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# New business models enabled by changes in international contracts and legislation between Finland and Russia

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## ABSTRACT

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The purpose of this thesis is to study new potential business models enabled by changed legislative and contractual environment between Finland and Russia. Most of these changes concern the freight traffic between these two countries, and in the bigger picture, between EU and CIS countries. In addition to the legislative and contractual changes, the effect of contemporary trends in business, innovations and technology to business models is studied.

This study was conducted with qualitative approach, involving relevant companies and experts, both Finnish and Russian, for the premise of the thesis. The empirical research included 10 semi-structured interviews in Finland and Russia, and a survey that was distributed to manufacturing and logistics companies located in South Karelia.

The carried out research resulted to three different business model archetypes, which are supported by the used theory as well as conducted empirical research: Business models based on blockchain and similar technologies enabling transparent communication within a cluster, platform based business models and business models based on innovative subcontracting in new sections of the product value chain. These business models exploit the changes in legislative environment, as well as emerging technologies and innovations. The presented models in this thesis are generalized to industry level and should be used as a reference to create specific company level business models that fit in the unique context of the given company, industry and type of business.

Some of the companies that were involved in this thesis signaled interest towards experimenting and piloting the proposed business models. Through further refining these business models, as well as renewing the interested companies, the results of this thesis can be used to create new forms of business. Although the initial interest was from small and medium sized enterprises, as well as startup incubators, these models can also be used by larger and more incumbent companies to rethink their business logic.

**TIIVISTELMÄ**

**Tekijä:** Oskari Lähdeaho

**Työn nimi:** Suomen ja Venäjän välisten kansainvälisten sopimusten ja lainsäädännöllisten muutosten mahdollistamat uudet liiketoimintamallit

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**Hakusanat:** Liiketoimintamalli, innovaatio, Suomi, Venäjä, lainsäädäntö, sopimus, teknologia, kansainvälinen, logistiikka, teollisuus

Tämän diplomityön tarkoituksena on tutkia uusia liiketoimintamalleja, jotka Suomen ja Venäjän välisten kansainvälisten sopimusten ja lainsäädännön muutokset mahdollistavat. Mainittujen muutosten pääpaino on näiden maiden, ja suuremmassa kuvassa EU:n ja IVY-maiden, välisessä tavaraliikenteessä. Lainsäädännöllisten ja sopimuksellisten muutosten lisäksi tutkittiin nykyaikaisten liiketoiminnan trendien, innovaatioiden ja teknologioiden vaikutusta liiketoimintamalleihin.

Tutkimus suoritettiin kvalitatiivista lähestymistapaa hyväksikäyttäen. Tutkimuksen kohteena ovat aiheen kannalta keskeiset, niin suomalaiset kuin venäläisetkin, yritykset ja asiantuntijat. Empiirinen tutkimus koostuu 10 haastattelusta Suomessa ja Venäjällä, sekä Etelä-Karjalaisille logistiikka- ja teollisuusyritykselle tehdystä kyselystä.

Tutkimuksen tuloksena syntyi kolme erilaista yleisen tason liiketoimintamallia, joita tutkittu teoria ja suoritettu tutkimus tukevat: läpinäkyvän kommunikaation mahdollistaviin teknologioihin perustuvat liiketoimintamallit, alustapohjaiset liiketoimintamallit ja innovatiiviseen, uusiin liiketoiminnan osa-alueiden alihankintaan perustuvat liiketoimintamallit. Nämä liiketoimintamallit hyväksikäyttävät muutoksia laissa ja sopimuksissa, sekä nousevia teknologioita ja innovaatioita. Esitellyt liiketoimintamallit on laadittu yleiselle, teollisuuden alan tasolle, minkä vuoksi niitä tulisi käyttää yritystason liiketoimintamallin luomisen apuna huomioon ottaen ainutlaatuisen yrityksen, toimi-alan ja liiketoiminnan muodon.

Osa tutkimuksessa mukana olleista yrityksistä osoitti kiinnostusta tuloksena syntyneiden liiketoimintamallien testaukselle ja pilotoinnille. Liiketoimintamallien jalostuksen sekä yritysten uudistuksen avulla tämän diplomityön tuloksia voidaan käyttää uuden liiketoiminnan luomiseen. Vaikkakin tutkimuksen aikana kiinnostusta osoittivat lähinnä pienet ja keskisuuret yritykset, sekä liiketoimintahautomot, näitä liiketoimintamalleja voidaan hyödyntää myös suurissa yrityksissä liiketoiminnan logiikan uudistamiseen.

**ACKNOWLEDGEMENTS**

Firstly, I would like to thank Stefan Mynttinen and the Regional Council of South Karelia for offering me this research topic as my master's thesis and for the help provided through the project. Additionally, I owe my gratitude to Jukka Niiranen from Arnora Oy, who guided me through the empirical primary data gathering involved to this research. Lastly, I would like to thank professor Olli-Pekka Hilmola for the invaluable guidance on the academic standards necessary for master's thesis. All three above-mentioned professionals deserve special recognition for their patience with the progress of this thesis.

I express my appreciation also to all the involved organizations, companies and experts who engaged into an open exchange with me regarding the topic of the thesis. To be honest, the amount and quality of the answers and discussions that I got to experience was surprising.

Lastly, I want to thank my family and friends for their unconditional support that was well needed during this journey.

Oskari Lähdeaho
14.3.2019 in Lappeenranta

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# 1. Introduction

Railway transport is convenient way to transport large quantities of freight with ease and in an ecological manner (in comparison to road transport). On the other hand, road transport offers higher mobility (Catrina, 2012). Road transport is also used to support other modes of transport. Environmental sustainability is emerging as a relevant topic in maritime traffic, mainly due to pressure of emission standards and stakeholder interests (Jasmi et al., 2018). This suggests that the modern transportation and logistics should aim to utilize different available modes of transport and external supply chain activities in order to achieve flexibility and competence. However, to reach the benefits of a loose supply chain, intermodularity and information sharing is required (Bretzke, 2009). To support establishment of supply chains involving multiple separate actors, modern technologies, such as Logistic Unified Information (Wei, 2011) and geographical information (Lin, 2011) jointly with Internet of Things solutions, should be utilized.

Business models are used to structure business, i.e., pool the resources and utilize them in a way that they will generate profit. (Amit & Zott, 2001). Modern business world is constantly changing, thus requiring the business models to evolve rapidly in order to continue as profitable (Zott & Amit, 2010). In addition, to capture the value of innovation, the business model should be built upon said innovation (Chesbrough & Rosenbloom, 2002). Business model involves three different levels that should be considered when constructing it: fundamental business philosophy, structure of the business operations and the business strategy (Morris et al., 2005). Although business model innovation is vital for prolonged success, many attempts end in failure (Geissdoerfer et al., 2018).

This leads to an approach where the international legislative and contractual environment of road and maritime, in addition to railway, transports are studied also. In addition, the role of new technology and innovation as well as growing trend of environmental consciousness in enabling and generating new business models is considered.

## 1.1 Background

The starting point and expressed need for this master's thesis is to study the new business models enabled by the changes in international legislative and contractual environment in Finnish-Russian trade. Officially, the trade between Finland and Russia (at that time the Union of Soviet Socialist Republic) started in 1948, when a contract concerning interconnection via railway was signed (SopS 1, 1948). After that, the legislations and contracts have been changing, mainly to allow gradually more trade to happen between these two countries. The latest changes, happening after 2010, are in sync with the changes in railway legislations within EU. These mentioned changes aim to liberate the competition on railways, as well as to stimulate international trade (European Commission, 2018a). Consequently, these changes may open up market for completely new business models, and this study aims to recognize, analyze and possibly offer methods to utilize these models.

Above mentioned legislative and contractual topics were spotted by the Regional Council of South Karelia, within a project called "Northern Growth Zone" that they are currently associated with. This project aims to generate and stimulate the business in the South Finland. Below, in Figure 1, the associated area is presented on a map. Simply stated, the Northern Growth Zone covers Southern parts of Finland from west coast to the border in the east. The area contains 51% share of population, 54% share of jobs, 58% share of produced GDP, as well as 61% share of research and development investments in Finland. Additionally, as one of the main focus points for this thesis is Finnish logistics industry, it is interesting remark that 73% of maritime cargo, 80% of maritime passengers, 94% of international air passengers and all of the international air cargo in Finland travel via the Northern Growth Zone area (City of Turku, 2018). The Council of South Karelia offered me, the author, to study the possibility of new business models enabled by changed legislations and contracts concerning South Finland as a part of the ongoing project. In addition, to the literature review, this thesis contains empirical study of companies operating in the southern parts of Finland and the possibilities to utilize new business models specifically in this area.

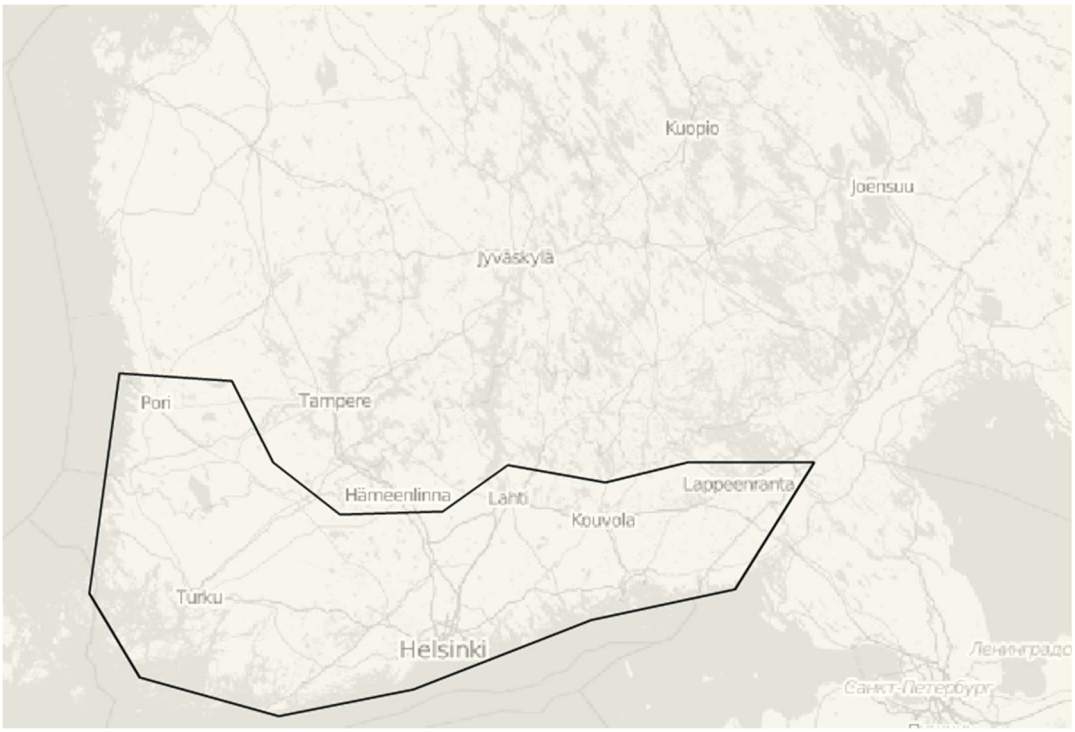


**Figure 1.** Area of Northern Growth Zone (OpenStreetMap, 2019)

## 1.2 Research gap

There exists already a number of studies concerning the macro-economic effects of the changes in the legislative and contractual environment between Finland and Russia. However, this study aims to elaborate on top of them and find new business models that are enabled by these aforementioned changes and can be actually realized in the given context of South Finland. As the study is limited to only recognizing, analyzing and evaluating new business models, the piloting and proving of their feasibility will have to be the objectives for the possible further studies on this topic.

## 1.3 Research questions

Three research questions have been formulated to structure the research and to transfer the proposed objectives and scope of study into clearly defined goals. In order to orientate the author, as well as to provide a cohesive text for the reader, the first research question this study aims to answer is:

**Q1. How is the business environment between Finland and Russia going to be affected by the legislative and contractual changes?**

The first research question is used as a basis for the study, which is then elaborated on. When the current situation in the legislative and contractual environment between Finland and Russia is clarified and evaluated, the fitting business models can be recognized. As there are numerous changes that have taken place recently, the perspective is also focused on the future potential effects of the said alterations. The main goal for this study is defined in the second research question, which is as follows:

**Q2. What kind of new business models are enabled by the change?**

When the business models, enabled by the changing legislative and contractual environment, have been recognized and assessed, the role of new technology, innovation and solutions in realizing these models can be examined. The third research question aims to create a bridge for the theory to meet the practice. It is necessary, since the desired outcome for this study is to find new business models, which can be realized in the actual business environment of South Finland. The third research question is:

**Q3. What is the role of innovation and technology in enabling these new business models?**

As explained, each of the above research questions come integrated with methodology to recognize and also to evaluate the topic and the results. This structure was chosen to create a path of incremental steps that will lead the research from the general theory level of internationalization to the level of business models and concepts and ultimately, to descend to the real world environment in hopes of finding something concrete and realizable there. As a disclaimer, the author wants to stress the fact that this particular research at hand requires relatively fast decisions in conducting the research, which could lead into the results not being applicable into the practical context of the real world. However, in this case the results can be used as a basis for further studies, to scope and conduct the direction and where it is not beneficial to be headed.

## 1.4 Scope of the research

Even though the premise for this research is to examine legislative and contractual environment between two countries, the main emphasis will be on Finnish business. Thankfully, it was possible to gain a few interviews and some primary data from representatives of Russian business and academia, to diversify the sources and to enhance the degree of validity of the study. However, the study concerns also other countries in addition to Finland and Russia, such as EU and CIS-countries. The results and assumptions will be generalized in a way that the EU will be represented by Finland and CIS will be represented by Russia. This bold generalization is done due to time constraints, as well as to create basis for more specific studies in the same topic.

Since the changes in legislations and contracts concern mostly transportation industry, that is the focus of the proposed business models, as well as the examined innovation and technology. The most relevant modes of transport for the new business models generated in the context of this research are road, railway and maritime (inland waterway traffic is also studied), thus other modes are left outside of the scope of this research. There are changes and opportunities also in the other modes of transport (for example aviation), but the impact of legislative and contractual changes between Finland and Russia are minor compared to the aforementioned three modes, which is why they are left out of this particular study.

The study of internationalization in this thesis is focused on business that originates from Finland and targets Russian market. As mentioned already, Russia will be used as representative of CIS-countries, and some of the results could be generalized to fit the other CIS-countries, of course when justified in a sound manner. China is also growing in desirability for Finnish companies to target for international business, but the country and the market will not be studied in-depth in this thesis.

## 1.5 Structure of the thesis

The structure of this thesis follows the flow of logic of the defined research questions by keeping the same sequence of the work. The thesis gradually descends from the theoretical level to the macro-economic level of Finland and Russia, and then to the industry and company level to assess the results of the empirical study. The theoretical part of the work

is relatively wide, but the aim is to narrow and focus the scope of the study during the process, ultimately providing concrete results for the reader that can be backed up and justified by the preceding parts of the study. The structure of this thesis is as follows:

1. Theories of internationalization
2. Market analysis
3. Review on the legislative and contractual environment between Finland and Russia
4. Methodology
5. Results of the interviews
6. Results of the survey
7. Recognized new business models and their evaluation
8. Discussion
9. Conclusions and further studies

The last part contains author's recommendations for further studies, based on the scope and limitations of this study, as well as the results from the empirical research. As the results of this study introduce potential new business models to be realized in South Finland, the further studies should include piloting of these models by companies. There has been already discussion with the representatives of the Regional Council of South Karelia about the possibility to pilot and experiment new business models with their help. The respondents of the semi-structured interview and the survey are also informed about these possibilities during the conduction of the research. It would be fruitful both academically and concerning South Karelian business environment to include piloting also to this thesis, but unfortunately it is not possible due to the resource constraints of this particular project.

