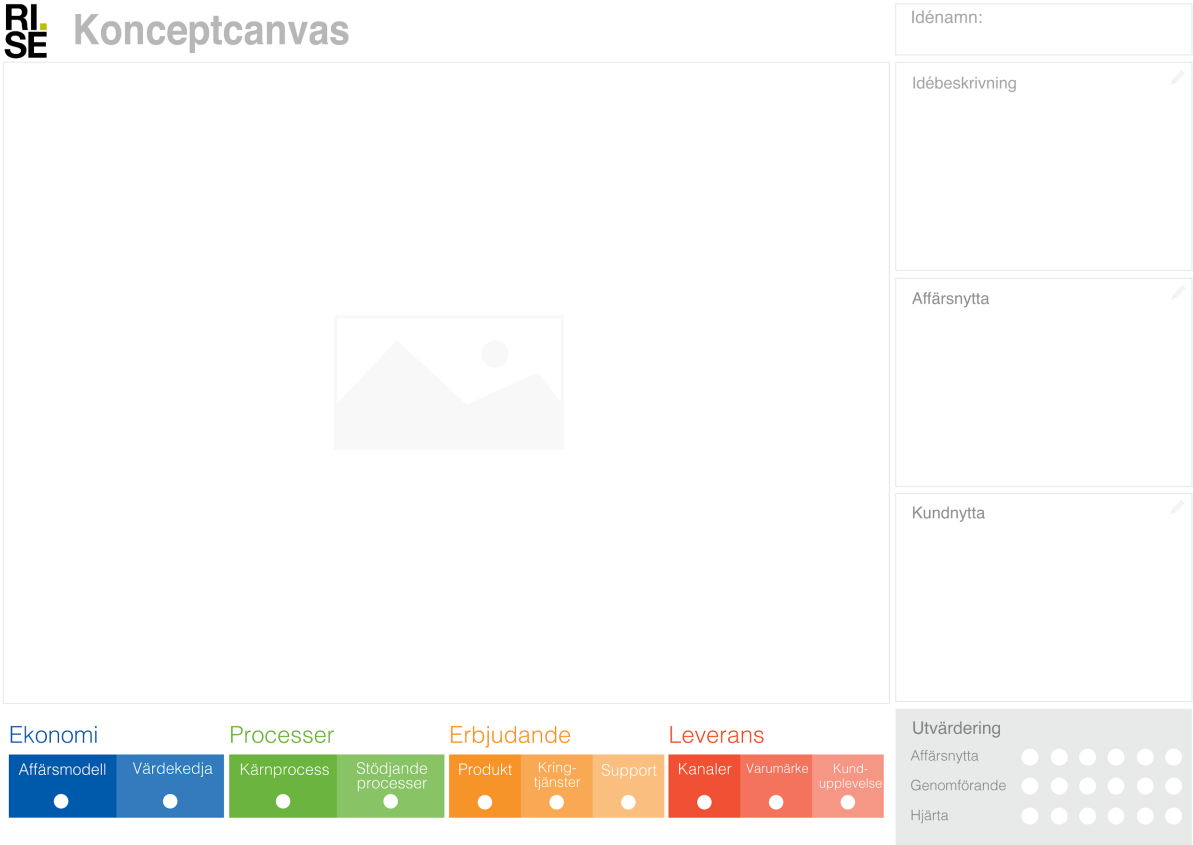
A further point of improvement brought up relates to decision-making during the workshop. The grounds for taking decisions, ie. during voting or ranking of concepts, was perceived as unclear. Moreover, several participants seem to have struggled with understanding the process. Overall it puts the results of the prioritization into question.

Outcomes and values

When it comes to results, it is to early to say whether they have been valuable for Beställargruppen. Some results that has been seen are contacts made during the workshop days and some input to the need analysis. While needs where explicitly sought after, solutions to needs were also brought up, which was not the organizers intention. During some parts of the workshop it was even the main discussion point, and organizers had to remind the group to focus on needs. Further the interviewee reflected that the workshop format promoted quantity before quality.

Appendix E – Concept canvas

This appendix shows a picture of a typical concept canvas used in the CoCreation workshops.



Appendix F – Dimensions on final framework

This appendix shows a table for the final framework parts; pre workshop, workshop and postworkshop. Each table includes the dimensions found and explanation of those.

Pre Workshop

Ownership and responsibility	Clear distribution of responsibility and feeling of ownership.
Relevant problem	Real and economical saving problem for the organization who is validated with important stakeholders.
Workshop scope level	Broadness of scope
Purpose and vision	Existence of a purpose and vision with the workshop process
Knowledge and competence	Participants knowledge, competences and earlier experiences. Requires a mix of perspectives, and external or other specified perspectives of importance
Possibility to prepare	Prior information about method and scope to enable possibility for participants to prepare

Workshop

Workshop structure	Includes time for problem solving, clear facilitation and decision-making grounds and timing. Making it clear for all participants to know what to do.
Motivation and mindset	Getting motivated and open-minded participants. Could be made beforehand and by inspiring workshop methods.
Workshop climate	Climate encouraging creativity, respectful, open, positive and friendly. Facilitation is important to achieve that.
Group dynamics	Group composition and making sure that all participants can meat in level of knowledge and language. Could include facilitation of discussions or other methods to use all participants perspectives.
Reflections	End workshop with reflections to increase learning and possibility for further reflections on improvements in concepts.

Pre Workshop

Management support	Having management support to work further with concepts. Could be made by having management present on parts of the workshop.
Organizational support	Getting organizational commitment by important stakeholders support.
Processes and systems	Having, or creating, processes and systems for handling concepts and learning. Could be made as a last part of the workshop.
Resources	Time and budget to develop concepts further. Can include external parts ime as well.
Reflections and follow-up	Making reflections during further development by double loop learning.
Spread in organization	Spreading both activities and learnings through the organization and adapt in other settings