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**Improved Service Design for RDI
services supporting industrial
companies in digital transformation
in the Pori and Rauma area**

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<p>Title of publication Improved Service Design for RDI services supporting industrial companies in digital transformation in the Pori and Rauma area.</p>		
<p>Abstract</p> <p>The objective of my thesis was to find out ways to improve the service design between the industrial sector within the Satakunta area and specific research resources. A better functioning service design here of the Digital Innovation Hub's RDI services, was believed to be linked to a evaluated digital transformation and competitiveness of the industrial firms. Therefore, my main objectives was to discover a sustainable and effective RDI service package, which would help these industrial companies in the most valuable way within their digital transformation.</p> <p>It was important to understand the stage of research and actions within this topic to find an adequate view on the issue. The theory was gathered via different theoretical sources forming the base of the study and overall method for approaching the objective, was a qualitative approach, consisting of interviews and observations. I was then comparing the theory to the results of my research method, getting an idea about the first hotspots. Analysing the matter further, I used furthermore, service desing tools, such as Insight, Ideation Sandbox, Idea Accelerator and Service Blue Print.</p> <p>The results gathered via the qualitative research method and anlyzis of the service design tools, showed that companies needed more effectiveness within the RDI process itself. It turned out, that within a RDI service creation for a industrial companies operating on the open market, communication between the RDI provider and the companies was often not satisfying. The issue was seen within technological innovation students not having a deeper understanding on economical needs. This could be changed by placing i.e. a business student among the innovation team, coordinating the business views on the RDI service, coming directly from the customer company. For a RDI service aimed within a medical field, a nursing student could be placed again as a cooperation key between the customer company and the innovation hub. Another Issue was low trust levels between the service provider and the customer companies, hindering effectiveness of research.</p>		
<p><u>Key words</u> Service Design, RDI, industrial companies, Satakunta region, digital transformation.</p>		

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1 INTRODUCTION

I was completing my compulsory practical work of Satakunta University of Applied Sciences for a company called Prizztech Oy in Robocoast team, which is focused on industrial robotics, artificial intelligence and modernization. Robocoast is based on open innovation and has an international network. It formed a research and development- based ecosystem, connecting organizations linked to it. Within a short time period the company was able to reach some of the most influential European expert and research networks. These Hubs are linked and coordinated by i.e. the HiPEAC expert network, the Allied ICT Finland network and the European Union. During my practical work I analyzed with my supervisor, Pauliina Harrivaara, the RDI Services supporting industrial companies within digital transformation around the Pori and Rauma area. We came to the conclusion, after a period of time, that this part of Satakunta area has a very strong industrial market, but it is short in services connecting them to digital transformation providers. Service design is very popular among companies in general, however, it is rather new within the industrial area. This gave us the idea to find certain service design tools in order to connect the industry with digital transformation providers and to make these companies even more successful that way.

1.1 Background information

The thesis concentrates on industrial companies located within Satakunta, being Rauma and Pori. The state is located on the western part of Finland and has according to the official webpage of the Satakunta Chamber of Commerce (2020) more than 217 000 people, which makes it the 12th biggest region of Finland. The state has different industries for successful investing opportunities, such as forestry, food, metal engineering and most importantly technology. The region is one of the most important

regions in Finland, because of very strong industrial growth and is producing 25% of the entire Finnish electricity.

The company where I did my practical work is the supporting network for RDI service concentrating on similar economical sectors, such as the above mentioned ones. Within the RDI service are SAMK RoboAI, Tampere university Data Analytics research group and Satakunta industrial companies. Furthermore, the company's coordination unit is providing a modernization of industry and services, as well as having connections all around Finland and organizing need-based product development projects (Robocoast,n.d.). With their expertise and experience, I have already a valuable standpoint for this research.

In order to find further solutions and answers to my research, I work closely together with one of Finland's strongest service design providers, called "Futurice". They are also very interested about the outcome of the thesis and how certain service design tools work for the industrial companies.

The figure 1 pictures the RDI service in action. It is connected to the industrial companies and to educational providers.

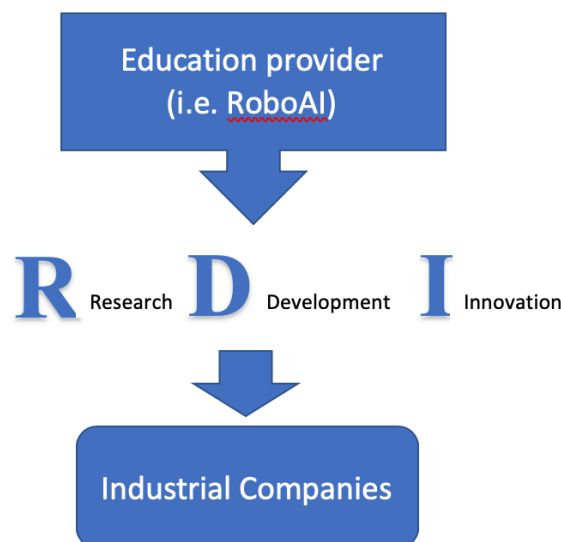


Figure 1. RDI explanation (Thesis author 2020).

1.2 Purpose of the thesis

The purpose of the thesis is to find strategies and possibilities more in depth on how to improve the digital transformation and the competitiveness of industrial firms using RDI services from the Robotics Digital Innovation Hub coming from the Satakunta area. The main idea of the research will be, therefore, to find which RDI service package will bring the most of value to industrial companies within digital transformation. The strategy here is to use multiple service design tools and possibly also develop new ones, related to my findings, in order to find the best outcome. For that reason my research will be mainly done within the RDI services, which are supporting these industrial companies with their digital transformation. The research concentrates only on the Pori and Rauma area, but could be later on within further studies also extended to other areas and sectors. The results of this research will add value for industrial companies within their digital transformation and furthermore, will help them to overcome industrial digital change.

1.3 Limitations of the thesis

The subject of this research is too large for a Bachelor's thesis, to cover every company within Finland. For that specific reason the research has to be drastically shortened and is covering only certain industrial companies around the Rauma and Pori area. Furthermore, the subject is very unfamiliar and theory of service design related to industrial companies is not very common. For that exact reason, it will be challenging to find within this limited research a service design method and tool for the digital transformation in question to cover all of the industrial firms. However, with the given RDI service expertise and available resources from service design companies, as well as the gathered up-to-date theory, a positive outcome will be possible.

2 OBJECTIVES AND RESEARCH QUESTIONS

2.1 Objectives

Within this thesis I will try to find possibilities for improving the service design between specific research resources and the industrial sector within the Rauma and Pori area. The specific service evaluation will be searched within the Robotics Digital Innovation Hub's RDI services coming from Satakunta, in order to improve the competitiveness and digital transformation of industrial firms. The main aim of the research will be, therefore, to find a possible RDI service package, which would be within digital transformation most valuable to an industrial company. It will be my main focus here, to find for that specific reason, a sustainable service for the digital transformation with service design methods and tools.

2.2 Research questions

The main question of my thesis will be:

How to build, based on this research a sustainable service for the digital transformation with Service Design tools and methods?

The sub-questions related to my main question are:

What kind of service design tools should be used? How industrial companies get more valuable with the chosen service design? How to put gathered raw information into a practical service design tool?

3 CONCEPTUAL FRAMEWORK

The figure 2 below pictures the conceptual framework of the thesis. It shows the process on how the thesis is structured, in order to find the desired outcome. Here the research is focused at interviews and observations to companies, students, Robocoast and Futurice. They form the actual situational standard of RDI. This knowledge again is screened with the three service design tools further, which are forming then the improved service for RDI.