## 2. Business model

Amit and Zott (2001) define business model as "the content, structure, and governance of transactions designed so as to create value through the exploitation of business opportunities". Moreover, in the context of business models, content stands for the set of activities performed in the business, structure explains how these activities are done and how the value is delivered to the customer, and governance defines who will perform these said activities. Chesbrough and Rosenbloom (2002) explain business model by dividing it into six main functions; the business model should define the value proposition, identify the relevant market segment, structure the internal value chain of the company, approximate the structure of costs as well as the potential profits, map the position of the company within the market and lastly to generate competitive strategy for the company based on the previous factors. Furthermore, Chesbrough and Rosenbloom (2002) simplify the business model to be a system that transforms technical inputs, such as technological characteristics or performance, into economical outputs, i.e., value or profit.

The role of business model in modern world can be seen as vital for any given company's performance. In fact, in a study conducted by Lai, Weill and Malone (2006) it was discovered that the business model can be contributed for success in more cases than, for example, talent, industry, low labor cost, or the level of information technology utilization within a company. As the philosophy of business, the revenue models, and the roles of partners and customers get growingly complex, it is vital for the businesses to recognize their business model in order to truly measure and follow their costs, productivity, and profits. The innovation concerning business models is rapidly developing, which means that the corresponding field of study is subject to constant evolution (Osterwalder & Pigneur, 2010).

Business model canvas is a visualization tool for presenting the main attributes of any business model. Often there is a challenge in conducting business that the business concept is hard to comprehend. The business model canvas tool will aid any organization to pinpoint main focuses in their business and make them intuitively understandable, without overly simplifying the important complexities unique to the business (Osterwalder & Pigneur, 2010). It consists of nine key aspects for conducting a business: Key partners, Key activities, Key resources, Value proposition, Customer relationships, Channels, Customer segments,

Cost structure, and Revenue streams. These factors indicate the different stakeholders for the business, the core product (as in goods, services or a combination of these two) generated by the business, resources and channels that are required to produce the proposed value, as well as what is the cost structure and where the revenue is coming from. Additionally, the business model canvas can help to clarify which activities take place within the company and which are carried out by external actors (Zott & Amit, 2010). In Figure 2 below, can be seen empty business model canvas with the key aspects presented as boxes where the company specific descriptions can be placed. Furthermore, Keane et al. (2018) structured the business model canvas to consist of four main business aspects: infrastructure management (Key Partners, Key Activities and Key resources), product (Value Proposition), customer interface (Customer Relationship, Channels and Customer Segments) and financial aspects (Cost Structure and Revenue Streams). This structure is used also below to define and explain the nine building blocks of the business model canvas.

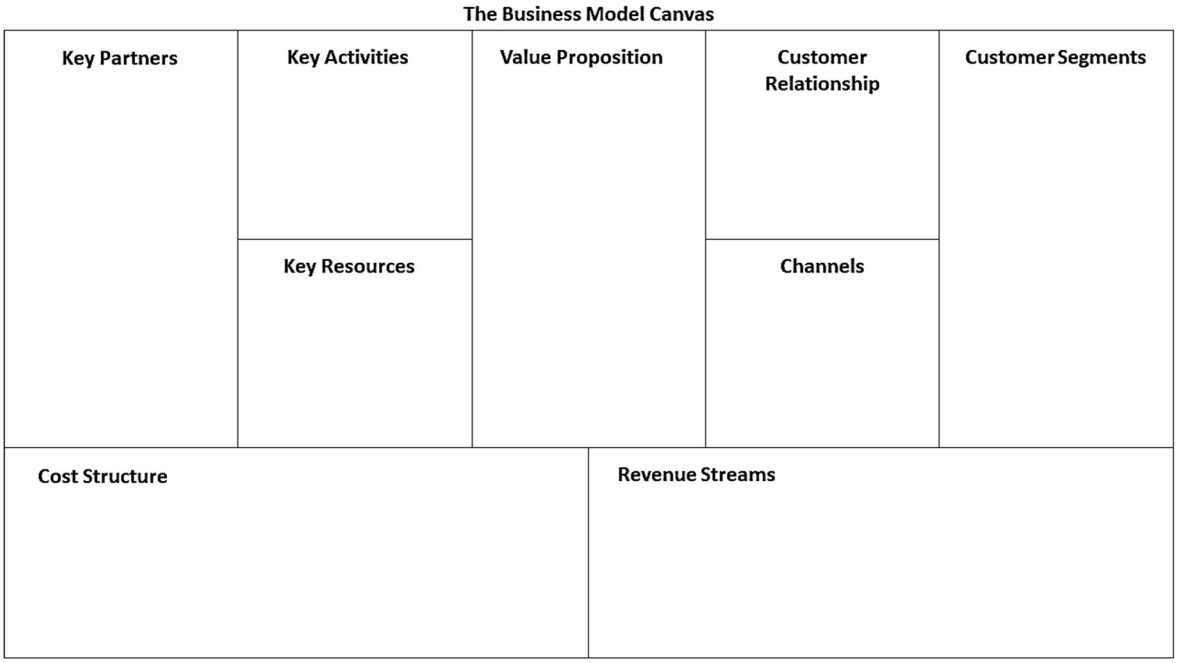


**Figure 2.** Empty business model canvas

Any modern business requires some kind of partners. Partners are organizations that enable the given form of business by engaging in collaboration with them. Collaboration can come in many forms, for example, supplying, leasing, and further processing, as well as strategic partnerships. It is important for businesses to recognize their key partners, in order to assess their own position in the market as well as how dependent they are from external actors.

Key activities create the core value that the business is offering. These activities are supporting the businesses value proposition, distribution channels, and customer relationships in order to ultimately create revenue streams. Osterwalder and Pigneur (2010) simplified the different key activities, that companies may practice, into three categories: Production, problem solving and networking. However, the company specific, unique key activities are not always clear for the companies, although it is vital for sustained business practice to recognize and put emphasis on them. For example, oil companies are actually providing energy and printer manufacturers are serving the need of document production, which have their own implications on how the business model should be structured.

The key activities of a business demand some sort of resources in order to be realized. The key resources could be either physical, intellectual, human, or financial (Osterwalder & Pigneur, 2010). Ultimately, these resources enable to produce the core value and furthermore the revenue stream for the business through key activities, which means that the acquisition and management of the key resources can decide whether the company is profitable or not. While physical and financial resources depend on management of the sources from where these resources are acquired, intellectual and human resources require strategic management of the knowledge within the organization. However, the latter mentioned resource types are also growingly available for outsourcing and licensing from external sources.

From customer's point of view, the value proposition of a company is the offering that they are getting from the company as well as differentiate them from other offerings. In the world of customer centric business and competition, the importance of value proposition for any business cannot be stressed enough. It is the starting point for designing any business to recognize the core customer, their need, how to deliver it, and what is the value delivered in comparison to competitors proposition. The value is directly dependent on the perception of the customer. For the customer, factors like accessibility, brand, customizability, performance, price, and ease of use could be the source of higher value compared to other offerings. (Osterwalder & Pigneur, 2010)

Generally, any business can be seen as a chain where the resources are refined inside the company into a product, which is delivered to customer. For this chain to work, the most important link and usually the hardest to manage is the connection to customer. Customer relationship should be established to meet the expectations of the different segments that the

business has recognized. In order to enhance the customer experience, thus developing the customer relationship, the company should engage in customer service activities, such as providing assistance, creating communities or involving the customer into the product development lifecycle process (Osterwalder & Pigneur, 2010). An equilibrium should be found, where the customers are served as close to the degree of their demands, but at the same time keeping the costs and the offered value in line with the other aspects of the business model.

Successful business needs efficient channels, through which the value proposition can be delivered to the customer. In addition to the delivery of the product or service to the customer, different channels are required for creating awareness of the company or advertising their offering, for enabling convenient transaction with the customer, and for delivering after sales support (Osterwalder & Pigneur, 2010). In this thesis, which focuses primarily to the logistics industry, the importance of channels as a competitive advantage in the business model is higher. While the logistics service providers have intense competition on the price, the actor with larger and more flexible network of delivery channels can guarantee higher quality for the customer.

Since the contemporary business practices can be seen as customer centric, it is vital for the companies striving for success to recognize their main customer segments. As stated by Osterwalder and Pigneur (2010), the customer segments can be divided into five different archetypes: mass market, niche market, segmented, diversified and multi-sided platforms. Mass-market approach addresses customer needs that can be generalized for a large audience, e.g., consumer electronic products that are highly similar to different demographics and customer types. In contrast, niche market approach aims to offer specialized, often premium product for a customer with a specific need. Segmented approach is suitable for businesses that aim to serve various types of customers, whose need differ from each other to a degree where it has to be regarded. Usually in the case of segmented target market, the offered core value meets the fundamental need of the customers, but the offering needs to be modified respectively to meet the varying nuances of the different segments. Example for this could be beauty products, which are different according to the demographic characteristics of the consumer. A more radical approach in comparison to segmented is the diversified approach. Businesses, who cultivate this approach, choose to target customer segments that differ vastly from each other. Businesses who can utilize

economies of scope can decide to use this approach, i.e., their core competences support business targeted to completely unrelated customer segments. Lastly, the multi-sided platform approach refers to a practice, where the platform owner acts as an intermediary between two or more different types of independent customer segments. The multi-sided platform acts as a mean for these customer segments to interact with each other, for example, to sell and purchase products.

Any feasible business should produce more revenue than the operating costs are, in order to be economically sustainable and profitable for the shareholders. Usually, companies have two strategic approaches for cost structure: either cost-driven or value-driven approach (Osterwalder & Pigneur, 2010). Companies that are pursuing cost efficiency implement high degree of standardization, efficient production, low margins in the price, and try to establish economies of scale. In contradiction, companies, that pursue differentiate with value driven approach, are willing to manage higher costs and ask for premium price in order to offer a more value in comparison to their competition. Higher value proposition can come from different factors, for example, higher quality of raw materials, customizability, or intimate customer relationship.

Lastly, any feasible business model needs sufficient revenue streams to continue operating. The revenue streams should be established with the overall business model in consideration. Revenue stream can be built upon two fundamental logics: based on single transactions with the customer or on recurring, subscription payments where the value or customer support is constantly delivered to the customer. Additionally, company must decide how they are pricing their product or service. There are also two general approaches for pricing: fixed, where the product price is tied to static variables, such as industry standard or characteristic of the customer, and dynamic, where the market condition fluctuations, e.g., supply and demand, define the price (Osterwalder & Pigneur, 2010). The decision must follow the overall philosophy that is present in the other parts of the model, for example, separate customer segments might prefer different payment methods or pricing.

# 3. Theory of internationalization

This part of the literature review focuses on various chosen theories of internationalization to support the study. Since the scope of this study is to examine business opportunities enabled by changed international legislations and contracts between Finland and Russia, general level theories were chosen to assess and examine the macro level business environments between these countries, as well as to create cohesion on the relevant industries for the aforementioned scope. These theories, accompanied with theoretical frameworks, are CAGE (for assessing 'distance' between the target markets), Uppsala model (to create general view on the internationalization mechanism of companies), Network approach and Born Global (to challenge the generalized view of Uppsala model and to explain how some of the more modern businesses internationalize their operations) and PESTEL (for evaluating the business environment of Russian market from Finnish company point of view).

## 3.1 CAGE model

As Ghemawat claimed in 2001, in the growingly interconnected and globalized world there are still distances that matter. The distance that is discussed here is not referring solely to geographic distances between different markets, but also cultural, administrative and economic differences between two separate markets. Ghemawat (2001) introduced the CAGE distance framework to analyze these aforementioned distances between different markets to explain why some initially promising foreign ventures were failing. The name CAGE represents the four dimensions, in which separate markets may differ: Cultural, Administrative, Geographic, and Economic distances. According to Ghemawat (2001), it is in any given company's best interest for successful expansion to initially target countries that are "nearby" to the country of origin based on this framework.

Cultural distance between markets can be attributed to different language, ethnicity, religion, or set of norms situated in the given markets. Administrative distance represents the difference of governmental modes, legislations, and practiced politics between the markets. Geographical distance does not only account for the physical distance between markets, but also the lack of common infrastructure and difference in climates. Finally, in addition to

differences in the disposable income of the consumers, economic distance is attributed by differences in the characteristics of the markets: financial, human, and natural resources, infrastructure, intermediate inputs, as well as knowledge within the market. (Ghemawat, 2001)

## 3.2 Uppsala model

Introduced already in 1977 by Vahlne and Johanson, Uppsala model is a tool for micro-level analysis on internationalization process of a company. After its initial introduction, it has been revised by the original authors in the years 2009, 2013 and most lately in 2017. Due to the fact that the model is already over 40 years old, it has received a fair share of criticism. In the aforementioned revisions of the model, the original authors have attempted to answer the criticism, to apply the model into changed empirical environment, and to transform the idea into a more generalizable form. (Vahlne & Johanson, 2017)

The first model was based on extensive research on internationalization practices of Swedish companies by the Uppsala University. The study was focusing on four large enterprises based in Sweden, who had expanded their operations to foreign countries: Sandvik, Atlas Copco, Facit, and Volvo. Main result of the research and basis of the created Uppsala model was that the internationalization process was similar in the four studied companies. Expansion to foreign countries happened in incremental steps, each with higher degree of commitment to the target market. The common pathway was to initially set up imports through a foreign sales agent. After that, the next step would be internalizing the import operation by establishing sales subsidiary to the target country. Final step, with most commitment to the foreign operation, was to establish production subsidiary into the target country. (Johanson & Vahlne, 1977)

The original results of the study concerning internationalization of the Swedish firms came accompanied with a more generalizable model, which reinforces the idea of process-like nature of the internationalization. The idea behind the model is that the process of internationalization is created by cycle of acquiring market knowledge, which leads into decision to commit more. Activities established after the commitment decision reinforce the market commitment, which in turn provides the company with increased knowledge of the

market. This cyclical model supports the systematic approach that the empirical study on the Swedish multinational enterprises revealed. (Johanson & Vahlne, 1977)

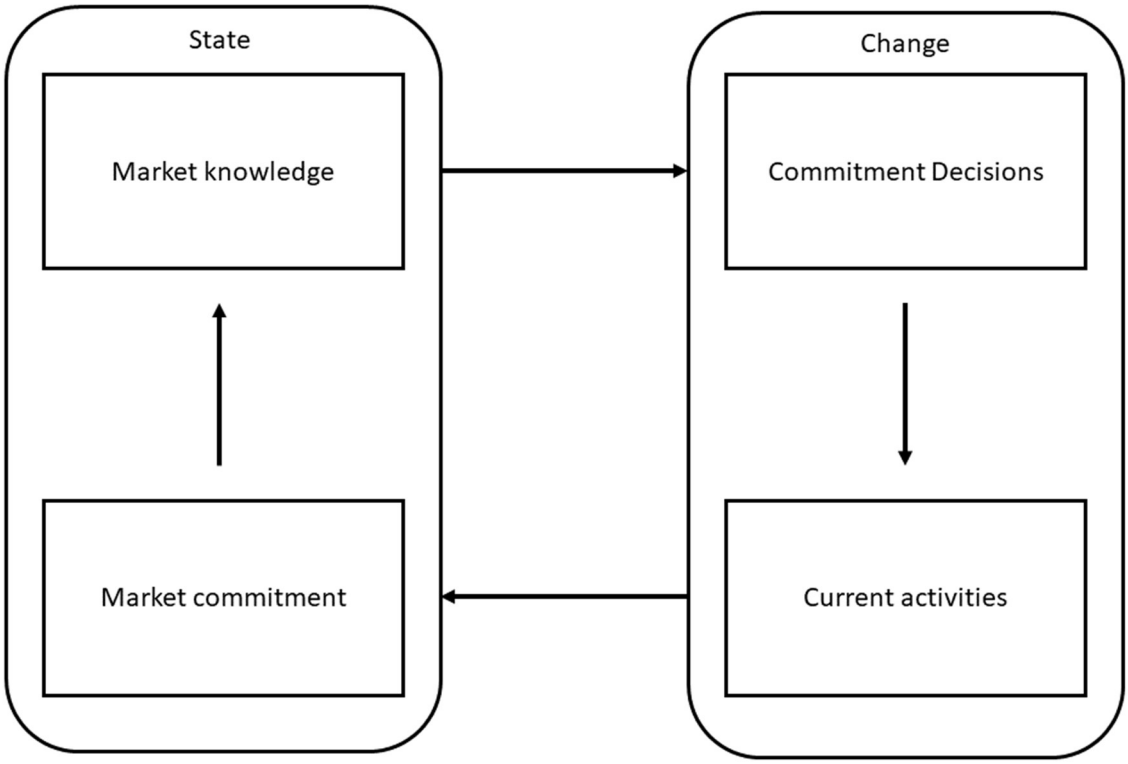


**Figure 3.** The internationalization mechanism (Johanson & Vahlne, 1977)

As mentioned, the Uppsala model has received extensive amount of criticism throughout the decades. The authors have made a recognizable effort to revise and update the model to strengthen its validity and generalizability. Some of the criticism fails to see the core philosophy of the proposed internationalization mechanism, which is presented in Figure 3. The model is not trying to claim that every company will or should take the same exact incremental steps while expanding abroad, but that the internationalization is a cyclical process rather than a one-time decision.