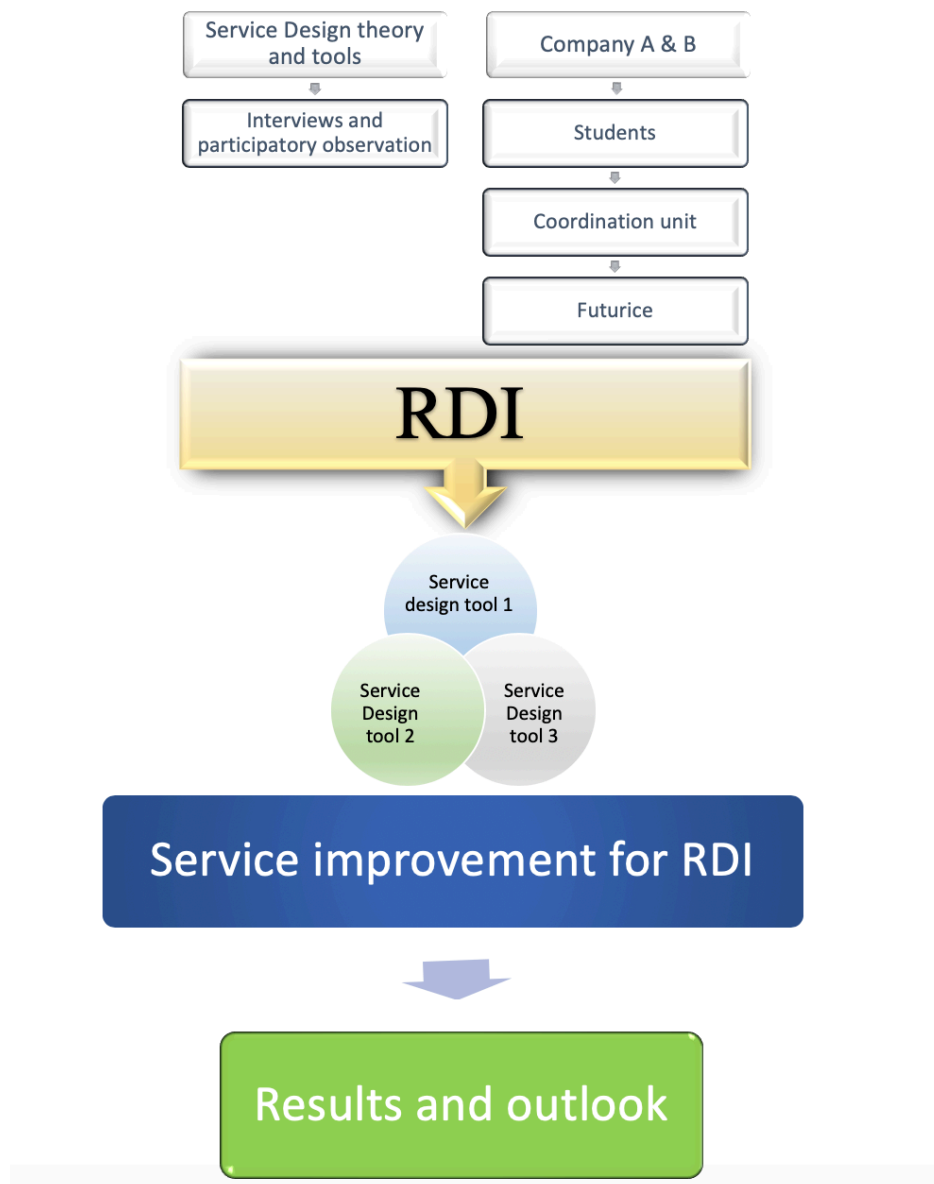


Figure 2. Conceptual framework (Thesis author 2020).

4 THEORETICAL FRAMEWORK

The theoretical framework covers one of the main elements of the thesis subject. It builds the fundament, on which I will structure my research and supports the data gathered in order to build a better service design.

4.2 Definition of Service Design

The term service design stands for creativity, collaboration and innovation and gives a new view on traditional business practices. Therefore, it has been also cited by researchers as a design discipline being most important. It helped large businesses, such as Apple, Philips and Dyson to succeed and they raised that way awareness of its importance to the business world. Service design in general is very new and has been getting overall popular within the twenty- first century. It helps here to address social, technical and economical trends. These three given trends make service design relevant within today's organizations and businesses. (Flu et al. 2016, vii-2).

Service design is in many ways beneficial to develop a service more into i.e. a customer-oriented way. The methods being used are helping to create a shared and better picture of what actually provides customer value and to effectively use this experience. Service design is helping to use people and networks of technology in a smart way to improve their actions. Furthermore, it helps to make complex services more easier and at the same time for the customer more powerful. (Løvlie 2013 2, 3, 18-19).

The fig. 3 gives the reader a better understanding about the overall service design process, which comes into place, when designers are planning to evaluate a given organization's elements within a chosen field.

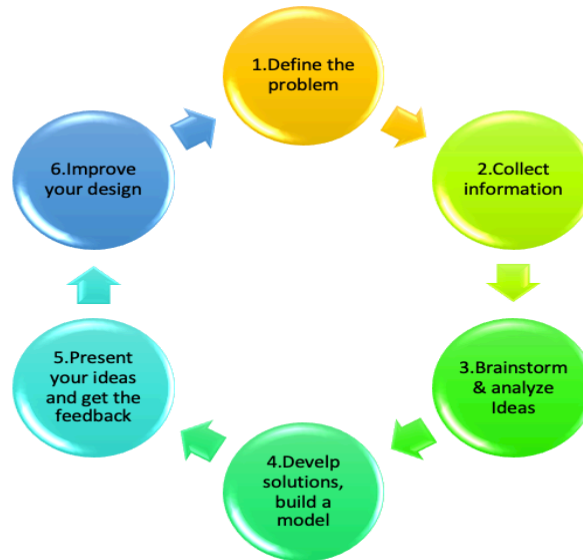


Figure 3. WHAT IS THE DESIGN PROCESS AND WHY IS IT HELPFUL (Chicago Architecture Center n.d).

Service design is according to Stefan Moritz (Stickdorn, et al. 2018, 18) also cited as it follows: “Service design helps to innovate (create new) or improve (existing) services to make them more useful, usable, desirable for clients and efficient, as well as effective or organizations. It is a new holistic, multi-disciplinary, integrative field.” In order to overall get started, we have to find ways to improve an organization’s service. The designer has first to get a picture of the organization and its structure. The authors Marc Stickdorn, Marcus Edgar Hormess, et al. (2018, 24) describe, that there are five principles of the service design process, which has to be taken into account, before designing.

These are as follows:

1. User-centered, through understanding the user by doing qualitative research
2. Co-creative, by involving all relevant stakeholders in the design process
3. Sequencing, by partitioning a complex service into separate processes
4. Evidencing, by visualizing service experiences and making them tangible
5. Holistic, by considering touchpoints in a network of interactions and users

4.1 Components of Service Design used within the thesis

The designers have multiple tools, which could be used in a wide range in order to explore and create. I chose the following three tools for this thesis in order to improve the RDI services for industrial companies.

4.1.1 Service Blueprint

According to Gibbons (2017) a service blueprint is visualizing a relationship between different components, such as props, processes and people. They are all tied directly to given touchpoints within a customer journey. The service blueprint is pictured as a diagram and identifies opportunities for optimization, bridges cross-department efforts and discovers weaknesses.

The reason why I am planning to use *Service Blueprint* as my service design tool is, that I am more of a visual person and this specific tool helps to give a clear picture over the whole journey in general. It helps to understand step-by-step how the service between different providers is working. Furthermore, it makes it easy to see, if something is in some area not working as it should and makes it easy to change it.

4.1.2 Lean Service Creation

My questions within the interview process are supported with this specific service design tool. Lean Service Creation gives the designer a possibility to create new services in a customizable and systematic way. LSC is unique in its process, since it uses different ways to steer the designer through with the right questions needed to be asked, in order to solve the right problems. In short, it helps with its canvases to concentrate on the right elements from the beginning till the end of a process. It makes the service creation smarter, better and faster (Futurice 2020).

The *Learn Service Creation* tool I will use while analyzing interview answers. I got great support from a company called Futurice, who gave me some insight about

different tools. On their homepage I found the *Lean Service Creation* tool, which I have not been using before, but it looked very useful for my research.

This specific tool starts with canvas called *Insight*, which analysis the needs of every interviewed person, as well as how he/she thinks and feels. The next step is to collect all the needs which would fulfil the business objective. After that, I will gather all the ideas into canvas, called *Sandbox*. It has been lately a very known used canvas. It is the kickstart for my first round of ideation, which I gathered from the interview answers. The next canvas is called *Idea Accelerator*, which includes four different ideas: *seed idea*, *behavioural gap*, *business objective*, *social purpose*. From all these mentioned ideas I will write up at the end my holistic concept. The last canvas is called *Rational Concept Sheet*, which is draft of the founded ideas.

4.1.3 Value Proposition Canvas

The value proposition canvas is a framework, which helps to ensure designers that the market fits with the product-service idea. Furthermore, it provides a deeper look on value propositions and customer segments relationship, pains and gains and screens the roles involved (Sdt n.d.). Value proposition canvas also helps the designer to understand how decisions are made by the customers. This makes it again possible to find solutions to these decision processes (Jeffries n.d.).

Value Proposition Canvas is one of my favorite tools. I have been personally using it very often. It shows the company gain, creators and pain relivers, as well as customer pain and gains. It is a very simple tool, but if it shows more pain than gains, which is clear that something must be done in order to minimize them.

5 RESEARCH, DEVELOPMENT AND INNOVATION (RDI)

Another important element of this thesis next to service design is the Research, Development and Innovation Hub. Here I shortly address the meaning and importance of it.

5.1 RDI and what it stands for

RDI is as the name already hints a hub, created to support research, development and innovation. Different higher educational institutions have RDI units, which on their part have a vast variety of research areas. These research areas are i.e. robotics for enhancing health and wellbeing, IoT and Cloud Data Analysis, customer-orientated technology applications, customer- oriented rehabilitation, different projects, etc. As an example the Metropolia University of Applied Sciences is having around 100 RDI projects within each year. These projects aim to support and promote the development of the capital area and its society, by finding solutions from research, development and innovation. The solutions are again found by students working together with partner networks and elements from the working life. This way new knowledge is created (Metropolia 2020).

The JAMK University of Applied Sciences (2020) in comparison has around 140 RDI projects each year and their RDI operations volume was in 2018 around 11,0 Million Euro. Their success has been getting so far, that they are cooperating with international and national networks, in order to provide their researched, developed and innovated solutions. JAMK is heavily concentrating in developing artificial intelligence and data analysis, modernization of educational systems for nurses, development of applications for health care and finding opportunities to improve future opportunities in biomass terminal operations, to just name a few.

5.2 How does the RDI work

Metropolia University of Applied Sciences (2020) is a great example for the RDI, since their approach with these hubs has succeeded very well within the Helsinki area. They simply provide a new way to produce solutions, by having staff, students and collaborators work together within RDI hubs on different platforms. Furthermore, they have a flexible and unique workspace for transportation and automotive product development, just to name a few of their actions.

5.3 How it gets financed

According to the Finnish Ministry of Economic Affairs and Employment of Finland (2020) they are giving funding in order to encourage research organizations, businesses public service providers in RDI activity. This promotes expected growth in economy, society and industry. Funding is provided in forms of loans and grants by the Finnish Funding Agency for Innovation.

On top of that the European Union with their “European Fund for Strategic Investments” (EFSI), as well as the European Structural and Investment (ESI) is funding programmes and gives regional or national support. The ESI has funded between 2014 and 2020 around 118 billion Euro (Website of the European Union 2020).

6 METHODOLOGY

Within this chapter, I will give the reader a deeper look on the methodology of the thesis. Furthermore, the approach of the subject will be explained and how the data is being gathered and analysed.

6.1 Qualitative Research as a Research Method

The qualitative research has become popular within the 1960s and acted as a counterpart to quantitative research, in order to identify deviation from it. This research method allowed people within i.e. interviews to speak in their own norms and that way allowed the interviewer to understand better their distinctive perspectives. It gives therefore the researchers a possibility to get knowledge about a subject in more contingent, complex and context-sensitive manner. (Hammersley 2013, 10,11).

Klenke (2008, 7-11) sees within the qualitative research again the way of interpreting a phenomena or to make sense of it, in terms on how people bring a meaning to it. This method includes the studied collection and use in a brought amount of empirical

materials, which consists of i.e. personal experiences, case studies, interviews, interactional texts, etc. It employs this way a theoretical or purposive sampling to the researcher, in order to get a more in-depth and information-rich look into the phenomenon being investigated. This happens i.e. by the researcher intentionally selecting participants for the study.

6.2 Interview

Qu and Dumai (2011, 238) sees an interview being directly linked to the qualitative research and it being the most important qualitative data collection method. It is according to them especially important within ethnographic research and field studies. Even if there is a difference between quantitative and qualitative research, the first of these two is often using the interview method from the qualitative research for a pilot study, in order to gather preliminary data before the development of a survey.

Interview as a research method has been very important, simply because it deals with people using their language and emotions while explaining. Language itself gives a unique standpoint, which allows people to symbolize their experience. It gives a different meaning to the answers seen in accordance to their behaviour. This is again crucial for the research and gives deeper understanding of a subject (Seidman 2008, 8,9).

6.3 Interviewees

Within this section of my thesis, I shortly introduce the participants of my interviews. From these participants, I will gather valuable information of their mindset and how they see their position within their organization, what needs to be changed according to them, what they like, etc. From these answers, I will later on determine through evaluation with the given tools, on how to improve service design for the RDI services, which are supporting industrial companies in their digital transformation.

6.3.1 Futurice

Futurice is one of the most well-known service design companies in Finland. They are crucial for the thesis as an expert on the side. With their hints and tips resulting from my interview with them, I will be able to find better tools for the improved service design of RDI. The company itself helps organizations with change and support them to be prepared with future tasks. They have an expert team for engineering, design and strategy, in order to be able to see given tasks from different angles. Their services to companies include transformative experiences, software development, intelligent services and ecosystems, cloud and data platforms, etc. (Website of the Futurice 2020).

6.3.2 Industrial Companies within the Rauma and Pori area

The companies being interviewed within this research are known as popular companies within the metal industrial sector. They are medium-sized companies with around 500 workers each.

6.3.3 Students

The students being interviewed are part of the before explained RDI unit and under supervision of their leading professors, being on their part again either in contact with the coordination unit or the company in question. They receive the instructions on the admired concept and work on a prototype, which would eventually fulfil the ideas of the company. Here not only the students will be interviewed, but also one of their supervisors.

6.3.4 Coordination Unit

The idea behind the modernization and digitalization program came from the European Digital Innovation Hub. According to a draft working document of the European Commission (2020) a European Digital Innovation Hub is an individual organization which as well includes all the smaller hubs under it. It is coordinating a collection of

organizations with interdependent proficiency, with a non-profit objectives which are supporting companies- specially small and medium sized enterprise and mid-caps (companies which stock is worth between 2-10 billion dollars) – and/or the Public sector within their digital transformation. The EDIH concept is further connected to the coordination unit. This unit again is the local provider, as well as developer of the artificial, robotics and modernisation solutions. The solution proposals are i.e. submitted by universities, research groups, private individuals and companies on the needs of different companies. The coordination unit, therefor, is supporting the modernization tasks and gets funds from EDIH, which again could be used for the support of possible prototypes developed by the RDI (Robocoast, n.d.).

6.4 Interview process

The interview process will be conducted by having three different groups around the EDIH'S supported RDI hub. All three groups are being interviewed by me with questions, which are different for each of these groups, but still being related to the subject itself. This way I can ensure the insight of the problem being researched from different angles. Also, questions being asked to one group might not be fitting again to another. The people being interviewed are in key positions within the groups and authorized for the interview process.

These groups were sorted into three different categories. The first category is consisting of the engineering students, which are directly linked to the innovation and prototype development for the company in question. They get basically the instructions on how the admired prototype has to be and are working on creating it. This group, which I named Group A are being first interviewed by me with chosen questions especially fitting this group (see Appendix 1).

Within the second interview, I will focus on the firms, which are requesting the innovation help from the given students. These firms are located within the second group, named Group B. Here I will get especially deeper knowledge with my interview on what the firms are actually looking for (see Appendix 2).

The third interview will be hold with the third category of interviewees, being located within the third group, named Group C. Here, the group is consisting of the research, development and innovation companies and supporters, building a link between the

research students and the companies asking for the innovation or prototype. This group will be interviewed with questions especially regarding to their standpoint between the above mentioned groups (see Appendix 3)

6.5 Collection and Analyzation of the Data

Through the qualitative research methods of in-depth interviews, the answers were documented and evaluated. The answers are being monitored by me and compared between all the three groups. I will try to find similarities and opposites regarding the service, connection and communication between the three given groups. Through the evaluation and comparison between the groups, it has to be possible to find similarities of their needs for improvement. I will try to find these needs with the given service design tools. The findings will be pictured in paragraphs, making it easier for the reader to understand the outcome and possible tools being used derived from the outcome.

7 RESEARCH ANALYSIS

7.1 Insight

Insight is a part of service design and connected to the Lean Service Creation tool. The underneath seen table 1 is a summary of the most important user needs, which became clear during the interview process. The user needs, which we found out will support us in order to fulfil the RDI objective. Table 1 shows also, why some of the given answers are so important for their users and which kind of value they provide. The table in question lists the interview answers of two different student groups, two Satakunta industrial companies, Robocoast, Futurice and of the HUB sector from SAMK (Webpage of Futurice 2020).

Table 1. The most important summary of the interviews.

The user needs a way to:	It is important because:	Related emotions and values:
Companies need to get results fast while universities are more slowly.	In companies, every minute costs.	Companies could develop faster and being up-to-date compare with other rival companies.
Business students or some other degree students could add benefits for the RDI service.	Having students involved from different fields of study is important. Each field has its own way of thinking and it is important that the students realize this already during their studies.	<p>Business students could do for the company calculations with proper ROI and Capex/Opex. It would definitely help investment project being approved by upper management, since this is what matters most.</p> <p>Business student could as well support company after they have been getting their new product with marketing.</p> <p>If a company for example is working within the health-care sector, then nursing students would be very important to add to the process.</p>
Companies are expecting real experts from universities, so they have the ability to finish their project.	Companies cannot risk too much with mistakes, if they work together with people who does not really know what they are doing. Also, company projects should get finished, which helps students as well to get	If students are really good and they are able to work on real projects, they will learn as well themselves. Also, they might get some future working position or could develop their own firm.