### 3.3 Network approach and Born Global

As opposed to the large companies and their internationalization behavior revealed by the studies surrounding Uppsala model, there are companies that have different motives and pathways to foreign expansion. Due to the servitization and growingly focused scope of businesses, there are more specialist organizations. These organizations specialize in one,

focused part of industry, for example, assembly, or they are offering a product for focused niche in the market. This means that there are fewer large companies who are capable and willing to execute all the necessary operations from the upstream to downstream actions internally. Because of this, some companies may choose or are forced to internationalize their business through their partner network. In addition, some companies establish themselves as global from the beginning. In most of these cases of rapid internationalization, internet based distribution channels and marketing act as the enabler for the business model.

Luostarinen and Gabrielsson (2006) carried out a survey in order to study their hypothesis about this new breed of companies that had come into existence: Born Global companies. As can be seen in Table 1, they divided companies within the scope of the study into different categories according to the structure of the income sources of the said companies. The degree of globalization stands for percentual income that is acquired from outside of the original continent of an examined company. For example, mature stage Born Global companies produce over half of their income from outside their original continent of operations. As Luostarinen and Gabrielson (2006) stated in their article, this is the harshest way to measure Born Global companies. Nevertheless, the "prime" group of Born Globals, who qualified to be classified into mature stage, were the biggest (24.7% of the focus group). The degree of internationalization stands for the share of income that is produced in foreign countries, but in the original continent of operations for the given company.

**Table 1.** Born Global companies classified by their level of maturity (Luostarinen & Gabrielsson, 2006)

| Stage of development | Degree of globalization / internationalization |
|---|---|
| Mature stage | >50% Degree of globalization |
| Growth stage | >25% Degree of globalization |
| Development stage | >50% Degree of internationalization |
| Starting stage | >25% Degree of internationalization |
| Early stage | <25% Degree of internationalization |
| Domestic stage | Revenue only from Finland |
| R&D stage | No revenue |

In their article on internationalization, Chetty and Holm (2000) review the article of Johanson and Mattsson (1988) on the same topic, to fit the theory into a real world example in New Zealand. Internationalisation and network model, introduced by Johanson and

Mattsson (1988), categorizes different companies into four segments based on the degree of the company's own internationalization as well as the level of internationalization of the corresponding market. The four categories are presented in Figure 4: the early starter, the late starter, the lonely international, and the international among others. The empirical study carried out in New Zealand, by Chetty and Holm (2000), reveals that it is possible for firms collaborate with their networks of other businesses in order to overcome their internal barriers and thus reaching higher degree of internationalization. Depending on their network position, firms can combine their resources and efforts with other companies in suitable network position to increase opportunities and capabilities in internationalization, and to increase the value they are able to create.

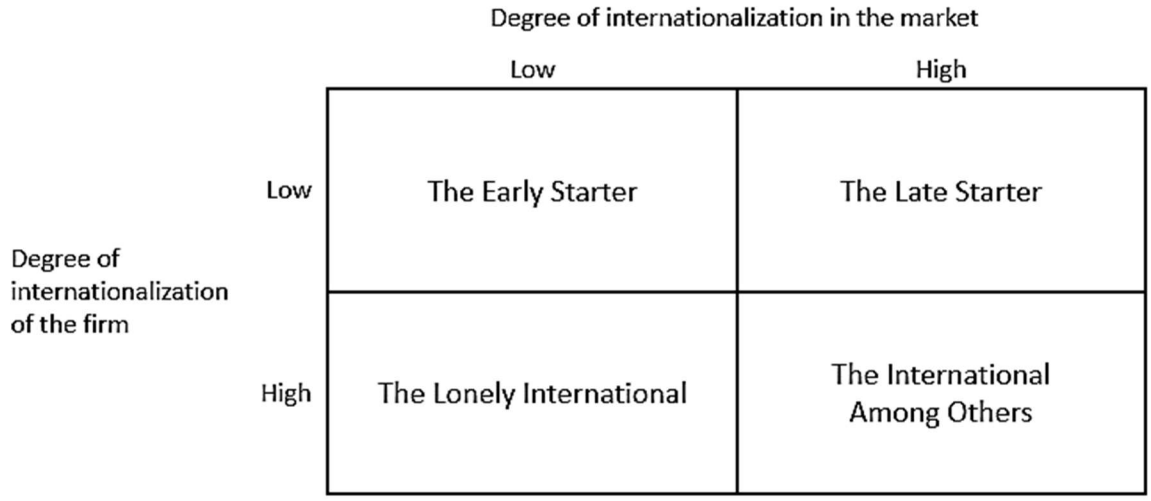


**Figure 4.** Network position matrix (Johanson and Mattsson, 1988)

Global business environment has been changing in a way that it has lowered the commitment threshold for internationalization, which enables new companies to internationalize in earlier stages of their development and with a faster pace. A new category of companies has been identified: Small and medium enterprises that do not follow the traditional model of incremental internationalization. These companies are called "born global", a term first coined in 1990's to describe Australian exporting firms that internationalized from the beginning or near it. There are few initiating factors that drive a firm to internationalize rapidly at the point of foundation: specialized knowledge, market knowledge, networks and alliances, intellectual property, supporting technologies, knowledge intensive products, high technology products, high value products, or high quality products. Various studies suggest that for a company to be successfully "born global" it requires entrepreneurial mindset,

marketing and differentiation, customer orientation, and careful emphasis on the strategy. (Knight & Liesch, 2015)

# 4. Analysis of the Russian market and comparison with the Finnish market

Although Finland and Russia are neighboring countries with constant interaction and long common history (Finland was even part of the Russian empire at one point in history), it is not a given fact that to conduct international business between these countries is an easy task. In fact, it is not very common for Finnish businesses, who are looking to internationalize, to consider Russia as one of their main targets. In this section, the CAGE distance framework is utilized to examine the situation between these two countries in order to shed light on the reasons why this seemingly intuitive direction for the internationalization process is not very popular among businesses. Below, in Table 2, is listed the key factors generating distance between separate markets, as well as assessment of what is the impact of each factor to the distance.

**Table 2.** Distance between Finland and Russia evaluated with CAGE framework

| CAGE | Finland | Russia | Distance between Finland and Russia |
|---|---|---|---|
| **Cultural** | Low hierarchy and power distance. Business customs and negotiations are straightforward. Personal bonds benefit business relations. | Hierarchy and power distance are important. Conducting business follows an etiquette. Personal bonds benefit business relations. | **Medium** - Lots of differences in culture, but common history. Some cultural similarities. Languages differ greatly. |
| **Administrative** | Follows EU regulations and political decision-making. | Own regulations and political decisions that differ from EU in many ways. | **High** - Differences in legislations. Border between EU and CIS-countries |
| **Geographic** | Well operating infrastructure for railway (compatible with Russia), road and maritime transport toward Russia. | Excellent railway and maritime infrastructure. Roads are less utilized in longer transportations. | **Low** - Neighboring countries with compatible infrastructure |
| **Economic** | High average salaries and disposable income. Price level also higher. | Lower average salaries and disposable income. Also, lower price levels. | **Medium** - Differences in disposable income. Different behaviors in spending. |

The cultures of Finland and Russia differ in many ways, regardless of the close geographical locations. This is one of the "gap" between the two countries, since it is difficult to establish business relationships when the approaches and etiquettes are different: an act with good intentions might seem offensive to the other party, and vice versa. Even though Finland and Russia have extensive history among each other, the cultures have evolved in different directions. Most obvious difference is the language, which between these two countries

differs significantly beginning from the used alphabet. In addition to language, the normal day-to-day interactions differ between these countries. While in Finland the interactions between people are usually very informal, even between, for example, a worker and a superior, in Russia interactions between people are expected to be carried out in a formal manner. This can be seen manifested as the longer power distance in Russian culture.

Not coincidentally, also the business practices, for example during negotiations, differ between these two cultures. In Finland the negotiations are usually heavily result based, and the discussion cuts to the point as soon as possible, whereas in Russia, it is expected to build a personal bond between the negotiators before discussing solely on the main points. Not to be forgotten, it is also beneficial for negotiations in Finland also to form some kind of bond between the parties, just the degree of importance is different. For example, the importance of a gift during the first meeting is much higher in Russia, than in Finland. Nevertheless, there are similarities in these two cultures, and it is possible to form channel of communication through mutual patience and respect. As a case example, the former project manager of VR, Ilkka Keränen, stated in an interview that negotiations between Finnish and Russian companies produce results easier than, for example, negotiations between Russians and South European countries, due to the cultural tendency of going straightly to the point (Tekniikka & Talous, 2007).

The difference of administrative environments between Finland and Russia can be observed to be relatively high. Already the fact that the countries are members of different trade and political unions, positions them in a contradictory setting from administrative point of view. Finland is a member country of EU, which implies that it follows political decision making mostly originating from central Europe, whereas Russia is the powerhouse of Commonwealth of Independent States and in position of power to impact to the decision making in that community. Due to this setting, these countries have profoundly different interests and agendas. The border between these countries is also a border between two free trade areas, which generates noticeable distance between these seemingly close markets.

As stated already the geographical distance is not great between Finland and Russia. However, already the geographical distances inside Russia are extremely high, when other cities in addition to St. Petersburg and Moscow are considered. Part of the assessment of geographical distance is to review the state of the transportation infrastructure in the

examined markets. The great distances have created and evolved an extensive and highly functional railway infrastructure network inside Russia. It is the main mode of transport for moving goods, as well as passengers. For the benefit of the lowered geographical distance between Finnish and Russian market, the railway infrastructure is interoperable, in Finland the common width of the rail is 1 524 millimeters compared to the 1 520 millimeters in Russia (SFS, 2017).

In addition to the compatible railway infrastructure, road and maritime transport are working well between Finland and Russia. Although the road infrastructure is not great within the Russia, the connection between Finland to St. Petersburg is in good condition even for industry use. The infrastructure required for maritime transport is also working, and it is being developed all the time with new routes and technologies. Due to these factors, the geographical distance between Finland and Russia can be assessed being low. (Korovyakovsky & Panova, 2011; Hilmola, 2011)

The economic distance between Finland and Russia can be observed to be significant due to the large differences in average salaries and disposable income of the people. Average salary in Finland in 2018 is approximately 3456 euros per month (Trading economics, 2018a), whereas the average salary in Russia is approximately 546 euros (41 140 rubles) per month (Trading economics, 2018b). In comparison, Russian people have considerably lower average incomes and in addition, the portion of disposable share after living and other costs is lower. While the price levels act according to these statistics, the low disposable income renders the Russian market less potential from the purely economic point of view. The lower disposable income and weakened course of Russian ruble compared to euro can be seen to have been caused due to the sanctions and counter-sanctions between European Union and Russia (Berg-Andersson & Kotilainen, 2016).

After reviewing of the different factors for the distance between Finnish and Russian markets, the overall distance appears to be medium to high. When there is this kind of distance between markets, it is not a straightforward task to internationalize from one market to the other. Companies, who are willing to do this, should plan their strategy according to the differences. Most probably, a successful business in one market will not be as successful in the other without adjusting. The result of the framework also correlate with the phenomenon of low internationalization willingness from these markets to each other.

# 5. Changes in legislative and contractual environment

In this chapter of the thesis, the legislative and contractual changes in the defined scope of the research will be examined. For clarity, the topics have been divided by the mode of transport they are (mainly) affecting: railway, road and maritime transport. In Table 3, the discussed changes in legislations and contracts and their immediate effects are listed.

**Table 3.** Changes in the legislative and contractual environment (concerning Finland)

| Change | Effect(s) |
|---|---|
| MARPOL convention and additions to the EU sulfur directive (2019) | Favors the usage of environmentally sustainable fuels. Inland waterway charges were halved in Finland for compensation, to balance with the predicted potential costs caused by the changes in sulfur regulations. In same fashion, railway tax was temporarily removed as compensation. |
| EU nitrogen directive (2018f) | After January 2021, maritime vehicles must have catalyst converters or use LNG as fuel. |
| EU overall greenhouse gas emission reduction target (2018g) | Effects to the use of traditional fossil fuels, emission trading and benefits for achieving lower emission levels than the defined target. |
| Liberalization of competition in transportation of goods on railways in Finland (European commission 2018c) | New entrants can enter the market of transportation of goods on railways. |
| Contract on transport of dangerous goods between Finland and Russia (2014) | Standardization and streamlining the international transportation of dangerous goods between these countries. |
| Liberalization of competition in international transportation of goods on railways from Finland to Russia (SopS 87, 2016) | New entrants may transport international cargo on railways to the Finnish-Russian border, as well as carry out arrangement work concerning the process |
| Interconnection agreement between Finland and Russia (SopS 87, 2016) | Standardized and detailed laws to clarify and streamline cross border railway traffic between these countries. |

## 5.1 Railway

The interconnection contract between Finland and Russia (Soviet Union at that time) was established in 1948. Later, in the year 1997, the contract was revisited, and it was agreed that transnational trains would be operated by VR (Valtion rautatiet) on the Finnish soil and by RZD (Rossijskije zeleznyje dorogi) on the Russian soil. Both of these actors would possess monopoly in their country of operations on the transports of the corresponding transnational

transports, however, they could not formally operate on the foreign railway markets. (Tervonen, 2015)

However, there has been historically cases, where a foreign company has been operating in Finnish or Russian soil. Freight One in Russia, and Karelian Trains in Finland, were established for similar reasons, to allow foreign railway operations in the respected countries. Although formally domestic companies, these two companies were initially owned in a virtual 50% split between Finnish and Russian entities. They were formed to enable necessary operations to support the international railway traffic between the two countries. For example, the Karelian Trains, operating in Finland, was formed in collaboration between the national railway companies VR and RZD (Tekniikka & talous, 2007). With the changed legislative and contractual environment, the importance of their former roles has been diminished, which has led to changes in their ownership models and focus of operations.