The user needs a way to:	It is important because:	Related emotions and values:
	prepared for their future working-life.	If student do not finish their project, it is for the company lost time. Most likely they would be more afraid to try such a program again.
Students could need from the companies support even after the project. (possible job possibilities/ connections).	It would give for the student more enthusiasm to work on the project, if it could bring for the future benefits for them.	It is preferable, if all parts respect each other. All of the working parts involved, should be behind the project and see the advantage they get out of it.
Company want to have own employees as well in the RDI project.	Companies own employees could make sure that everything will be done as they expect and what the company value.	It could minimize misunderstandings and mistakes. Also, if one person is from the company, he/she could teach the students.
To get company management more open towards innovation.	Management has the power. If they do not believe in innovation, the company could not develop.	All the other employers would suffer and might lose the interest on working in the company if the management does not accept to develop new innovations.
Company needs more than only one project.	Digital innovation does not come within one project, it comes step-by-step.	Every accomplished project brings new ideas, expertise to personnel. It is something what cannot be learned by one course or training.
Company needs overall vision more than projects as case-by-case only.	It would show the whole picture what a company actually needs and which way the company should watch forward.	Case-by-case projects might not show the whole picture, it might only use more resources of the company. Overall vision could develop company their own business strategy.

The user needs a way to:	It is important because:	Related emotions and values:
Both companies truly need digital innovation for their companies.	Digital transformation gives companies clear strategy, budget and dedicated personnel to drive development projects in the company.	Digital innovations can get and be collected as much as data is researched and afterwards it will help to understand what and why is smth. happening.
Difficult to find investing funds for the new technology when the company is relatively small.	Small companies have often limited resources.	Innovation could help small companies to develop and maybe even to grow bigger.
Companies need to know if the innovation actually pays off	Could minimize the risks. Companies need to do research before they invest into anything.	It would make companies more into of digital innovation and to try RDI service.
Companies could need digital innovation specialist into their companies.	There would be one person who would be highly concentrated on the project and would research/work on it every day.	The person who could be responsible of the digital innovation could gather every day as much knowledge about overall innovation, robotics, automation. Furthermore, he or she would be able to find out what the company exactly needs.

7.2 Ideation Sandbox

The Ideation Sandbox, seen in table 2, is the first kick-start for developing new ideas. It includes business objectives, team missions, company missions and the purpose for the society. All of these most important parts are formed together and gives ideas on how to fulfil the maximum needs. It gives, furthermore, ideas on how to work forward and improve. The ideas coming out, are likely fulfilling the wishes of these parts and will give also the best solution. (Website of the Futurice 2020).

Table 2. Ideation Sandbox.

Ideation Sandbox by Futurice

<p>Business Objective To become more digitalized</p> <p>Own the latest technology</p>	<p>Ideas that fill the user need, business objective and/or society purpose:</p> <ul style="list-style-type: none"> • Developing well-working ecosystem where everyone is 100% into getting great results <ul style="list-style-type: none"> - Involving for example business students and as well another field student's (depend of the business area). They must be good in what they are doing. - Companies own employee should be as well inside the project. - Investing support • Coordination unit could make companies management more interested about the RDI service. For example, giving examples of successful happenings. <ul style="list-style-type: none"> - They would be connected with company long-term and help to find the best strategy for the company as well supporting with innovation. Finding out what given company could exactly need. - Make company to believe that the innovation will pay off for them.
<p>Company Mission To manufacture high-quality products in close co-operations with customers</p> <p>To be leader in Finland within their brand, as well to grow internationally.</p>	
<p>Team Mission To develop ecosystem where companies, researchers and students work together sharing data and knowledge.</p>	
<p>Purpose of the service for the society? Gives everyone chance to develop new innovations</p> <p>Makes people life more easier and better within new technology.</p>	

7.3 Idea Accelerator

Within the previous canvas, which was the Ideation Sandbox, we were developing some of the new ideas. The Idea Accelerator, seen in table 3, helps us again to work forward with our seed ideas. It clarifies, how the user will adapt to the new service and its objectives. The main questions to be asked here are, if there is an environment or a social impact of it and also, if it matches with our goal?

Table 3. Idea Accelerator.

	Idea 1	Idea 2
Seed idea	Well-working RDI ecosystem	More marketing for the companies how RDI service works and how does it pay off for them.
Behavioural gap	It makes user life easier. It gives more and better results as well more support for the user.	It would bring a great advantage for the user. The user does not need to research too much by themselves. It would save a lot of user time and would give the user more trust.
Business objective	Companies would get ideas, on what innovations they need. It could bring also new ideas and support latest technology.	To make everyone in the company interested about the project. Giving more free hands for their employees to develop and test new ideas. Supporting the company to find the best strategy for them and support the company in a long-term relationship.

Social purpose	<p>A well-working ecosystem could bring a lot of benefits for everyone. Everyone could try to be part of innovation, only having great ideas and the team all together can build it up.</p> <p>After that the developed digital innovation could help all of us (better systems to hospitals, childcare, shopping, supporting people with special needs etc).</p>	<p>If the company has a clear strategy it makes working for everyone easier included of this organization.</p> <p>Everyone would know the goal and work together to make innovation paying off for them.</p>
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Table 4 shows the main idea, which became eminent within the earlier seen Insight service design tool of table 1, using three different analysing canvases.

Table 4. Accelerated idea.

Accelerated idea
<p>Better working ecosystem via enhanced teamwork.</p> <p>More diverse teams of different fields in order to accelerate productivity.</p> <p>A rewarding system for the participants of a project.</p> <p>Trust building between the participants to make investments into new technologies easier via lower barriers.</p>

8 IMPROVED RDI SERVICE BASED ON THE RESEARCH RESULTS

I created the best working ecosystem when it comes to RDI, seen in figure 4. It consists of two steps. The first of the two has be a major impact on the Robocoast company. They should have a deeper knowledge of the companies in question, beforehand when visiting them and before invite them to their network. This way it would save

vulnerable time of the companies, build trust and would help Robocoast to prepare which kind of service the given company could need and how they could support them accordingly.

The second step shows, how the improved RDI service could work. The project would include an educational organization, high skilled students and one professional from the target company, for who they are building the new innovation. The improved RDI service would build stronger connections and better outcomes. The integrated employee of the target company could follow every step made within the innovation process and could support the students if needed.

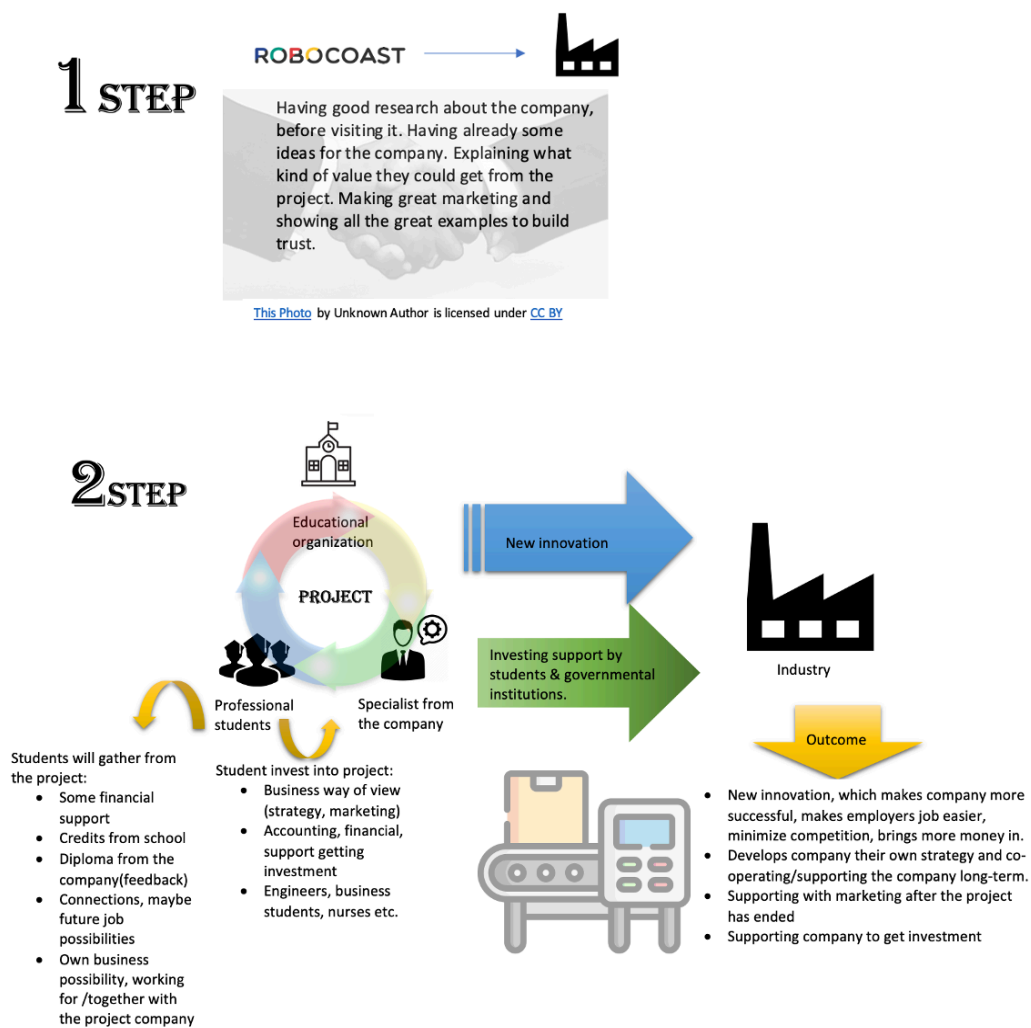


Figure 4. Improved RDI service (Thesis author 2020).

8.1 Value Canvas

The value canvas of figure 5, helped me to to analyse the already improved RDI service. I wanted to know, if there are further pain points to be found. The canvas showed, that within the new improved service are many pain relievers, which need to be tested, in order to see, if they work efficiently.

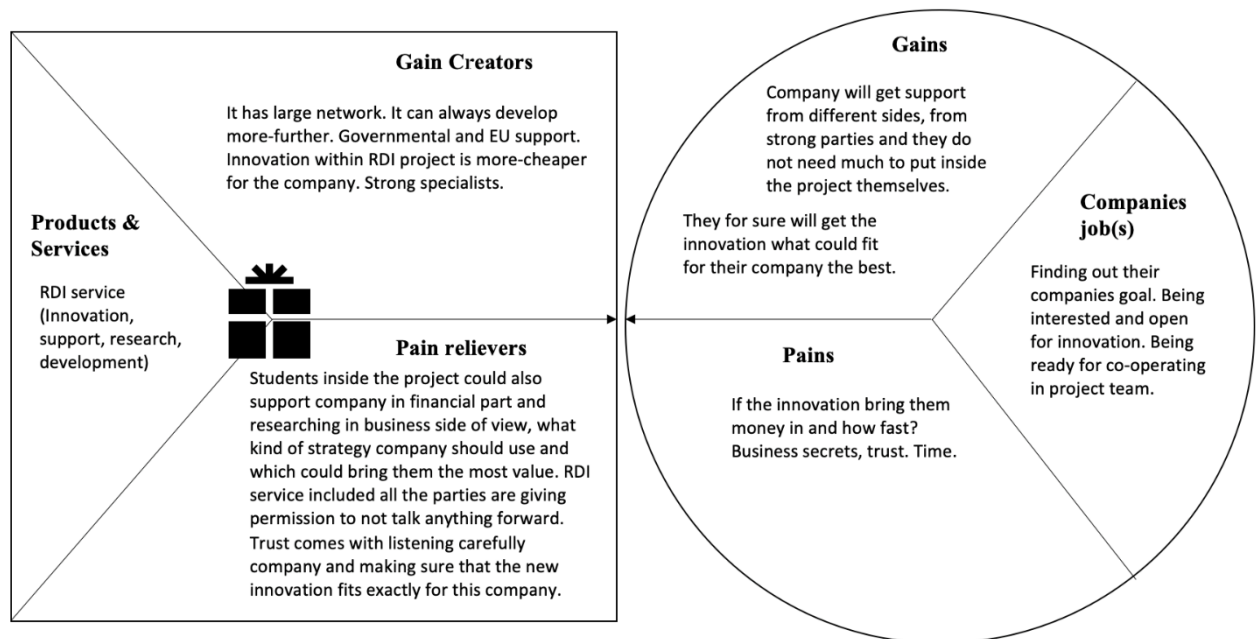


Figure 5. Value canvas.

8.2 Service Blueprint

I was using the service blueprint, seen in figure 6, after receiving the results of the improved RDI service. I wanted to have a clear view over my new idea and how it works step-by-step. My idea seemed to work out very well, since there was during the

creation not any new unexpected problems coming up. The next step would be to test it in action.

Service Blueprint

STEPS	BEFORE HAND			USING THE RDI SERVICE			AFTER USE		
Company	Making research about innovations, trying to find out their need or problem	Contacting Robocoast	Meeting with Robocoast, finding out the best innovation possibilities for their company	Meeting the students, giving them tasks to do	Following the project and supporting students if they need	Approving new innovation	Testing new innovation	Giving feedback for all the participants	Staying connected within the network their built with the project
Students				Getting task from the company	Working together with different specialist (one person from the company)	Supporting company with financial part and investors part	Making marketing for the new product	Business students supporting company on their development	Staying contact with the company
Robocoast	Researching the company and trying to find out their needs	Being contact with the company	Meeting with company	Finding the best partners working on the companies challenge	Choosing the best option who could create a solution for the company	Supporting company financially by building prototype	Keeping company in their network and doing marketing for them	Holding contact with the company for future projects	

Figure 6. Service blueprint.

8.3 PARTICIPATION OBSERVATION

While visiting the companies, I found out, that it was rather difficult for them to understand the meaning behind the RDI service and what they will get out of it. The companies needed fast answers and knowledge, which was not always provided clearly. Companies in general often do not have the time, to exceed meetings and the communication was a bit coming short. The RDI service provider could overcome this issue by making a deeper research about the company beforehand. The service providing process could be sharper that way and the special needs of a certain company could be addressed more efficiently. Also, the RDI provider could develop further ideas more naturally and thoughts on how the company could benefit from it.

I recognized, furthermore, that trust is for all of the companies very important, which has a major impact on the service providing actions. One of the participating

companies mentioned straight, that they want a product, which suits them and their wishes best. This is happening best, according to them, with engineers and AI people being honest and reporting on what kind of process has been made.. In case of potential occurring difficulties within certain tasks, a solution should be found together.

Trust is, therefor, very important and build with all elements involved within the service being honest to the client company. Every participant should take the project serious and should understand what the company needs. It is not only important to have the newest technology developed, but also important that it answers exactly the company's wishes.

CONCLUSION

Within my thesis I was, as earlier mentioned, researching closer the relatively new topic of service design and its actions within Finland's Satakunta area. I had the possibility to team up during my compulsory practical work with Prizztech Oy, a company with a deep understanding of artificial intelligence, industrial robotics and the overall modernization process. The modernization was conducted via a research and development based ecosystem, connecting different organizations to it. Despite the strong economy within the western part of Finland, companies are coming short in connecting them with such digital transformation providers, which gave me the idea to sharpen the service better, in order for the companies to develop themselves even further. The main questions were, therefore, on how to build with service design tools and methods sustainable service for digital transformation. Furthermore, I wanted to find out, which kind of service design tools should be used to create such a sustainable service and how to the companies are getting more valuable that way.

To find the answers to my crucial research questions, I was first gathering a vast amount of theory on service design and used it as the the base for the qualitative research. Within my qualitative research I was conducting interviews, observations and had surveys with the companies, students, the RDI provider and a service design company. The gathered information got then screened with the help of different service design tools, which brought me that way to the desired conclusion. Trust was an issue

for the firms towards the RDI provider, which needs to be neutralized and build beforehand. This could happen with gathering knowledge about the company in question. With a deep knowledge of the target company the RDI provider knows exactly what the company wants and how it is operating. That way the RDI provider is able to come towards the company's expectations more naturally and more effectively. Knowing what the customer wants and showing interest in their actions, is a way to build the missing trust. Also, this helps the time management of a company, since engaging sharp to the company's expectations will eliminate over time during meetings and making the connection between the different involved parties more efficient.

The communication is also linked directly to that trust, since in case of difficulties, they should be mentioned directly and a solution should be found together within all parties involved.

Furthermore, I found out that next to lacking trust the RDI service itself should be made more efficient. The service was sometimes missing sensitive evaluation for companies operating on the economical market. A way to made them more fitting, would be to install within the RDI service also students from the field the service is made for. This would be for example having business students within the team for a service made for the economy, or nursing students being part of the service made for the health sector, etc.

Also, I found out that the efficiency of the students should be supported further for them to be more tied to the project. Having a new designed rewarding system of credits, scholarships, financial aids, etc. could make the work within a RDI project more desirable. That could lead also to higher application numbers and evaluated standards among the researchers and engineers.

The topic could be further analysed in future researches, by screening more companies from different sectors and to apply the newle gathered information from this thesis. Also, it would be interesting to analyse the strategic value applied service design brings to the company itself and how it changes the company's turn-over.