Due to changes in political and legislative (Finland had become a member country of the European Union), as well as in the business environments (Both Finland and Russia had separated national administrative and commercial railway transports) led to a new revision of the interconnection contract between the countries in 2005. The renewal negotiations concerning this contract continued until later half of the year 2013 and it became effective in 2016. (Tervonen, 2015)

As an action to unify the railroad network and practices of Europe, EU proposed series of procedures to improve safety, modularity and openness of the market. These activities were divided into four railway packages, introduced during the span from year 2001 to the year of 2016. (European Commission, 2018a)

Initially introduced in the July of the year 1998, the first package of directives for the railways inside European Union aimed to streamline the existing legislation to be more effective. When the package was adopted in 2001, all operators were allowed to the trans-European railway network without discrimination. At this time, the need for liberating the European railway markets and establishment of a regulatory body to have responsibility over this change was recognized. Actions, defined at this point and to be realized in the upcoming years, toward unified European railway included improving the distribution of railway paths,

revised tariff structure in accordance to the relevant costs, reduced delays in border crossing, and introduction of new criteria for quality. (European Commission, 2018b)

Proposed in the January of 2002, the second railway package of the European Commission was designed to continue the unification of the European railway area by improving the safety and interoperability, as well as opening the rail freight market inside EU for competition. This package came to effect in 2004, and the biggest substantial achievement was the liberation of the the freight market in the railways for competition by the January of 2007. As a side product, the second railway package also gave birth to the European Railway Agency, which is responsible on the safety and interoperability in the European railways. In addition to the European Railway Agency, corresponding Safety Authorities were established in each of the member countries. (European Commission, 2018c)

In the march of 2004, the third railway package was adopted by the European Commission. Continuing on the agenda of creating unified European railway area that is open for competition, this set of directives aims to open the market of international passenger services, including cabotage, for all the operators. In addition to the liberation of international passenger transportation for competition, the package introduced legislations that allow train drivers to work in all the member countries with the help of standardized European train operator license. Furthermore, the package introduced basic rights for the train passengers and minimum quality standards for the operators. (European Commission, 2018d)

The fourth, and latest one, railway package was introduced in 2016. It consists of six legislative texts to complete the shift towards a unified market in European railway services. The goal of all the four packages was to achieve Single European Railway Area (SERA) and to reinforce rail sector as a competitive alternative to other modes of transport. The six legislative texts introduced in the fourth railway package can be divided into technical and market “pillar”. The technical pillar aspires to raise the competitiveness of the railway transports in comparison to other modes of transport by reducing the costs and lifting the administrative burden on railway operations. The market pillar will complete the vision of single market for European rail services by finalizing the systematic liberation of railway markets to competition that started with the first railway package and forcing public tendering for the service contracts concerning railways. The open competition on railways

is seen to increase responsiveness to customer needs, quality of the services provided, and the cost effectiveness. (European Commission, 2018e)

It is important to notice that in 2007, all the railway transports within EU were opened for competition. A contract on the international railway traffic between Finland and Russia (SopS 87, 2016) was reached in the end of 2016, where the competition for the international transports on the Finnish soil were opened for competition, as per the legislation in EU. Furthermore, this contract is concerning direct transportation of passengers and goods, which means that the passengers or goods do not change the train, in which they are transported, at the border station.

In addition to adapting the international railway transportation contracts between Finland and Russia to the modern state of the political, legislative and business environment, the newest contract also strives to clarify the related rules and procedures. All of the border stations between Finland and Russia will be promoted to the international status, except for the Imatrankoski station. This means that they can be used in cross-border transportations also, along with Vainikkala, which earlier had the only international border station status. Vainikkala will still remain as the only border station qualified for passenger and dangerous goods transportation. (Ikonen, 2017)
As a measure to compensate the relief on waterway charge on transports in Finland, the railway tax was declared to be not in effect during the period of 2015-2018. While there is no direct impact from the relief on waterway charge to the railway operations, the combination with relief on railway tax will enhance the competitiveness of Finland as a transit country for the effective period. Additionally, the emerging competition on the Finnish railway transportation will be stimulated by the lower operating costs during the period of tax relief. (Tervonen, 2018)

On top of the aforementioned contracts on railway transportations, additional agreement concerning the transportation of dangerous goods has been concluded between Finland and Russia. According to the agreement (2013), dangerous goods are substances or products that may cause explosion, incineration, harm to technical devices or to the other load, death to human or animal, injury, poisoning, burn, radiation, disease, or environmental damage, while being transported, shipped or stored. The agreement has been created as a reference point on what are the responsibilities (of the sender, transporter, and receiver), who are the

administrative authorities in each country, and what are the procedures if an accident happens.

## 5.2 Maritime

The sulfur directive issued by EU came to effect in 2015, which was designed to be in harmony with the MARPOL convention. For EU member countries, this would mean actions to reduce sulfur, carbon dioxide, and nitrogen emissions at the Baltic Sea. The Finnish government decided to place relief on waterway charge for merchant seafaring on the period of 2013-2018 to compensate for the rising operating costs due to adaptation to the new emission directives. The amount of the waterway charge was effectively halved. (Tervonen, 2018)

Even though the Paris agreement does not regulate usage of environmentally harmful fuels, the International Maritime Organization (IMO) is placing regulations on international sea transport to achieve higher degree of environmental sustainability in maritime traffic to complement the global aspirations for lower emissions. IMO's plan can be seen as ambitious; the aim is to reduce CO2 emissions in international shipping by 40% by the year 2030 and furthermore by 70% by the year 2050 (in comparison to the CO2 levels of year 2008). Nitrogen emissions are planned to be reduced by 80% by regulations on ships that are built after January 2021 (IMO, 2018c; World Maritime News, 2016). In addition, the amount of greenhouse gasses (GHG) in international shipping are planned to peak as soon as possible and to be reduced by 50% by the year 2050 in comparison to GHG levels in 2008. The global sulfur level of used fuels should be no more than 0.5% concentration after the year 2020. Furthermore, in the Baltic and North Sea region the volume cannot exceed 0.1% sulfur concentration. The sulfur levels in maritime fuels will be supervised by the IMO representatives, and operating ships will be required to have systems in place to report the characteristics of oils that are being used. (IMO, 2018a, 2018b)

# 6. Methodology

In order to recognize the required boundaries to focus the scope of the research, theoretical studies for a few separate basic disciplines had to be conducted. Internationalization, business model, innovation and logistics theories are combined with the study on legislative and contractual environment and its changes in Finland and Russia. As the scope of the study appears to be extremely wide, all the mentioned topics had to be studied on a highly general level. A common ground between all the disciplines involved will act as the theoretical basis for this research.

As it is difficult to recognize or predict new emerging business models, a series of semi-structured interviews were made as a qualitative study. Qualitative approach was suitable for this, because there were few overall participants in the interviews and there was effectively only one chance to meet every interviewee. In addition, semi-structured interviews with experts and professionals of the transportation industry was chosen to familiarize the author with the current situation as well as the future prospects of the said industry in South Finland. The interviewees consisted of company representatives, professionals in Finnish state projects, as well as Russian experts of their national transportation industry. Seven out of the ten total interviews took place in Finland, whereas the remaining three were conducted in Russia. Additional detail on the semi-structured interviews is presented in Table 4. The semi-structured interviews took place in the summer and autumn of 2018. The scripts for the semi-structured interviews can be found in appendices III and IV.

**Table 4.** Semi-structured interviews overview

| Date of the interview | Interviewee organization and position | Interview length | Country of interview |
|---|---|---|---|
| 11.6.2018 | Congressman | 30 min | Finland (In person) |
| 12.6.2018 | Railway logistics operator, Manager of International Operations | 45 min | Finland (Online) |
| 26.6.2018 | Logistics operator, Key Account Manager | 45 min | Finland (Online) |
| 13.7.2018 | Logistics operator, Operative Director | 45 min | Finland (In person) |
| 18.7.2018 | Railway terminal operator, CEO | 30 min | Finland (In person) |
| 22.8.2018 | Innovation and business incubator, Expert | 1 h | Finland (In person) |
| 30.8.2018 | Municipal authority, Regional Development Director | 45 min | Finland (In person) |
| 4.9.2018 | University, Professor | 1 h | Russia (In person) |
| 4.9.2018 | University, Professor | 45 min | Russia (In person) |
| 11.11.2018 | Maritime terminal operator, Commercial Director | 30 min | Russia (Online) |

Based on the findings of these interviews, a more general level qualitative study was carried out in the form of web-based questionnaire (Appendix VI) for local companies in the area of South Karelia. The study was done in order to recognize trends for emerging, new and feasible business models, as well as to chart the attitudes of the companies, involved in the scope of the research, towards innovation and new technology. The questionnaire was divided into five sections about internationalization practices, legislative environment, partnerships and subcontracting, innovation and new business models. As an optional, but highly desired outcome defined in the initiation of this research, was piloting the new business models that might be found as a result of this study. Contact information for these companies was acquired from the business register gathered by the Statistics Finland and provided to the author by the Council of South Karelia. The register was filtered to create database of only companies with their core business in logistics (Finnish industrial classification 2-digit level codes 49-53) and in manufacturing industry (Finnish industrial classification 2-digit level codes 10-33). This method produced 1200 eligible companies that were chosen as target for the survey.

The survey, that was distributed to approximately 1200 of the local companies, was used also as a channel to communicate potential piloting organizations for the resulting new

business models. The companies, that were chosen as recipients for the survey, were actors of the South Karelian manufacturing and transportation industries. To enhance the response rate to this survey, physical cover letter with short description of the survey and a link was sent to the companies via mail (Appendix V). Easily writeable URL-address was chosen to mitigate problems with access, and only one complaint was given that the URL-address does not work (the URL-address that was used by the respondent contained a typing mistake). In addition to the invitation to participate into the survey, the letter contained information about a raffle for two gift cards worth 100 euros each valid in local South Karelian companies: underwear store AlexSandra and cleaning equipment store Etelä-Karjalan Siivoustukku. Unfortunately, the response rate was low, possibly due to the relatively complex topic, and thus difficult and long survey to answer. The physical cover letter reaped 14 answers (1.2%), and a follow up email to those companies who had public email address (approximately 500 companies) managed to grow the pool of answers into 26 (2.2% answer rate). One of the 26 answers had to be removed from the group of examined answers due to the neutral answering bias; all of the answers in the scalable multiple-choice questions were “I cannot say” and to the polar questions (yes or no) the answers were “no”. In addition, no open-ended questions were answered by this respondent. The survey was carried out during the autumn of 2018.

The pool of participants in the survey, differed significantly from the participants of the semi-structured interviews. The participants of the interviews were mostly dealing with railway transportation, and were representatives of medium to large organizations, whereas the participants for the survey were mostly working with road transportation and represented small to medium companies. Over half (53.8%) of the respondents were operating in the manufacturing industry. Other significant group of the respondents were companies who work in the transportation industry (42.3%). The rest of the sample group were companies working in forwarding, retail and industry maintenance fields. Furthermore, most of the respondents to the survey worked in a micro sized company, i.e., 10 or less people in the organization. The division in the survey was made more in detail to recognize companies that are possibly growing in the nearest future, so the micro-sized category was divided into companies with 1-3 people and 4-10 people. Companies with 1-3 people are less likely to rapidly grow in size, whereas companies with four or more people have crossed the threshold where recruiting new employees is not as dramatic for the structure of the business and the organization. All of the respondent companies were small enterprises (less than 50 people in the company), except one which had over 50 people (medium-sized enterprise).

The type of materials and goods that the sample group of companies are mainly handling consists mostly of wood and timber (15.4%), steel (7.7%), other miscellaneous raw materials of industries (30.8%), as well as different sorts of products and semi-finished products on pallets. In addition, the sample group contained companies that transport or handle passengers, foodstuff, alcohol, earth (earth moving) and small machinery. Unfortunately, there were no respondents from the pulp or paper industry, which are among the most relevant industries currently in Finland, and would have been interesting to examine in this thesis.

To reinforce the theoretical basis and the findings in the empirical study with semi-structured interviews and the survey, set of secondary data was acquired from relevant scientific and news articles. In addition, the data set that has been made available for public by the Finnish Border Guard was examined. This database contains information of all the border traffic starting from the year 2004, transport statistics starting from the year 2002, and transit traffic towards east going through Finland starting from the year 2011. The theoretical baseline (Internationalization, logistics, business model, innovation) is studied to understand general level trends and directions for business models, which are then refined with the gathered primary and secondary data in order to produce feasible proposals for new business models to be utilized in the target area of this research - South Finland.

# 7. Overview of the logistics and manufacturing industries in South Finland

This part of the thesis will introduce the reader to the results of the empirical parts of the research. Even though the caption states that the South Finland was studied, in order to support the study on internationalization of Finnish firms, a set of interviews were conducted in Saint Petersburg, Russia to acquire perspective from one of the target markets for internationalization. The main topics emerged in the first interviews carried out in Finland are presented below in Table 5. Similarly, the relevant topics from the second round of interviews in Russia are presented in later chapter in Table 6. The semi-structured interview phase is reviewed first and then the survey phase of the research. In the later parts of the thesis, these results are mixed to create a common view on the studied topics.

**Table 5.** Overview of emerged topics in the semi-strucutred interviews (Finland)

| Topic | Comments of the interviewees |
|---|---|
| Railway infrastructure in Finland | State level development is going on and there are future plans to continue it. |
| | Further development is needed. |
| | General disagreement on the focus points of development. |
| | Railway from Imatra to Svetogorsk could be utilized more; currently solely used for imports from Russia to Finland. |
| International railway logistics operations | Traffic of goods is growing; mostly from Russia to Finland (destination Finland and transit through Finland). |
| | Railway connection from Finland to China is experiencing challenges; more specifically, at the Russian-Kazakhstan border. |
| | Companies in Finland have internal operations in CIS-countries, Mongolia and China. |
| | CIS-countries, Mongolia and China are desirable targets for further direct investments. |
| | The Russian market has become more fragmented. Formerly Finnish logistics operators had few larger customers, whereas now the market consists of numerous smaller customers. |
| Competition of freight traffic on Finnish railways | The railway operating industry has demand for more actors in order to create larger and more flexible supply networks. |
| | Competing with the Finnish state owned railway operator (VR) is difficult; currently only few actors specialized in bulk material can realistically compete. |
| | Railway freight traffic competition needs stimulation in form of state initiatives. |
| | Currently potential competition could be generated in supporting operations for freight traffic (e.g., shunting). |
| | Demand for subcontractors. |
| Innovation in logistics | Company R&D is focusing on environmental sustainability. |
| | County level R&D activities focus on new industrial methods and models, smart services, as well as clean energy and environment. |
| | Blockchain technology could improve information, communications and tracking, as well as reduce costs significantly in logistics processes. Main point is to eliminate unnecessary slack within the processes. |

## 7.1 International railway traffic

Infrastructure for logistics operations is improving and being invested on in Finland, where the investments are both from governmental and private sources. The overall vision for Finnish logistics sector is to act as a high quality transit operator. One of the larger new projects for utilizing the Finnish logistics infrastructure, operators and technology is so called Corridor as a Service approach (Liikennelabra, 2018). Corridor as a Service means that Finland would be transformed into a modern logistic corridor between western and eastern countries, and the transit transportations through Finland would be offered as a service to foreign companies. In order to realize this vision of creating a logistic node that would connect EU and the western world with the eastern countries, new technologies that enable transparent data exchange and smart solutions must be cultivated into practice.