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Questions for the companies

1. Could you introduce yourself and tell more about your company you are working for?
2. In what Industry your company is working?
3. What is your company's goals?
4. Where you would see your company after five years?
5. Does your company have already experience with digital transformation and how did it go? What could be possibly done to make it better?
6. What kind of value did it bring into your company?
7. How did you get to know about the development service/ student project?
8. What kind of value did you expect to get from student pilot?
9. What do you think about including student pilot also business students who would research and give support on the business side?
10. What do you think overall about the digital transformation and how does it affect your organization?
11. What are you valuating when it comes to Digital Innovation?
12. What kind of innovation methods your company is currently using?
13. Do you have in your company someone responsible for the Digital Innovation?
14. What kind of challenges your company have according to Digital Transformation? (innovation challenges, transformative challenges, governance challenges, lack of specialists, funding)
15. Could you tell me which factors are most important for your company, when it comes to Digital Innovation? Product, service package, price, delivery, quality, value-adding services, technology, distributing channels, smooth service, time.
16. Do you prefer contact by phone, e-mail, face-to-face?
17. Is there anything you would like to still add?

Questions for Robocoast and University

1. Could you introduce yourself and tell more about your company you are working for?
2. How are you connected with industrial sector or digital transformation?
3. What kind of services student pilot offers and what is your option what they should offer?
4. What advantage Finnish West Coast companies have when it comes to digital transformation?
5. Is there any limitations when using innovation lab?
6. Why digital innovation is important for local companies?
7. How important is impact of the students in supporting the companies?
8. What do you think about having also not only technical students but for example also business students?
9. Which are usual problems what companies face and for what they are seeking for support?
10. What is usual complication if it comes to digital innovation in companies?
11. How much knowledge companies overall have about digital transformation/innovation?
12. What kind of value companies will gather from digital innovation?
13. What do you think what could be a goal in cooperating universities with companies?
14. Do you have any view where cooperating between students and companies would bring in future? Any new idea?
15. What value universities or students will get by cooperating with companies?
16. Is there any limitations for small size companies, using RTI services?
17. What is legal and ethical issues?
18. Is there anything you would like to still add?

First student group interview.

1. How did you meet the company?

Company came itself to meet us in school

2. How did you were in contact within the company?

With mobile phone

3. Did you visit the company?

No. Company came two times school to meet the students (on the middle of the project and in the end of the project).

4. What the company was asking for you do create for them?

They were asking if we could develop machine with arms, which could pick the cubes up from the box.

5. Did you create simulation or real product?

Real product.

6. How was the communication between you and the company?

Company just told us what they need and we made it.

7. Did you know directly what you will do or did you had many different ideas?

We had many ideas but within the teacher's support we choose one best one out.

8. How many people from the company you meet and what was their positions?

We meet three people: Managing Director, Marketing Manager and Production Manager.

9. Could you tell me the student point of view, how did you like such experience?

We have been making over ten similar cases. It was great experience for us, since it feels much better to use your hand than sit only on the classroom. Companies as well are talking to each other, so it is important for us to give best- this could give maybe in future better job possibilities.

Also, was great to have different age and different experience people around. It was helping us to see the whole picture from different point of view.

Furthermore, it would be nice to get feedback from companies, if they use the product and how did they like it.

Second student group interview.

1. How did you meet the company?

Teacher's gave us the project. Companies contacted the SAMK.

2. How did you were in contact within the company?

Most of the communication was hold by the e-mails (around 20-30 messages). Two to three real meetings, once in SAMK and twice in the company.

3. Did you visit the company?

Yes.

4. What the company was asking for you do create for them?

Gluing magnets together by using UV light. Magnets needed to be exact same high, not even mm could be the difference.

5. Did you create simulation or real product?

The real product.

6. How was the communication between you and the company?

Company had a clear view what they want. They gave us free hands and bought needed equipment for SAMK.

7. Did you know directly what you will do or did you had many different ideas?

We had many ideas, for example 3D printing etc.

8. How many people from the company you meet and what was their positions?

Managers, Quality Manager.

9. Could you tell me the student point of view, how did you like such experience?

It was really good to have some practical experience as well. It teaches much more than basic theory. Definitely was great experience.

First company answers.

1. Could you introduce yourself and tell more about your company you are working for?

I'm working as a development engineer in metal industry.

2. In what Industry your company is working?

Metal manufacturing industry

3. What is your company's goals?

To manufacture high-quality products in close co-operations with customers

4. Where you would see your company after five years?

5. Does your company have already experience with digital transformation and how did it go? What could be possibly done to make it better?

Our company is gathering already a lot of data from the production, but most of it is not yet automatic and analyzing could always be better. We have made few pilot projects and some of them were so successful that they were further developed into the production. Digitalization of the administration and finance departments has started slowly.

6. What kind of value did it bring into your company?

Data-driven decision making, opportunity to act proactively instead of reactivity (for example in maintenance), enables machine and end product quality improvements, better yield, data analyzing (measurements saved to database)

7. How did you get to know about the development service/ student project?

Having conversations with the contacts established in the earlier working history. Participating events which are organized by the local development company or universities.

8. What kind of value did you expect to get from student pilot?

Mainly new ideas and concepting. Also, our company might have some base idea, so it is very valuable that local university has possibilities (expertise, resources and devices) to test these ideas. This way we get valuable info for the investment process. However, the documentation of the results was not as high-quality as expected. Getting a company's own employee to be part of the research team could be worth a try.

9. What do you think about including student pilot also business students who would research and give support on the business side?

Why not? So far, our student cases were mainly technical, so the business side and "internal marketing"/influencing after the project was in the company's own hands. This might bring new perspective and ideas to the business case. Properly finalized and visualized business calculations with proper ROI and Capex/Opex calculations would definitely help investment projects being approved by the upper management – because in the end, those are the ones that really matter.

10. What do you think overall about the digital transformation and how does it affect your organization?

Digital transformation is a fact which is happening all the time and companies shouldn't underestimate it. That's why companies should have a clear strategy, a budget and dedicated personnel to drive the development projects in the company. Currently in our organization, all the projects are estimated case-by-case rather having an overall vision.

11. What are you valuating when it comes to Digital Innovation?

Digital innovations shouldn't be judged by one single project and failing shouldn't be feared. Every accomplished project will bring new idea and know-how to the company and the result might have impact to some other projects, developing happens step-by-step without even realizing it. Every project will bring new expertise to personnel and this is so wide technology area which cannot be mastered ever or learned by completing one course or training.

12. What kind of innovation methods your company is currently using?

Unfortunately, no standard or consistent methods is used in our organization, so each project is under the responsibility of its leader. We have made few projects with local universities and development organization, but this collaboration could be continuous and more consistent.

13. Do you have in your company someone responsible for the Digital Innovation?

No.

14. What kind of challenges your company have according to Digital Transformation? (innovation challenges, transformative challenges, governance challenges, lack of specialists, funding)

One of the biggest challenge relies on lack of understanding the latest technology and its possibilities and advantages comparing to the conventional technologies (throughout the whole organization including top management as well because they will accept/reject the project in the end), pessimistic attitude, not having trial and error culture and open development attitude is missing: “let’s try what we can do with this in two weeks”, every project is considered as one independent money-making machine, not as a whole of something bigger.

15. Could you tell me which factors are most important for your company, when it comes to Digital Innovation? Product, service package, price, delivery, quality, value-adding services, technology, distributing channels, smooth service, time.

Price, delivery and quality. High-quality pilot projects including high-quality documents with universities and local development organizations would increase the credibility of new technologies and should be done to tackle the stuck debat, pilot price issue and to get a better understanding on the key problems.

16. Do you prefer contact by phone, e-mail, face-to-face?

Email and face-to-face

17. Is there anything you would like to still add?

Resistance to change. There are management methods and techniques that can mitigate the resilience to change, especially among the blue collar workers.

Second company answers.

- Could you introduce yourself and tell more about your company you are working for?

My name is Jani Hiljanen. I am managing director and owner of Tukimet Oy. I had an over 20-year experience in product development, product design, quality management and process optimization in various companies in Rauma area. Since 2008 he has expanded his experience in the health-care sector.

Tukimet Oy is the manufacturer of the Tyke® brand. We offer a versatile and reliable range of assistive aids. Our production facility is located in the UNESCO World Heritage town of Rauma, Western Finland. The modern production and skillful personnel of Tukimet Oy guarantee high quality of products, competitive prices, and reliable delivery times. We obtain high-quality raw materials mainly from Finland. All cooperation partners are first-rate domestic companies with a long experience in their field.

(tukimet.fi and wheellator.com)

- In what Industry your company is working?

Tukimet Oy is working as a manufacturer and an importer in health-care sector mainly in Finland.

- What is your company's goals?

We want to be the market leader in Finland with TYKE® brand and also our goal is International growth.

We are renowned for our precise manufacturing and design that has the end-user firmly in mind. Tukimet develops and manufactures innovative aids for the disabled, elderly and people with special needs.

- Where you would see your company after five years?

The market leader in Finland and with Wheelator® and TykeSkateR® products and brands our focus is to work with importers in several countries.

- Does your company have already experience with digital transformation and how did it go? What could be possibly done to make it better?

(help me a little bit, what you mean?)

- What kind of value did it bring into your company?

- How did you get to know about the development service/ student project?

I know some of SAMK staff.

- What kind of value did you expect to get from student pilot?

Fresh way of thinking and new ideas of technologies from the future.

- What do you think about including student pilot also business students who would research and give support on the business side?

That is good. We need to support students in all sectors. If we could give them real problems from the companies, it is like win-win situation.

- What do you think overall about the digital transformation and how does it affect your organization?

It is here we cannot hide it and we don't need to hide. It will help us when we can have more standard systems of working.

- What are you valuating when it comes to Digital Innovation?

I think with all digitals innovations you can get and collect so much data and afterwards it will help you to understand what and why something happened.

- What kind of innovation methods your company is currently using?

Hard to say ... all available kinds.

- Do you have in your company someone responsible for the Digital Innovation?

Not named, but our managers all are.

- What kind of challenges your company have according to Digital Transformation?
(innovation challenges, transformative challenges, governance challenges, lack of specialists, funding)

In health care sector problems is to have new ideas, innovations, and products in. There are no standard methods to do it. Even we are in EU every country has own systems to accept new things.

- Could you tell me which factors are most important for your company when it comes to Digital Innovation? Product, service package, price, delivery, quality, value-adding services, technology, distributing channels, smooth service, time.

I like more value-adding services and products of itself.

- Do you prefer contact by phone, e-mail, face-to-face?

Sorry, my English is not so good so best for me is email and in case when needed face-to-face.

- Is there anything you would like to still add?

Very hard questions, Digital and innovations is so wide sector. I hope I can catch your points.

Robocoast interview answers.

1. Could you introduce yourself and tell more about your company you are working for?
 - a. I am Head of Robocoast. Robocoast is Digital Innovation Hub coordinated by Prizztech Ltd. Prizztech is a business development company working to improve business performance and competitiveness in the Satakunta region. We are nonprofit company, owned by the municipalities in the Satakunta region. Robocoast is mainly the HUB -organization. We just connect the need of new digital solutions (Robotis, AI, HPC, Cyper etc.) from industrial sector to the expertise of technology companies and universities
2. How are you connected with industrial sector or digital transformation?
 - a. We have connected to the different kind of company networks (industrial sector) and we get to know the companies actively by visiting and by our events. We have our own robotics and AI company network - Robocoast (digital transformation) and the partner universities as SAMK, VAMK, JAMK, Centria, University of Vaasa and University of Jyväskylä.
3. What kind of services student pilot offers and what is your option what they should offer?
 - a. *What is the student pilot?* We need experts/students from universities to solve the technology challenges from the industrial sector and the Robocoast company network.
4. What advantage Finnish West Coast companies have when it comes to digital transformation?
 - a. We have in the West Coast the best AI and Robotics company network in EU. It consists of over 100 very talent companies. So, all companies in the West Coast can find here high-level experts of the Industry 4.0 and good the universities. So, you do not need to go far :).

5. Is there any limitations when using innovation lab?
 - a. *What you mean about Innovation lab?*
6. Why digital innovation is important for local companies?
7. How important is impact of the students in supporting the companies?
 - a. It depends do your company developing new digital innovations or using them. But generally speaking, it is way to develop your company's effectiveness by get to use new digital technology solutions. But in the real life it much harder job than just take new technology and to use it in the processes of company and get good results.
8. What do you think about having also not only technical students but for example also business students?
 - a. It is necessary to look at the problem or challenge in both ways: in the business point of view and the technology point of view to get the best result.
9. Which are usual problems what companies face and for what they are seeking for support?
 - a. That varies a much. Companies wants to test new technologies in their processes and find new technologies. Companies wants to also make plans how they can modernize their processes.
10. What is usual complication if it comes to digital innovation in companies?
 - a. Where to find right expert / company. It is also difficult to find funds to invest to the new technology if company is relatively small.
11. How much knowledge companies overall have about digital transformation/innovation?
 - a. It varies a much. In generally companies are very interested in new information related about Industry 4.0 theme and case studies.
12. What kind of value companies will gather from digital innovation?
 - a. It depends. New effectiveness of processes mostly.
13. What do you think what could be a goal in cooperating universities with companies?
 - a. Universities must take care that companies get concrete advantages from cooperation and the work must not be left unfinished. But there

are many different cases in the field, so it is hard to tell what the right answer is. Companies need new experts also.

14. Do you have any view where cooperating between students and companies would bring in future? Any new idea?
 - a. Students can establish a new company. For example, that way company will get the support after the project have ended.
15. What value universities or students will get by cooperating with companies?
 - a. please, do not ask that! (I do not have time to explain now...)
16. Is there any limitations for small size companies, using RTI services?
 - a. *What is RTI?*
17. What is legal and ethical issues?
 - a. *I do not know....*
18. Is there anything you would like to still add?
 - a. Yes 😊

University answers

- Could you introduce yourself and tell more about your company you are working for?

I am working as the director of the University Consortium of Pori and as the Principal Investigator (PI) of the Data Analytics and Optimization research group in Tampere University

- How are you connected with industrial sector or digital transformation?

The students of UCPori are interacting with industrial partners and public organizations in the form of various course projects and MSc Thesis projects. Our researchers are working in R&D projects related to industry cooperation. Pilot studies related to digitalization and using new technologies are continuously carried out. Also, I attend several boards and steering groups related to industry cooperation.

- What kind of services student pilot offers and what is your option what they should offer?

If 'student pilot' here means the pilot studies carried out by students then, at the university level, the aim of these studies is to apply academic knowledge to the problems brought up by the organizations. This may involve solutions based on solid theoretical background, for example. The questions asked and answered in these studies should offer broader view on the problems and compare various solutions based on state-of-the-art research results.

- What advantage Finnish West Coast companies have when it comes to digital transformation?

Advantage with respect to whom? The companies are supported by organizations such as Prizztech, University of Applied Sciences and University Consortium. R&D projects and pilot studies are continuously carried out. The Robocoast network also plays an important role in supporting companies. On the other hand, when compared to cities where major universities are located, getting, for example, Business Finland research money is more challenging.

- Is there any limitations when using innovation lab?

What does 'innovation lab' mean here? In my view, the main challenges in cooperation between universities and industry is that we tend to live in different 'worlds'. Universities are sometimes too slow to react to the companies' acute needs. Another issue is that building trust and getting to know each other takes time and continuous interaction. Sometimes the expectations on the cooperation (from both sides) may be not realistic

- Why digital innovation is important for local companies?

Digital innovation is important in order to stay competitive. Digital solutions enable to optimize the processes (both in production and management). Also, digital platforms enable companies to work more closely together, to share data and resources where it is feasible. Also, a lot of open data can be made available to support decision making.

- How important is impact of the students in supporting the companies?

The students are future employees, so in this respect it is important that they become familiar with local companies already in the course of their studies. Students are also carrying out pilot studies, thesis projects etc.

- What do you think about having also not only technical students but for example also business students?

Having students involved from different fields of study is important. Each field has its own way of thinking and it is important that the students realize this already during their studies. On the other hand, most of the problems faced by companies have multiple aspects. We have held a common course with SAMK for several years now, where students develop solutions to challenges given by companies. There are students from management, engineering studies and healthcare working together. We have got very positive feedback from both companies and students.

- Which are usual problems what companies face and for what they are seeking for support?

In my field it is most often applying a new technology or developing algorithms for data management and analytics

- What is usual complication if it comes to digital innovation in companies?

Probably the main challenge is to show that the innovation actually pays off

- How much knowledge companies overall have about digital transformation/innovation?

Companies are at very different stages what comes to digital transformation. There are companies using advanced technology and platforms and others who have just started to collect data from their processes

- What kind of value companies will gather from digital innovation?

They can optimize and simulate their processes, decrease waste of resources and make evidence-based decisions

- What do you think what could be a goal in cooperating universities with companies?

The goal would be a well-working ecosystem where universities work together with companies in training as well as research.

- Do you have any view where cooperating between students and companies would bring in future? Any new idea?

I think we should recognize and develop ecosystems where companies, researchers and students work together sharing knowledge and data.

- What value universities or students will get by cooperating with companies?

Working together with companies brings experience about the relevance of the skills acquired in the university. Also, to stay competitive, companies have often the best state-of-the-art knowledge on the specific area they are working in.

- Is there any limitations for small size companies, using RTI services?

The limitation comes from limited resources. It is more difficult for a small company to allocate resources for research. On the other hand, there is R&D funding available for development activities targeting SMEs.

- What is legal and ethical issues?

Well, in all activities the legal and ethical issues need to be taken into account.

- Is there anything you would like to still add?