As few of the interviewees mentioned, there is a lot of dispute on where the focus of the Finnish-Russian logistics operations, that is the backbone of the physical goods trading, should be located. In the city of Kouvola, construction of a new railway terminal, that can handle one-kilometer long trains that are arriving from Russia and the eastern countries, is being started. The status quo of logistics operations would not change due to this. Kouvola has a fitting railway infrastructure already to handle the incoming and departing trains; however, the new terminal would greatly improve the efficiency of the current operations. For example, the goods that come via train to Finland and are headed onwards to west from HaminaKotka seaport are handled in Kouvola, due to the lack of sufficient railway infrastructure in Kotka.

However, not everyone is happy with the current focus on Kouvola. The city of Kotka is actually planning a “beach track” that would follow the shore of the Gulf of Finland from St. Petersburg to Kotka. The justification behind this plan is that it would create a more efficient way for the goods that are coming from or through Russia and continuing on from HaminaKotka seaport, to be transported. The city of Imatra could also be connected to the neighboring city, from the other side of the border, Svetogorsk. The railway infrastructure on the Russian side has been improved, but on the Finnish side is not sufficient for international transportation standards. As the situation is now, the goods are transported from Imatra to Kouvola (and further to the Vainikkala border station), in order to be then transported to Russia. For example, the aforementioned neighboring city with industrial

activity (for example, chemical and paper industry), Svetogorsk, could be more efficiently served through Imatra than Kouvola.

The interviewed companies, who had their own operations between CIS-countries, gave mixed feedback concerning the state of the affairs. Others praised that the trade is growing steadily, while others claimed that the once lively traffic had diminished to almost nonexistent. The Russian market has evidently evolved, from having big centralized buying organizations, to a fragmented market of smaller, independent actors. Moreover, China is generally seen as extremely potential target country, although the trade is not significant and growing slowly. Different logistics operators are experimenting with the railway connection possibilities from Finland to China, one of them being Nurminen Logistics (Nurminen Logistics, 2018). The biggest problem with Chinese operations is that there is currently no real haul back options when moving the trains back from China to Finland, which means that the way back is producing only costs. Another problem mentioned with China is that the border formalities, even between CIS-countries (for example, between Kazakhstan and Russia) are not streamlined and cause unexpected waiting times. In addition, the tracking and tracing of transportation is extremely difficult, after the goods cross the Finnish-Russian border.

Even though the competition on the Finnish railways has been practically completely liberated, other companies are hesitant to compete with the formerly monopoly positioned state owned railway company VR in transportation of goods. The interviewees claim that the initial investment is too high for SMEs, and that the market for transportation of goods on railway is at the moment too fluctuating, i.e., it is hard to consistently get trains full of goods in order that the operations would be cost efficient and profitable. It seems that only a few companies, who are serving the forest and paper industries transporting bulk material, can realistically compete on the railways. The same interviewees claim that the only way to stimulate competition on the railway traffic of goods is to establish an equipment leasing company for potential railway operators, which has actually been planned by the Finnish Ministry of Transport and Communications.

While the competition on transportation is not booming, many companies have started competing in the loading and arrangement work concerning railways. Companies have either internalized this work, in order not to be dependent on VR, or have found a niche in the

market to offer this kind of service to other companies. One of the interviewees complained, that sometimes the arrangement work was delivered even weeks late by VR, which affected negatively on their operations. After this, they invested to acquire their own railway engine, which they claimed to have helped to streamline their processes greatly.

As mentioned in the review of the railway industry of Finland, the international traffic of goods was done in a way, where only VR could transport the goods to the border zone, and from there the Russian operator would pick-up the freight and continue with it to Russia. Some of the interviewees were disappointed on how this process works, claiming that sometimes the most time for the whole transport went to the initial part of getting the goods from their site to the border. This means that there is recognizable need to be fulfilled for competitors. The problem for competing with VR in this service is that VR has unique position and communication channel with the Russian operators. Even if the transportation work would be done by competitor, they would have to rely on VR to communicate with Russian operators to make the "exchange" of freight in the border zone.

It is not necessary to compete directly with VR in order to operate on the Finnish railways. As multiple interviewees stated, all of the logistics chains nowadays require flexibility to their solutions. In this case, VR could also collaborate with some smaller subcontractors, to offer services that the organization of VR cannot handle efficiently, thus creating more value to the customer. This approach could also be utilized in the international transports to hurdle the already discussed barriers of entry to that business.

## 7.2 Innovation in the logistics industry

Cost efficiency has always been and still is the undisputed driving force for the development of the logistics industry. Currently, the surveys still show that the most important factor in satisfaction for a logistics service is the price. However, quality aspects such as timeliness, environmental sustainability and tracking are growing trends in the logistics industry (Arvis et al., 2018). There is a limit, how far it is possible to compete with price, and after that the companies must begin to compete with the value they can provide, i.e., provide more value to the customer with the same price. Together with emerging technologies and innovations, growing level of industry standards is formed: what was acceptable level of quality ten years ago might not be acceptable at all today.

Many of the interviewees mentioned, that the new innovations they are implementing, concern environmental sustainability. The company's vision might support the pursuit of higher degree in environmental sustainability, but of course, it is also cost efficient to try to use less materials or fuels and to produce less waste. In addition, there is also the regulations concerning environmental sustainability enforced by EU that were discussed earlier in this thesis. Furthermore, the customers are more environmentally conscious and demand products and services that have lower degree of environmental "guilt" attached to them.

The new innovations and technologies in the sphere of environmental sustainability, that the interviewees mentioned, consisted of less fuel consuming vehicles, cutting waste and using resources more efficiently as well as optimizing the utilization of the load space to ensure minimum environmental impact per unit transported. Multiple interviewees were also interested on the concept of a circular economy, but none had it yet implemented in their own business practices. The innovative incubators examined in the scope of this research also reported that there were successful pilots and even established networks for cross company circular economy practices.

A common hot topic between the interviewed logistics companies was the utilization of blockchain technology to enhance tracking, predictability and communication between separate actors in the same supply chain. Some perceived the proposed technology in negative way, either as essentially unnecessary addition to the business or as something that could jeopardize crucial information concerning their business. On the contrary, some interviewees saw potential in the technology, enabling more efficient practices or even completely new business models based on it. The blockchain technology was truly dividing opinions, but based on the results of the interviewees, it has at least potential to be piloted in order to record performance in a real world setting.

On a more general level, the innovation activities are mainly focusing on creating smarter and more effective methods and models in industries, enhancing the offered services and establishing cleaner energy as well as more environmentally sustainable technologies and practices. There exists initiatives to promote business model innovation, new technologies and entrepreneurial risk taking. The concrete activities to promote innovativeness include seminars about the relevant topics, workshops to experiment and create networks, trial

environments to test new ideas, methods and models, as well as piloting to find out feasibility of the more refined innovations.

### 7.3 A Russian perspective

Round of semi-structured interviews were carried out in St. Petersburg, Russia, to extend the perspective of this research to match the defined scope. As this thesis is based on the changing legislations and contracts between Finland and Russia, and the business models that could be enabled by the changes, it is beneficial for the integrity of the research to hear from the other party concerned with the proposed models and results. Although there was limited resources to carry out interviews in St. Petersburg, it was possible to meet with experts on the Russian logistics sector, and hear their thoughts on the changed business environment, and the utilization of new technologies and innovations in Russia. In addition to the perspective of Russian academic experts, it was possible to interview shortly an expert from commercial logistic company to further increase the understanding with points from a more pragmatic perspective. The main topics that emerged in the discussions are presented below in Table 6.

**Table 6.** Overview of emerged topics in the semi-strucutred interviews (Russia)

| Topic | Comments of the interviewees |
|---|---|
| Russian logistics industry | Although infrastructure is suboptimal (especially in central and eastern Russia) in comparison to some other countries, it is being developed actively. |
| | Northern Sea Route |
| | Russian railway corridor connecting western Russia and Far East acts as possible alternative to traditional sea routes. |
| | Containerization rate is lower compared to Europe. |
| | Fierce competition. |
| | Russian railways (RZD) is an important actor in the industry. |
| | Imports are decreasing and structure of exports is not changing. |
| | Political and economical instability and uncertainty. |
| | High development and growth potential. |
| | Usage of transit countries is planned to be reduced to rely more on local ports. |
| Innovation in logistics industry | Ongoing project of unifying separate actors in the cluster to common platform. |
| | Blockchain technology is being studied both in academic and business world. |
| | Environmental sustainability was not seen as topic of high importance. |

In general, the logistics industry in Russia was perceived to lag somewhat behind in comparison to respective industries in highly developed countries. In addition, the overall

state of infrastructure in logistics is seen as suboptimal, especially in central and eastern parts of Russia. Also, the intermodularity of the different modes of transport or containerization, was claimed to be of lower degree in Russia than, for example, in Europe, which could be explained by inspecting the most commonly transported items: raw materials and low level processed goods such as timber and plywood, metals, paper and pulp, chemicals as well as fertilizers that can be transported without intermodular container. In addition, the state authorities were perceived as a force that causes challenges for the logistics industry in Russia. Especially, the authorities that are enforcing customs and environmental protection were seen to be generating barriers for the development of the industry. The customs and border control were claimed to be developing into more effective and transparent direction, but the environmental authorities were perceived to be lagging behind in progress. As a note, the point of this thesis is not to comment on the actions of different authorities, but to examine the perceptions about the logistics industry and the related environment from the company point of view. Furthermore, the competition in logistics industry was described as fierce, which is usually the case in other countries also. Nonetheless, most of these factors were seen as potential for development and new business in the industry, rather than a weakness. The industry was said to be open for proven and working novel practices, but because of the presented constraints, it is difficult to effectively implement some of the more modern best practices from around the world.

The country is perceived as being dependent on the imports, while the structure of exports has not experienced changes in years. The concern about the effects of weakening currency (Russian ruble against United States dollar) and sluggish development of Russian economy was seen to have an impact on the import and export activities in Russia. The balance was perceived to be changing, if this trend persists, toward a dominantly exporting economy. Furthermore, concerns about the economic sanctions and counter sanctions between Russia and EU, as well as other western countries were voiced by the interviewees. The general takeaway from these discussed challenges, was that the environment of logistics industry in Russia is rather unpredictable, which has a negative effect on the investments directed there and thus the development of the industry. Additionally, even if there was willingness to invest, the tax on investments was perceived as relatively high, which was seen also to affect the development of the industry negatively. As discussed above, regardless of the presented challenges, the logistics industry was perceived to have high potential for growth and some of the interviewees estimated the growth to be somewhere around 10% annually for the next

5 to 7 years, if the business and economic environment of Russia is adjusted to support this growth. Currently the most important challenge for the logistics operators in Russia, according to the interviewees, is to reach the level of imports and exports from times before the economic sanctions.

The idea of dominance for railway within the domestic transportation in Russia was enforced due to the long distances and vast railway infrastructure network. The railway transportation was also in Russia once a monopoly under RZD, the governmental railway company. RZD is still operating and is the biggest actor, but there are also numerous other companies operating on the railways. RZD was perceived by the interviewees to have the typical problems of a company that is in the monopolistic position in the market: low effectiveness, not flexible on price and service level, incumbent or old-fashioned management, culture and hierarchy. The railway transportation corridor that connects western Russia with the central and far eastern parts was claimed to be an alternative for the traditional trade routes on sea connecting Asia and the western world. Although there is relatively low volumes compared to other connections, the international railway connection to Finland is perceived as a feasible opportunity for business. It is mainly a corridor to Europe, and although the prices are higher than for example through Baltic States, the quality of the transportation service is appreciated.

The maritime transportation was also discussed, as St. Petersburg and the surrounding areas have multiple harbors and the infrastructure is being developed all the time. There are also new routes for maritime transportation, that are tested and hoped to be established, e.g., in the Arctic Ocean. The Northern Sea Route, as it is called, is claimed to be an alternative to the more traditional trade routes connecting Asia with the western countries. The current direction of the development in Russia, concerning maritime transport, is unfortunate for Finland and other established transit countries, because the emphasis is on shifting the logistics chains to use local (Russian) ports instead of the currently used foreign ones in the neighboring countries.

Naturally, the road transportations support the other modes of transport within the supply chain. They are present in some way in most of the logistics chains. Contrary to Finland, where road transports are used for their flexibility, in Russia they are used less due to higher relative price (as compared to other modes of transport) and worse road infrastructure, thus

lower flexibility in their use. There is established transportation of goods on roads from Finland to St. Petersburg, and surrounding areas, as well as to Moscow, but transportations that go further require other modes of transportation also. These transportations usually contain high value goods, such as machinery, since the raw and low added value bulk goods are mostly transported with train between Finland and Russia.

The innovation focus in Russian logistics industry is centered in cost efficient technologies and practices, similarly to the generalized approach in the global logistics industry. The volumes are much higher and the utilization of the modes of transports differ in comparison to Finland, which leads to different interests for the companies. In addition, the infrastructure and legislative environments are different with varying implications and requirements. However, in Russia the digitalization is also growing trend, and the local logistics companies are gradually increasing their degree of digitalization. In some aspects, the environment is more favorable for new technologies, innovations and models compared to Finland. For example, there are digital platforms for deliveries directed towards consumers already largely used in practice. Also, an electronic toll collection system called Platon, has been implemented and it is required for all the road transport units operating in Russia. The system and its impact on the industry has its own implications, but generally speaking the system is working as designed: A more systematic and foolproof way to collect the set road tolls in the highways of Russia. From the company perspective, especially from minor companies' point of view, there has been challenges with profitability of operations due to this system (AJOT, 2017).

The commercial consensus on the most relevant innovations for the logistics industry was to establish an interface for the cluster to centralize all the procedures in one location. This would enable importers, exporters, shipping lines and ports to deal with customs and border control in, as the interviewees called it, "single window". There was said to exist a project for this kind of technology, implemented by the Russian authorities and supported by the society of related business stakeholders. However, the interviewees also expressed concerns about the schedule and completion of this project. These types of interfaces and platforms for the logistics industry have been tried before in other markets, but in many cases they have ended up amongst the other "standards that will unify the industry and related processes". The examined Russian industries can be observed to be in need of solutions to streamline the service providing in subcontracting processes and fragmentation of traditional

business processes, since the business environment in Russia can also be seen to be growing in the degree of servitization, i.e., the share of service providing in Russia's GDP is rising (Yakunina, 2014). In addition, the utilization of blockchain technology in the logistics industry's needs was seen as a potential innovation. In fact, the interviewees claimed that it is currently being actively researched and analyzed by the related business community of Russia.

The relevance of new technologies and innovations concerning environmental sustainability were also discussed with the interviewees. Although the interviewees expressed interest on personal level to these types of solutions, they claimed that on industry and cluster level, the companies are not keen to invest in these types of technologies and innovations. This was accompanied with discussion about the IMO's regulation on sulfur emissions in maritime traffic, which were said to have a significant impact on Russia. The market was said to have lack of high quality fuel producers, which was estimated to lead the maritime operators to rely on imports to acquire fitting fuels for the operations. The importing of fuels were expected to raise costs in maritime operations, negatively affecting the industry in Russia.

### 7.4 Review of the business environment of South Karelia

Most of the respondent companies report handling timber, steel or other raw materials, which can be interpreted to generalization that they are companies working in low value producing industry. For example, metal workers and sawmills can be classified to this category. For the sake of this research, it is an excellent sampling group, since their business is usually tightly associated with logistics of physical goods and import or export practices toward Russia. This means, that the basis of this thesis, the changed legislations and contracts between Finland and Russia, and also the desirable outcomes of this thesis, new business models, might be interesting and beneficial for them.

Exactly half of the respondent companies informed that they already have international practices. Approximately quarter (23.1%) of the companies in the sampling group reported that they focus solely on exporting from Finland. The rest of the companies that were involved in international business were either focusing on importing to Finland (11.5%), practicing both export and import (7.7%) or doing some other kind of international business (7.7%), e.g., intermediary business. The reported international activities were mainly

directed towards other EU countries (69.2%), which is not a surprising finding since the barriers for internationalization are lowest toward these markets. In addition to EU, significant amount of the respondents (38.5%) had established international operations toward Russia. Other reported target markets for international business included China and other far eastern countries, Nordic countries, as well as other CIS-countries in addition to Russia. As an unfortunate finding concerning this research and the potential of the resulting business models, none of the companies, that did not have any established international operations, were currently interested in expanding their international operations in any way.

## 7.5 Impact of the changed legislations to the South Karelian SMEs

Since most of the surveyed companies were not using railway transportation as an essential part of their operations, the responses indicated that the impact of railway related legislative changes were not significant for the business. The companies were asked to rate the effect of the liberalization of the competition on railway transportation (separately Finnish national traffic and the traffic towards Russia), temporary removal of railway tax and additionally the need for a railway equipment leasing company that is being planned by the Finnish Ministry of Transport and Communications. The impact of open competition on Finnish railways was mainly rated low or non-existent, except for 10.8% of the companies who rated it to be moderate or moderate high. The liberalization of the international railway traffic competition toward Russia was also mainly perceived as low or non-existent - only 7.6% rated it moderately high or high. Similar results were obtained for the perceived effect of the railway tax removal: most rated it low or non-existent; however, 10.8% rated it to be moderately high or high. The need for the equipment leasing company within the sample group was negligible - merely 3.8% rated it to be moderate, whereas all the other companies reported the need to be low or non-existent.

The sample group of the companies were also questioned about legislations that concern maritime transport, which are the earlier discussed EU directives on sulfur and nitrate emissions. Same phenomenon could be observed in this category as in the above discussed railway legislation changes: most of the companies reportedly are not affiliated with maritime transport, thus the impact of the legislative changes were mainly not perceived as significant. The effect of the sulfur directive was rated by the majority as low or non-existent, except for 11.4% of the respondents who rated the impact to be moderate or higher. The

effect of the nitrogen directive was rated lower - only 7.6% reported it to have moderate or moderately high impact, which could possibly be explained by the fact that the nitrate directive will come into effect in the year 2021.

As the majority of the surveyed companies reported road transport as a central part of their supply chain activities, the impact of the EU carbon dioxide directive was perceived more significant than the other legislations discussed previously in this chapter. While the results were still leaning towards low effect or no effect at all, 15.3% rated the impact moderate or moderately high and 7.7% rated it to be high.

The respondents were also given a chance to tell about other legislative changes that might have affected their business, in a form of open-ended question. Multiple answers were concerning the road transport, things such as the requirements for the transport equipment size and weight, the license for practicing transportation of goods as business, as well as other payments demanded by the Finnish Ministry of Transport and Communications. The sanctions and counter-sanctions on trade between Finland (EU) and Russia were mentioned by the respondents. Other business wise interesting legislative changes were also mentioned such as following: legislations on natural gas, decentralized energy production, mining industry and the liberalization of the taxi industry in Finland. Unfortunately, these mentioned legislative changes fall out of scope for this research.

## 7.6 Partnerships and subcontracting

Almost half (46.2%) of the respondent companies signaled their need for new subcontractors as their core business is expanding. Although most of the companies were micro sized and none of them can be considered as a large enterprise, servitization of the separate business processes could explain the phenomenon observed. In other words, the components of business that were formerly carried out internally within companies, are now growingly offered as a service by smaller companies that specialize in the respective component. However, the sample group was somewhat more interested (57.7% of the respondents) in offering subcontracting as a part of other company’s operations. This can be seen more directly in correlation with the sizes of the respondent companies.

In order to inspect the companies' mentality toward subcontracting in more detail, they were asked open ended questions on the perceived changes in subcontracting operations, as well as on their need or offering concerning new, innovative subcontracting services. The overall process of subcontracting was perceived as growingly difficult due to the increased requirements concerning certificates and inspections, as well as tightening price levels. However, at the same time the answers claimed that the industries are becoming more fragmented, where the components of the value chain are offered as subcontracting services. In addition, subcontracting was perceived as being practiced by growing amount of companies, and companies were said to even subcontract for each other, to support the given partner's core business with the offered specialization. Furthermore, the respondent companies were relatively discouraged to express their needs or offerings concerning new or innovative type of subcontracting. Few companies said that they are interested in offering these services and few stated their interested in acquiring the said services, but the consensus between these companies seemed to be that there are challenges with the prices and costs related to the subcontracting services.

### 7.7 Innovation and new technology and their diffusion

Using the conducted semi-structured interviews with relevant experts for this thesis as a reference point, as well as secondary data from scientific articles and various other sources such as newspaper articles and company press releases, number of relevant innovations and new technologies were chosen to be considered in the study. In the survey, companies were asked to rate their subjective interest towards said innovations and technologies, in order to pinpoint, which are the most relevant. Some of these innovations could be so groundbreaking, if successfully utilized in the industries, that they could enable or act as a central aspect of new business models. The mentioned innovations are following: blockchain technology, internet of things (IoT), artificial intelligence (AI), liquefied natural gas (LNG), sulfur emission cleaners, bio economy and renewable energy sources, as well as circular economy.

In the scope of this thesis, the cryptocurrency blockchain solutions are not considered. In addition to them, there are emerging solutions in transportation industry that are based on blockchain technology. For example, the Danish logistics company Maersk has a blockchain based ledger solution for their supply chain management needs, i.e., they are using their

partners as a trusted peers in the blockchain to track their shipments (Maersk, 2018). However, the solutions based on blockchain are still relatively scarce and non-pragmatic, and only a few have been successfully implemented as a part of business practices. This accompanied with the stage of diffusion towards this innovation (arguably only radical innovators and maybe a few early adapters have utilized this innovation) in South Karelia resulted in relatively low interest towards it: Only 3.8% of the sample group rated the interest as moderate, while the rest had low interest towards it or no interest at all.

Internet of things is not entirely a new concept. In fact, it was coined already in 1999 by Kevin Ashton in a presentation at Procter & Gamble concerning the role of RFID in supply chain (Ashton, 2009). Even though it is not a new concept, IoT and related solutions have recently gained more attention, and new ways to implement IoT to business are being developed. In contradiction to the above mentioned blockchain technologies, which are still in the early phases of their life cycles, IoT is already relatively accepted concept by the pragmatics in the business world. The companies, who responded to the survey, perceived IoT as somewhat interesting innovation: 15.4% of the respondents rated the interest toward IoT to be moderate, and furthermore 7.6% of the respondents stated that their interest is moderately high or high. In addition, 15.4% reported that they have already implemented or plan to implement IoT solutions to their business practices. The response rate could be lower than the actual share of IoT users, since the term and solutions that belong in the category of IoT might be unfamiliar for the selected sample group.

As the world and business is becoming growingly information and computing power oriented, the capabilities of machines are expected to improve as well. Currently AI solutions could enable machines to carry out mundane tasks that require just a little reasoning or human cognitive capacity. However, when AI applications develop, they could execute certain tasks more effectively and efficiently than humans could. That being said, AI still needs ecosystem and environment to support it, and the current situation in South Karelia is still quite not ready for it. Some of the respondent companies rated AI as relatively interesting solution: 19.2% rated their interest toward this innovation as moderate or moderately high. Interestingly, 15.4% of the sample group indicated that they are planning or have already implemented some sort of AI solution into their business.

The relevance of alternative fuel solutions in the current world should not be underestimated. Regulations, trends, as well as the willingness of the population demand solutions for fuels that have higher degree of sustainability than the currently used ones. LNG is one of the feasible solutions right now for businesses to utilize. It has been mostly implemented in to maritime transport as a fuel, but recently a Finnish road transport operator Vähälä in collaboration with Finnish energy company Gasum announced an investment on a tractor unit that uses LNG as its fuel (Cision, 2018). The tractor unit is claimed to be able to mitigate approximately 50 tons of carbon dioxide emissions annually. The surveyed companies did not signal any particular interest to LNG solutions either: 7.7% rated their interest to be moderate and 11.5% were moderately high or highly interested. Nonetheless, 3.8% of the sample group reported that they already use or plan to use LNG in their operations.

As discussed in the earlier parts of this thesis, regulations to mitigate emissions in maritime transport has been or will be implemented in the near future. One solution to reduce sulfur emissions from maritime transport is to install cleaners in the vessel that will clean the emission from sulfur with water and store the contaminated water into a container to be disposed of later. The interest toward this particular innovation was extremely low in terms of this research, but as a note, the companies who listed maritime transport as a core part of their supply chain, rated it to be highly interesting. Population of 10.8% of the sample group rated their interest towards this innovation as moderately high or high, and furthermore 7.7% of the group reported that they had implemented or plan to implement it as a part of their maritime transports.

Similarly to the few above mentioned innovations, also bio economy and extended use of renewable energy sources are an approach to conduct business with higher degree of environmental sustainability. The respondent companies were exceptionally interested in this topic, in comparison to any of the previous ones. The interest of 19.2% were moderate or moderately high and for 11.5% it was high. The interest could correlate with the ongoing trends in the cluster, and with the fact that renewable energy sources as a concept is easier to understand than some of the more detailed or technical innovations mentioned above. Almost a quarter (23.1%) of the sample group reported that they are using or plan to use bio economy and renewable energy resources in their business.

Lastly, the sample group was asked to rate their interest toward circular economy practices. Circular economy is an establish business environment of different actors, who try to utilize all of the resources within the cluster as efficiently as possible. For example, peers in a circular economy could exchange their waste or by-products to be used in the other companies' production. Continuing the trend of interest toward environmental innovations in the carried out survey, the circular economy was seen as the most interesting topic in the research by the respondent companies: 26.9% of the sample group indicated their interest toward circular economy to be moderate or moderately high and 11.5% rated it to be high. In addition, a significantly large share of the companies in terms of this particular study (42.3%) claimed that they have implemented or plan to implement circular economy practices into their business in some manner.

The results of the innovation section of the survey are presented below, in Table 5. The diffusion of circular economy seems to clearly be the most successful in the examined area, although the grading for interest and relevancy is below average (scale 1 to 5). To explain the relatively low grade, this particular innovation might divide opinions in the sample group: organizations who have not implemented circular economy activities could view it as irrelevant now, whereas those who have implemented it might have internalized it as a mundane part of the business and therefore perceive it as uninteresting. In addition, the sustainability seems to be relevant theme in the sample group, since the renewable energy sources and bio economy activities has been graded similarly and the diffusion is higher compared to the other studied innovations.

**Table 7.** Diffusion of relevant innovations in South Karelian SMEs

| **Innovation** | **Mean grade for interest (0-5)** | **Percentage of implementation or planned implementation (0-100%)** |
|---|---|---|
| Blockchain | 0.5 | 0 |
| IoT | 1.2 | 15.4% |
| AI | 1.2 | 15.4% |
| LNG | 0.9 | 3.8% |
| Sulfur emission cleaners | 0.6 | 7.7% |
| Renewable energy sources, bio economy | 1.9 | 23.1% |
| Circular economy | 2.1 | 42.3% |

As for the remaining innovations, they seem to be of less importance for the sample group. For Blockchain, IoT and AI this could be explained due to the relative novelty and immaturity of the applicable solutions in logistics and manufacturing industries. However, the companies should be on lookout for possible pragmatic applications based on these innovations, since they could offer noticeable competitive advantage or even disrupt the industry in a way that their implementation is a necessity to continue business. The LNG and sulfur emission cleaners might be perceived as unexciting for companies since they are currently mainly relevant for companies that practice maritime traffic. The share of this type of companies in the sample group was 15.4%.

### 7.8 Interest towards new business models

In same fashion as with the survey part concerning innovations, the surveyed companies were asked to rate the perceived validity, feasibility and interest towards few business models, that emerged from the semi-structured interview part of the empirical study, i.e., the experts in the semi-structured interviews expressed feasibility of the business models (or similar business models) described in the survey form. First proposed model based on real time tracking of material flows and communication between companies that would enable more efficient supply chains. These models could be based or enabled by new technologies, such as blockchain ledgers in transportation. Second proposed model was built around a multi-sided platform that would enable open and transparent share of information between partners concerning materials, customers and orders to create network of supply chain solutions that do not require extensive negotiations and contracts. The final model was concerning a more traditional contractor and subcontractor relationship, but in processes that have been carried out internally until current times. The need for this particular business was voiced by many of the interviewees, and it reflects the trend of servitization and separation of business into smaller, more specialized parts in the studied industry. These models, and other business models that emerged from the analysis of the results in the empirical study, will be discussed more in-depth in the later parts of this thesis. The purpose of this chapter is to present the results of the survey concerning the proposed models.

The first proposed model was not deemed as feasible or interesting: 3.8% of the companies rated the feasibility as high, while 11.5% rated it to be moderately feasible. The proposed model is difficult to comprehend, thus making it hard to implement into practice. No similar

business models have been implemented in the form as proposed in the survey. Traditional business requires a level of assurance and pragmatism, which could explain why this type of model was rated so low. On other hand, it could simply not be feasible in the examined industry, market or area.

Model that was presented in the survey as a second, received a slightly but not significantly better rating among the respondents. Similarly to the first, 3.8% of the sample group rated the feasibility of a multi sided platform based business model as high, whereas 14.4% rated the feasibility of the solution to be moderate or moderately high. Similar business models have been introduced in the B2C market, which makes them easier to comprehend and rate. In addition, many platforms have been introduced already to logistics industry in Finland, but none of them has been successfully established as industry standard. This could create some distrust toward a business model in the field of industry that is based on a platform.

The third and final proposed model was a more traditional approach with a new twist. As already mentioned, the subcontracting services and demand toward them was signaled by many of the interviewees in the phase of the semi-structured interviews in this research. Especially in the railway business where the competition is liberalized merely for few years, there could be demand for new type of subcontracting services that were formerly carried out internally by the state owned railway company. 19.2% of the sample group rated the feasibility of this type of business as moderate, 7.7% as moderately high, while 15.4% share rated it highly feasible. The higher feasibility rating for this model could be explained by the closeness of the model to standard industry practices, as well as the revealed demand for subcontracting in the previous parts of this very survey.

### 7.9 View on disruptive innovations and impactful changes in legislations

As a conclusion for the survey, the sample group was given a chance to answer in open-ended question about their view on the most impactful legislative changes and disruptive innovations in their respective field of industry. This was done to identify the impact of trends in innovation and the relevancy of globally hot topics as well as the effects of the national and international level legislation changes in the context of South Karelia and South Finland. Additionally, the answers could reveal points that were not initially recognized by

the author, the funding body of the research, or the interviewees in the previous phase of the study before the survey.

Most of the disruptive innovations according to the sample group were concerning energy production, fuels and renewable energy sources. New types of fuels, such as biogases electricity, for vehicles were deemed disruptive in the respondents' field, in order to reduce the usage of fossil fuels. Also novel techniques to produce energy, such as decentralized models, were mentioned in this section. As majority of the companies were operating in logistics field, unmanned vehicles were seen as potentially extremely disruptive for the industry. Furthermore, degree of globalization in processes and business was seen to be growing. In addition to these answers, many more were presented that fall out of the scope for this thesis, such as 3D-printing and environmentally sustainable building materials.