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Insight table – summary of answers

	Needs + other key findings:	Thinks and feels:	Suprising answers:
Student group 1	<p>Possible connection after project within the company.</p> <p>Feedback from the company after the project.</p>	Students really enjoy RDI way of doing a project.	Company lets students to build real product and no simulation.
Student group 2	Students had many innovative ideas	Students value strongly practical experience.	The company gave to students free hands to develop what they find important/interesting.
Company 1	<p>Company goal is to manufacture high-quality products in close co-operations with customers</p> <p>Company has been gathering a lot of data from production but mostly the company is not very automatic yet.</p> <p>Digitalization of the administration</p>	<p>The company's own employee could be as well inside the student project, it would make the documentation process better quality.</p> <p>The company has pessimistic attitude, when it comes to digital transformation.</p> <p>Highest</p>	<p>Knowledge about student project as it is RDI has been coming to the company from previous contacts in working history, as well from different events organized by local development companies or universities.</p> <p>The company has already experience within the student pilot program, however the documentation of the</p>

	Needs + other key findings:	Thinks and feels:	Suprising answers:
Company 1	<p>and finance has been starting slowly</p> <p>Big challenge for the company is lack of the latest technology.</p> <p>Company is expecting from student to find some new ideas, as well many times company have already an idea and they are just expecting from local university to get needed expertise, resources and devices to test it.</p> <p>Student pilot would give the company valuable info for investment.</p> <p>Most important for the company if it comes to digital innovation are</p>	<p>management does not have open development attitude.</p> <p>Digitalization could bring to this given company value as it would be: Data-driven decision making, opportunity to act proactively instead of reactively, enables machine and end product quality improvements, better yield, data analysing.</p> <p>Digital transformation gives companies a clear strategy, budget and dedicated personnel to drive development projects in the company.</p> <p>Top management is expecting from</p>	<p>result has not been so high quality as they expected.</p> <p>Company would really like to have business students as well inside the project, since it could support the company after they have been getting their new product with marketing. Also properly finalized and visualized business calculations with proper ROI and Capex/Opex calculations would definitely help investment project being approved by upper management, since this is what matters most!</p> <p>Given company all the projects are estimated case-by-case rather than having overall vision.</p> <p>In this company nobody is responsible for the digital innovation.</p>

	Needs + other key findings:	Thinks and feels:	Suprising answers:
Company 1	price, delivery and quality.	<p>every project money making machine, not just something which could grow something bigger.</p> <p>High quality pilot projects including all the important organizations parts could help to get better understanding of the key problems.</p>	
Company 2	The person to be interviewed has over 20 years of experience from product development, product design, quality management and process optimization within various companies around Rauma. From 2008 on he has also expanded his experience in health-care sector.	<p>Business students included to the project would be a great idea, they need the support of students from all different sectors.</p> <p>Digital transformation is something which has gained importance and we cannot hide it. It helps us in having a more standard system of working.</p>	They know about development service/student project because of following SAMK University.

	Needs + other key findings:	Thinks and feels:	Suprising answers:
Company 2	<p>The company is manufactured and importer in health-care sector mainly in Finland</p> <p>Company goal is to be a leader in Finland within their brand, as well to grow internationally.</p> <p>The company has been renowned their precise manufacturing and design that it would be end-user firmly.</p> <p>Company develops and manufactures aids for disabled, elderly and people with special needs.</p> <p>They would like to see themselves after 5 years as a market leader in Finland and with Wheelator® and TykeSkateR®</p>	<p>Digital innovations you can get and collect so much data and afterwards it will help you to understand what and why is happening.</p> <p>Company values mostly when it comes to Digital Innovations: value-adding services and product of itself.</p> <p>Company challenge is that in the health care sector difficult to find new ideas, innovations and products. There is no standard methods to do it. Even being in EU, every country has their own systems to accept new innovations.</p>	

	Needs + other key findings:	Thinks and feels:	Suprising answers:
Company 2	<p>products and brands their focus is to work with importers from several countries.</p> <p>They hope from student project fresh way of thinking and new technological ideas from the future.</p> <p>Company does not have Digital Innovation manager named but all the managers are responsible for that.</p>		
Coordination Unit	<p>The person to be interviewed is the head of Robocoast, which is a Digital Innovation Hub, coordinated by Prizztech Ltd. Both companies are nonprofit, owned by the municipalities in the Satakunta region. Robocoast</p>	<p>It is good to look at the problem or challenge from both ways: business point of view (business students) and the technology point of view (IT students & engineers) to get the best results.</p>	<p>It varies a lot how much information companies have about digital transformation/innovation. Generally, companies are very interested about the Industry 4.0 theme and the case studies.</p>

	Needs + other key findings:	Thinks and feels:	Suprising answers:
Coordination Unit	<p>connects the need of new digital solutions (Robotis, AI, HPC, Cyper etc.) from the industrial sector to the expertise of technology companies and universities</p> <p>Robocoast is connected to different kind of organization networks (industrial sector) and getting to know the companies actively by visiting them and also creating events. They have their own robotics and AI company network - Robocoast (digital transformation) and the partner universities, such as SAMK, VAMK, JAMK, Centria, University of Vaasa and</p>	<p>The goal of cooperating universities and companies is that universities must take care for companies get concrete advantages from cooperation. The work cannot not be left unfinished. Companies need as well also experts.</p> <p>Cooperating between students and companies would bring it so far that students could establish their own company. This way the company could get further support even the project has ended.</p> <p>The usual problems are very different when the companies are seeking for</p>	

	Needs + other key findings:	Thinks and feels:	Suprising answers:
Coordination Unit	<p>University of Jyväskylä.</p> <p>Robocoast needs experts/students from universities to solve the technology challenges from the industrial sector and also from Robocoast company network.</p>	<p>support.</p> <p>Companies wants to test new technologies, find new technologies as well they want to modernize their processes.</p> <p>Companies will gather from digital innovation mostly new effectiveness of processes.</p>	
University	<p>The person to be interviewed is the director of the University Consortium of Pori and as the Principal Investigator (PI) of the Data Analytics and Optimization research group in Tampere University.</p> <p>His connection within the digital transformation in industrial sector is that the students of UCPori are</p>	<p>Limitations in cooperating between universities and the industry is that they tend to live in different 'worlds'.</p> <p>Universities are sometimes too slow to react to the companies' acute needs. Another issue is building trust and getting to know each other takes time and continuous interaction.</p> <p>Sometimes the expectations of the</p>	<p>The goal would be a well-working ecosystem, where universities work together with companies in training as well as in research.</p>

	Needs + other key findings:	Thinks and feels:	Suprising answers:
University	<p>interacting with industrial partners and public organizations in the form of various course projects and MSc Thesis projects. Their researchers are working in R&D projects related to industry cooperation. Pilot studies related to digitalization and using new technologies are continuously carried out. Also, he has been attending several boards and steering groups related to industry cooperation.</p> <p>Common problems for what the companies are seeking support for, are according to them, most often applying a new technology or</p>	<p>cooperation (from both sides) may be not realistic</p> <p>Students also gain important and valuable experiences, since they are future employees, so in this aspect it is important, that they become familiar with local companies already during their studies. Students are also carrying out pilot studies, thesis projects etc.</p> <p>Having students involved from different fields of study is important.</p> <p>We have held a common course with SAMK for several years now, where students develop solutions to challenges given by companies. There</p>	

	Needs + other key findings:	Thinks and feels:	Suprising answers:
University	<p>developing algorithms for data management and analytics</p> <p>Finnish Satakunta companies have the advantage, that they are supported by organizations, such as Prizztech, different Universities of Applied Sciences and University Consortium. R&D projects and pilot studies are continuously carried out. The Robocoast network also plays an important role in supporting companies. On the other hand, when compared to cities where major universities are located, earning Business Finland research money is more challenging.</p>	<p>are students form management, engineering studies and healthcare working together. We have got very positive feedback from both companies and students.</p> <p>Probably the main challenge is to show that the innovation actually pays off</p> <p>Working together with companies brings relevant experience, matched with the skills acquired by from the university. Also, to stay competitive, companies have often the best state-of-the-art knowledge on the specific area they are working in.</p>	

	Needs + other key findings:	Thinks and feels:	Suprising answers:
University	Value what companies gather from digital innovation is that they can optimize and simulate their processes, decrease waste of resources and make evidence-based decisions	Digital platforms enable companies to work more closely together, to share data and resources where it is feasible. Also, a lot of open data can be made available to support decision making.	
Service Design organisation	<p>The person to be interviewed is the Finnish known Service Design company Futurice, Open Source and Social Responsibility Lead.</p> <p>Many companies in Finland does not have strategy, only on the paper most likely.</p>	<p>Companies should have a strategy, such as making more efficient RPA Robots or looking more into technology, approaching into markets.</p> <p>Before making technology, the research should be made.</p> <p>Getting students on the board is a great idea, it is cheap and brings a lot of new ideas.</p>	Every company should have an extra specialist within digital innovation

	Needs + other key findings:	Thinks and feels:	Suprising answers:
Service Design organisation		Companies should learn about machine learning & machine vision.	