The impact of the legislative changes were perceived in similar way as the above discussed disruptive innovations - legislations based on energy, emissions and alternative fuels were deemed to have the most effect on the business. The regulations on traditional fuels were seen to increase the prices of transportation, which was claimed to not yet been fully noted in the sample group's respective fields. Also the legislative requirements for the vehicles in transportation industry are developing all the time, which was perceived to have impact on conducting business in the industry. Additionally, the general level of bureaucracy was reported to be rising in form of increasing requirements on certificates, licenses and permits in the respective fields of industry.

# 8. New business models

Based on the semi-structured interviews, as well as the conducted survey, multiple possible new business models were recognized. Additionally, secondary data sources such as scientific articles, newspaper articles and other sources were reviewed to recognize trends and possible emerging business model types. The scope of this thesis limits the examined models to only those that can be considered as new. In the given context, new business model stands for a model, that contains components, for example an enabling technology or a revenue stream logic, that have not yet been utilized widely in the real world business environment. Furthermore, in the scope of this research, business models that have not been utilized in South Finland will be considered as new and thus relevant results for the study.

Initially, from the semi-structured interview phase of this research, three distinct business models were identified. The interviewed experts of the logistics industry in South Finland named growing trends, emerging needs and potential new technologies in their respective field of expertise. Formulating these topics, as well as the answers that directly considered new business and new business models in the interviews, the initial potential new business models were identified. These identified models were later used in the survey phase of the research to initially test the models' feasibility and desirability to be utilized.

Business model canvas was used to in this section to illustrate the proposed business models. However, the canvases were used to show the benefits of these new models, in comparison to the respective former ones. This means that, in some cases, all the parts in the business model canvases were not filled. The purpose is not to create company specific strategy level canvases, but to illustrate what kind of changes and additions should be made to realize the potential of the proposed innovations in the business model thinking.

## 8.1 Business models based on blockchain technology

First of the recognized business models, and arguably the most interesting technology wise, was a model enabled by technologies that can be utilized to create real time tracking and efficient communication between separate actors in a common value chain. During the interviews conducted in this research, wildest estimations claimed that a business model that

is built on top of this kind of technology could reduce costs in terms of time, fuel and external services by up to 40%, depending on the size and industry. The transparent tracking mechanism can also dramatically reduce the costs related to the tracking inquiry, by diminishing the traditional steps required to complete it into a single step inquiry. For example, blockchain technology could enable creation of this type of business model and furthermore a scalable, trusted network of companies with similar principles in tracking and communication as well as in transparent share of information within the network to ensure efficiency and effectiveness. According to the interviews, these networks are not yet established in Finland, but lots of work is being done to develop the technology, as well as to spread knowledge and pitch it to suitable companies.

**Business model enabled by technologies that provide real time tracking and effective communication**

<table>
<tr>
<td rowspan="2">Key Partners<br>Members of the established network<br><br>Provider of the required technology</td>
<td>Key Activities</td>
<td rowspan="2">Value Proposition<br>Real time tracking of the supply chain<br><br>Effective communication between actors within a value chain<br><br>Mitigate idle work<br>Effective use of resources<br><br>Mitigate overlapping work</td>
<td>Customer Relationship<br>Real time tracking and effective communcation allows precise estimation for delivery times</td>
<td rowspan="2">Customer Segments</td>
</tr>
<tr>
<td>Key Resources<br>Enabling technology (e.g. Blockchain ledger)<br>Established network of companies</td>
<td>Channels<br>Scalable network that can be expanded when a newcomer is trusted by required amount of actors</td>
</tr>
<tr>
<td colspan="3">Cost Structure<br>Investment on the requried technology<br>Possible costs on joining the relevant network</td>
<td colspan="2">Revenue Streams<br>Efficiency of the tracking and estimations enable revenue model based on the completion of a work phase (item delivered to destination -> instant invoice/payment)</td>
</tr>
</table>

**Figure 5.** Business model canvas illustration on blockchain based model

To achieve the maximized benefit from blockchain and similar technologies would require the business model and logic behind it to be adjusted accordingly. The same phenomenon can be observed when computers or the Internet started to emerge as a required standard for any given company. In the case of blockchain ledgers, the business model should be designed in a way that it can enable the efficiency benefits, generated by the technology, to be exploited. Figure 5 shows an example how to modify the used business model to complement the novel technologies utilized in a company. For example, since the tracking of the movement of goods from one company to another is precise and cannot be

manipulated by either intent or human error, the invoicing system could be designed to request payment in real time when the transport is completed. These types of changes raise the degree of efficiency in the business as a whole on top of what the technology itself can offer and, without the modifications in the business model, the potential of new technologies could remain untapped thus making the investment to these said technologies unprofitable.

## 8.2 Platform based business models

When successful, a platform can disrupt industries dramatically: generating new type of business while completely diminishing other type of business. As can be seen from example cases like Uber, successfully implemented multi-sided platform can transform whole industries. In the example case of Uber, the bargaining power of traditional taxi service providers has been diminishing, efficiency and customer satisfaction in the taxi service generally has improved, and the platform has generated a new set of microentrepreneurs who offer taxi services directly via the platform.

The purpose of a platform based business model, in the context of this thesis, is to establish standardized meeting point for different companies to exchange information. It is similar to the previously discussed blockchain technology based network, but in this case, there exists an intermediary platform between the companies, that could be either government or private owned, under shared ownership of the involved companies or an open source development project. The discussion about the appropriate ownership model for this type of platform is not considered in this thesis, but it could be fitting for further studies in the case that platform based business models can be utilized widely in the industries in South Finland.

However, one of the constraints for utilization of a platform to unite different actors in a value chain is that there is already multitude of different platforms used in small, closed networks of companies. For example, usually larger companies require their subcontractors to adapt the same platform to manage the material and information flows in the process. As more of an anecdotal information from the interviews, usually when an industry-unifying platform is declared in order to reduce the multitude of the solutions, it will end up among the other solutions before it. In order to establish platform as an industry standard, which is the position the platform needs to ‘unify’ the industry, lots of work in marketing and communication is required. Additionally, as Gawer and Cusumano (2008) stated in their

article, there are two product strategies to approach “platform leadership”: Coring, which means that the platform is answering to a need that is not yet met, and “Tipping”, which means that the “platform war” is won due to generated market momentum (as discussed, essentially through marketing and communication). Tipping seems to be the strategy that is more suitable for the given context of this thesis.

As the platform based business model is essentially built upon a technology, the same principles associated with the previously discussed blockchain based business models hold true: the maximum potential offered by the technology can only be realized, if the utilizing company’s business model is modified accordingly to support the groundbreaking technology. In the case of multisided platform, three types of different actors in the platform emerge: providers who contact their customer through the platform, customers who contact their suppliers via the platform, and the owners of the platform who are responsible of the maintenance concerning the platform and eligible for the revenue streams created by the platform.

Business models, that are based on utilization of a multi-sided platform, are difficult to fit into traditional frameworks in a comprehensive way. That is the reason why in this section of the thesis, the platform based business model is presented in three separate parts (this method of dividing one business model into multiple canvases for further comprehension is adopted from the book by Osterwalder and Pigneur, 2010). By doing this, it is possible to examine the three different perspectives to identify the different key aspects for each type of actor involved in business that are enabled by platform utilization. Below is the illustrations for a business model canvas for each respective actor archetype: provider, customer and owner.

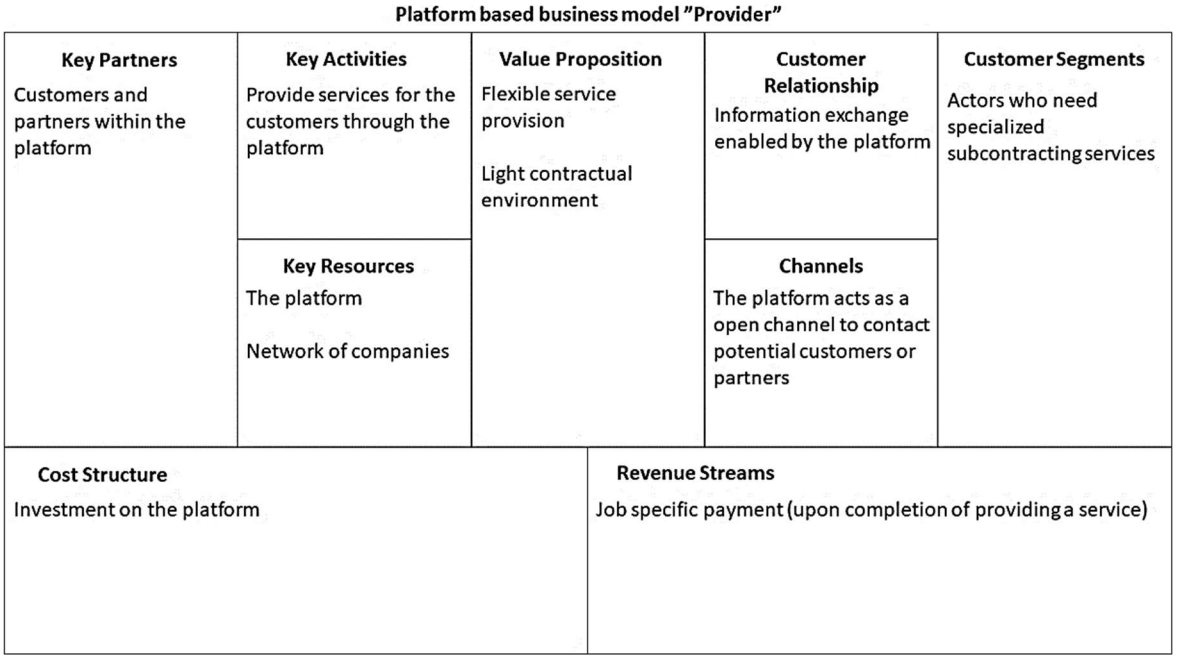


**Figure 6.** Business model canvas illustration on platform based business model (Provider point of view)

The provider point of view into platform based business is illustrated in Figure 6. The provider in this case is a stakeholder in a multi-sided platform, for whom the platform is a channel to reach their respective clientele. The core value, that the platform can deliver to a provider, is that potential customers can effectively communicate their specific need, to which the provider can react and offer their service. In addition to contacting the potential customers, platform can act as a way to offer subcontracting services without heavy licensing, certificate and contractual needs. It was one of the current barriers for service providing, identified by the SMEs of South Karelia that were surveyed during this research. This type of platform based solution could open a way for new entrants to markets, that were formerly impossible or behind strong barriers to enter. In addition to enabling market entry, platform could act as a channel for companies to gain visibility, which normally requires extensive work in marketing communications. Also, the service provider can utilize the platform for efficient invoicing, where the payment from the customer can be acquired for completed job or task specifically.

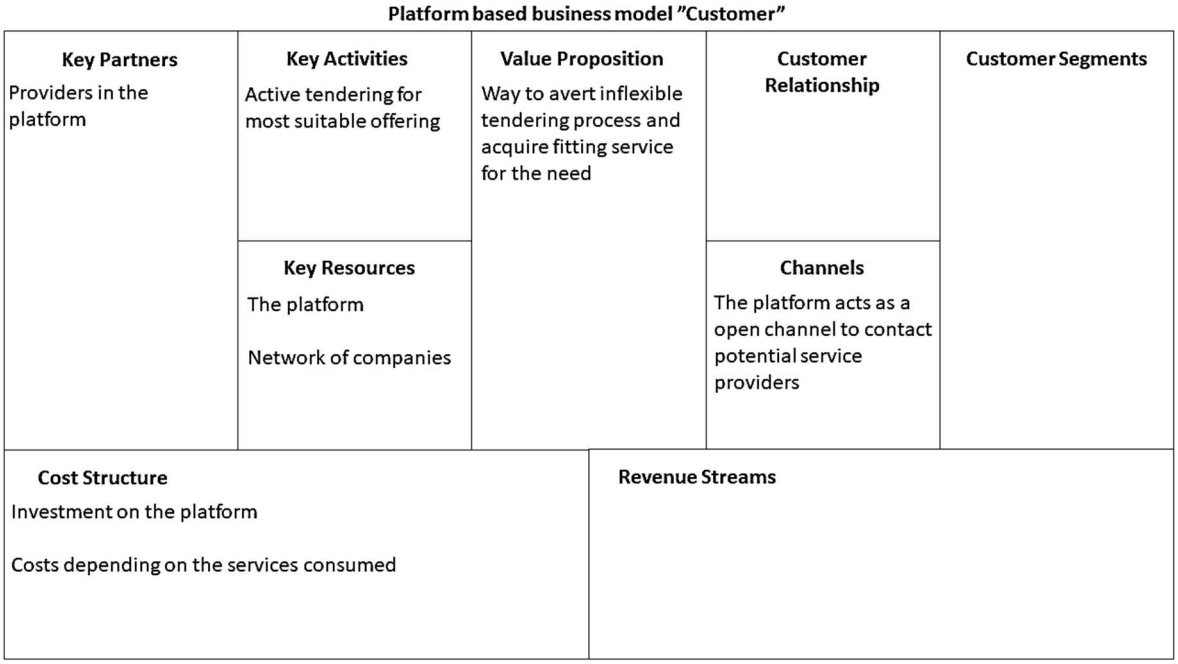


**Figure 7.** Business model canvas illustration on platform based business model (Customer point of view)

To understand the philosophy of a platform, it is important to also examine the customer side. In the Figure 7, business model canvas is used to illustrate the role of a customer in a platform. It is not a traditional or passive role, but instead the customer also actively creates value within the platform. Since the overall value of a platform is in the network that it creates, customers also contribute to it by communicating and making decisions in which service providers they choose to use. Arguably, the most important part in the value for the customer type of users in platform, is that they can practice tendering between different providers without extensive negotiation and contractual processes. In addition, this can be seen to shift the price levels closer to the optimum, mitigating some effects of traditional market imperfections.

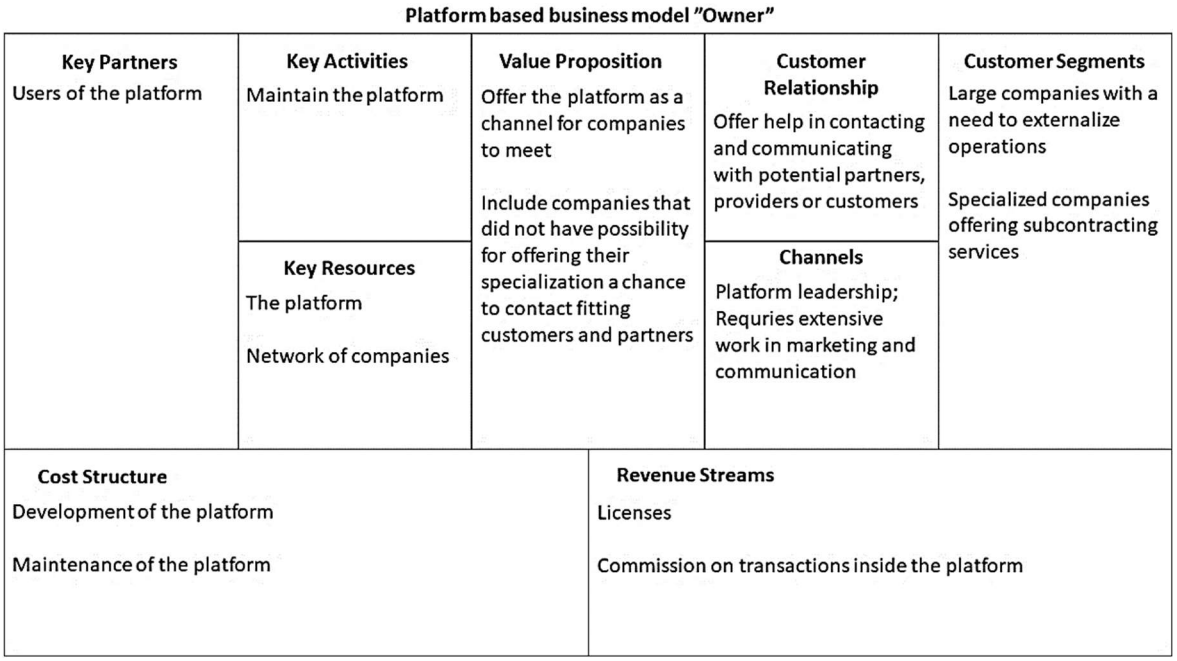


**Figure 8.** Business model canvas illustration on platform-based business model (Owner point of view)

The biggest difference with platform-based approach to the previously mentioned network enabled by blockchain or similar technologies is that there exists an intermediate entity. As shown in Figure 8, there is a third actor in multi-sided platform approach, the owner of the given platform. The different users act as the key customer segments for the owner of the platform. As mentioned already, the owner could be private, governmental or consortium of companies that wish to benefit from establishing and maintaining the platform. The role of the owner is burdening, since the risks related to the success of the platform are carried by the owner. However, if successful, the position of the owner will be hard to overcome due to high entry barriers for competing or substituting solutions. The platform leader will essentially be in a position, where majority of the transactions happening in their respective market will go through their system.

As already discussed shortly in the previous parts of this thesis, the Russian authorities are also planning to implement a platform to unify all the logistics processes into one location. The interviewees involved with the matter described that the platform is welcomed by the business society, but most were concerned that it will take further investments in terms of capital and time to implement into the pragmatic world of business. The same principles affect in this case also - for the platform to become the "leader" in the cluster, marketing and

communication in the direction of relevant stakeholders is vital to avoid creating obsolete solution among others.

## 8.3 Business models for innovative subcontracting

The effect of servitization can be seen as the traditional structure of business in the studied region (South Finland) is becoming growingly fragmented, i.e., the business process as a whole is separated and carried out by multiple specialized companies, working in common value chain to deliver maximum value to the end customer, while minimizing the related costs. Some of the respondents of the conducted survey even indicate that group of companies offer subcontracting for each other as peers, to avoid overlapping expertise and to utilize the specialization of the partner. While subcontracting in itself is not a new basis for business model, the new sections of business that are being subcontracted by fitting specialist company, will require a novel business model to fit with the operations. In other words, new operations require new logic behind the revenue creation, tolerated costs, provided core value and the factors supporting these key aspects.

Furthermore, the liberalization of transportation industries in the recent years, especially the railway transportation, enables changes for subcontractors to provide services that were formerly provided by the state owned company or had high entry barriers due regulations or required high initial investment. For example, new entrants on the railway transportation of goods could provide international railway transportation toward Russia as a service, while it was formerly regulated as only allowed to be practiced by the railway company of the state. During the empirical data gathering and analysis, it became evident that the services provided by the state owned companies are seen ineffective and the prices not flexible, due to the stagnated monopolistic position. Although the newly liberalized markets are not yet highly competed, time will show if the free competition will enhance the business processes into a more effective shape. Proposed business model for innovative subcontracting can be seen in Figure 9.

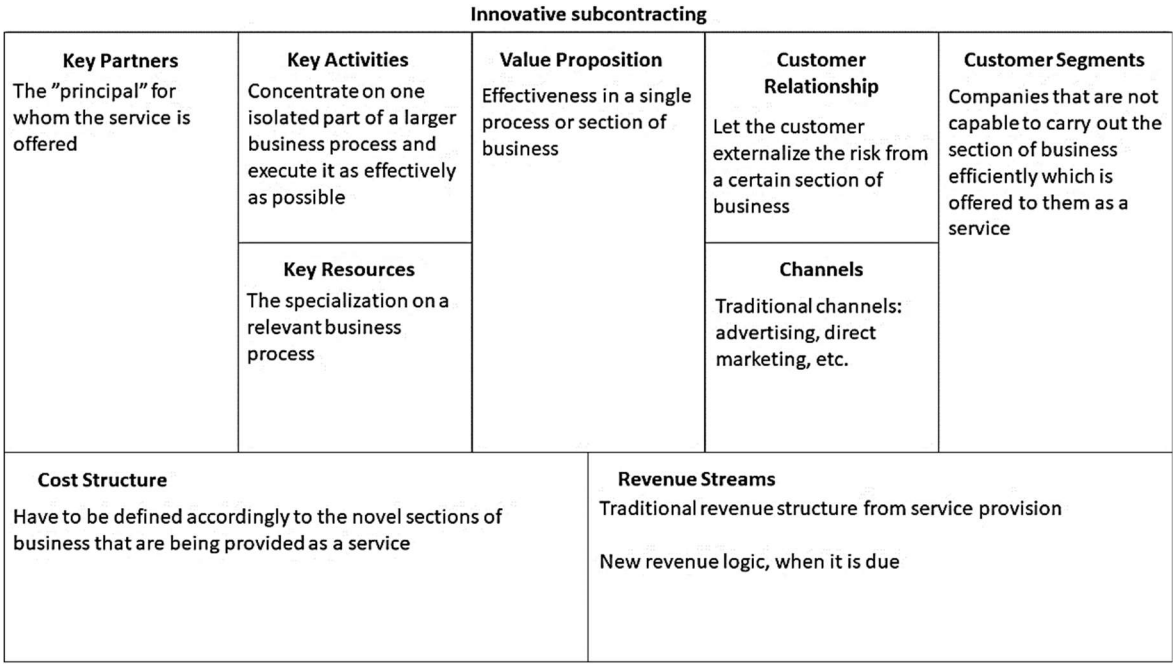


**Figure 9.** Business model canvas illustration on offering innovative subcontracting services

Although the fragmentation of traditional business is already happening with accelerating pace, the interviews and survey conducted during this thesis indicated clearly that the sample group perceived some of the general subcontracting needs within their respective industries untapped. New technologies and innovations could enable smaller, specialized organizations to carry out some of the formerly mainly internally executed processes more efficiently. For example, according to one of the interviewees, it could be more cost efficient and convenient to include smaller subcontractors within the supply chain to deliver goods in more flexible manner, instead of trying to force internal chain to fit in some of the more demanding customer needs. According to them, this is solution oriented thinking beyond merely selling a service.

# 9. Discussion

Although the initial research on the changed legislative and contractual environment between Finland and Russia concerning traffic of goods can be seen as a vast untapped market niche for new business, upon closer examination the emerged market and its exploitation is not a matter of straightforward expansion for the relevant companies. In addition to the possibility for new business, the feasibility of this market has to be closely evaluated. As observed during this research, most of the studied companies desire to expand their business to exploit the new possibilities opened by the discussed legislative and contractual changes, but are hesitant due to the entry barriers, uncertainty or lack of resources.

In the first parts of this thesis, theoretical internationalization mechanisms and approaches were discussed. The internationalization mechanism (Vahlne & Johanson, 2017) suggests that once the companies engage in international business activities, a self-feeding cyclical process will ensue, that inevitably results on higher degree of commitment into foreign markets for any given company. However, the study on companies in South Finland revealed that in some cases this theoretical mechanism is working backwards; companies are reducing their presence in foreign markets. It can be speculated, that the enabling changes in the business environment between Finland and Russia are relatively new and growth in the liberated areas of business could be observed in the upcoming years.

The network approach theory by Johanson and Mattsson (1988) can be observed manifesting in the practical world when examining the companies of South Finland. Especially in the logistics field, the companies' main value offering for their customer is the network of companies and modes of transport they can utilize to deliver the service for their customer. For many logistics providers in Finland this requires collaboration with Russian partners to establish the solution demanded by the end customer. While the commitment to internal operations of Finnish logistics companies in Russia has decreased, it could be rising back in the nearest future due to the liberalization of formerly state monopolies as well as the emerging railway traffic between Europe and China.

In the studied field of manufacturing and logistics industries in South Finland, the share of true Born Global (as defined by Luostarinen and Gabrielsson, 2006) companies was nonexistent. Since the companies examined were solely involved in the handling of physical goods (mainly traditional goods, e.g., low added value metal and wood products) it is no surprise that the internationalization practices consisted mostly of traditional approaches. However, if the new corridors to countries, such as China, can be successfully established, it could serve as platform for Born Global companies with niche products to enter distant markets more efficiently than before. As came up in the discussion with some of the interviewees during the research, companies that offer food products that are scarce in the Asian market, have been experimenting with the new railway connection from Finland to China. These types of cases could pave a path for a new breed of companies to capitalize on the changed legislations between Finland and Russia, accompanied with innovative technologies and business models.

One of the main factors contributing to the peculiarity of the international business environment between Finland and Russia is the distance between these countries. Even though these countries are neighboring each other, i.e., the geographical distance can be seen as short, administratively as well as economically and culturally these markets can be observed to be relatively distant. Some factors, such as the sanctions and counter sanctions between European Union and Russia, can be seen to further widen the distance between Finland and Russia, whereas factors, such as the legislative and contractual changes discussed in this thesis can be seen to narrowing the said gap. The interviews on both sides of the border and the conducted survey signal a promising future for trade between these countries despite the currently stagnated business situation; most of the results seem to indicate the companies' willingness to conduct international business between Finland and Russia. The key is to generate profitable ways for companies to realize business potential in the discussed emerged areas.

As discussed in all the examined previous studies on business models by Amit and Zott (2001;2010), Chesbrough and Rosenbloom (2002), Lai et al. (2006), Osterwalder and Pigneur (2010), as well as Keane et al. (2018), the rapid development of business model theory and its implementation to real world practices is challenging for the companies, but at the same time vital for staying relevant in the evolving markets. By studying the status quo and emerging trends in the focus area of this study, the three discussed business models

were proposed. These business models were based on the conducted interviews and theoretical basis of this thesis, then refined with the conducted survey as well as sources of secondary data, such as scientific articles.

The reception for these proposed general level business models was relatively enthusiastic. Numerous companies were interested in piloting these business models, and multiple companies were also open to new technologies that could disrupt the existing traditional markets and business models. The willingness to innovate in South Karelia was revealed in one of the interviews, where it was revealed that circular economy practices have been already experimented with in the respective area. This was accompanied with the survey results, which indicated that some of the respondent companies are already involved in circular economy schemes. If these innovations can reach certain diffusion within the smaller scale focused markets, perhaps in the future they could also be established to support international business.

# 10. Conclusions

The purpose of this thesis was to study the changed legislative and contractual environment between Finland and Russia to recognize emerging new business models enabled by the said changes. Moreover, the resulting business models should be new to the focused business environment and tied to utilizing innovations and new technology. In addition to these parameters, the resulting business models should above all be realizable in the context of Northern Growth Zone project.

The results were generated by studying the current business environment in South Karelia and surrounding areas. After this, relevant experts were interviewed to construct enlightened view on the possible future scenarios in the given business environment. The results were then refined with views from the companies in South Karelia, to test if there is any feasibility to them, according to the pragmatic actors of the examined area. While at first the future was seen as not favorable for innovation and new business models, deeper discussion and involvement of multitude of relevant companies revealed that there is demand for changes in the structure of the business practices in South Karelia. For example, the fragmentation of formerly internal practices into new forms of subcontracting and the need for new offerings to fulfill these needs were recognized. This trend is supports the claims about effective loose supply chains made by Bretzke (2009), where networks of companies aim to increase competitiveness through externalizing sections of business to avert negative effects of incumbency. These results could also be generalized to certain degree in the South Finland, since the larger scale manufacturing and logistics companies, located in South Karelia, usually operate in capital area and largest cities of South Finland.

General level business models, that were generated in this thesis, are mainly directed to be utilized by innovative, flexible SME's. They are also designed to allow companies to utilize novel technologies and innovations by being structured around them (Chesbrough & Rosenbloom, 2002). Technologies, such as IoT for the logistics companies (Wei, 2011; Lin, 2011) were seen desirable and even implemented already to business practices. In addition, environmental sustainability was addressed already by many of the studied companies. As discussed by Jasmi et al. (2018), the companies explained this by growing stakeholder awareness and legislations concerning emissions.

The utilization of these business models is not restricted only for the smaller scale companies, but large enterprises could implement parts of the results to modernize their business models or parts of the business logic in attempt to stay relevant in their respective field (Zott & Amit, 2010). Moreover, these models are first and foremost intended for businesses situated in the Northern Growth Zone, to stimulate innovative business in the said area. As discussed, the proposed business models are general level and do not delve on the specific company level, since the scope of this research was defined relatively wide to concern an area of multiple markets and industries. They are intended as guidance for companies to modernize the structure of their unique business models.

This thesis and the research involved had its constraints. In addition to time and resource limitations for the author and the involved companies, the scope of international and innovation activities of companies in particular area exceeds the capabilities to which a single study can produce results. This led the results to be general level, and the examined industries to be limited in the logistics and manufacturing industries, which were seen to be affected most by the premise of this thesis, changed legislation between Finland and Russia.

Piloting and further refining of the proposed business models to represent industry and company level models could serve as further studies for this thesis. As mentioned in the beginning of this thesis, the desired result for this research was to also pilot the proposed business models with real companies in South Karelia. Luckily, multiple companies that were involved in this research, signaled interest to pilot the business models and technologies discussed in this thesis. Hopefully the buzz that was generated during this thesis can be realized to generate profitable business as well as develop academic understanding on how companies in Finland internationalize and adapt innovations.

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# Appendices

Appendix I. Email template for approaching Finnish interviewees

Hei,

Otan teihin yhteyttä sähköpostitse sopiakseni tapaamisesta kanssanne liittyen Etelä-Karjalan Liitolle tehtävään selvitystyöhön. Tavoitteena on kartoittaa uusia liiketoimintamalleja, jotka voisivat poikia yrityksiä ja työpaikkoja Etelä-Suomen alueelle. Tutkimuksen kohdealueena on pohjoinen kasvuvyöhyke, joka käsittää Etelä-Suomen alueen aina Satakunnasta Etelä-Karjalaan.

Olen maisterivaiheen opiskelija Lappeenrannan Teknillisessä Yliopistossa (LUT) ja teen diplomityötäni, jonka aiheena on Suomen ja Venäjän välisten kansainvälisten sopimusten ja lainsäädännön muutosten mahdollistamat uudet liiketoimintamallit, Etelä-Karjalan Liitolle. Tapaamisessa tullaan esittämään avoimia kysymyksiä 1) liiketoiminnastanne yleisesti, 2) Suomen ja Venäjän välisten sopimusten muutosten vaikutuksista liiketoimintaanne sekä 3) teknologian ja innovaation roolista liiketoiminnan mahdollistajana. Varataan näiden aiheiden käsittelemiseen noin 45 minuuttia.

Työn ohjaajina toimivat Prof. Olli-Pekka Hilmola, LUT, Senior Partner Jukka Niiranen, Arnora Oy ja Projektipäällikkö Stefan Mynttinen, Etelä-Karjalan Liitto.

Palaan asiaan kanssanne lähipäivinä puhelimitse. Mikäli haluatte lisätietoja työstä tai haastattelusta, olkaa hyvä ja ottakaa minuun yhteyttä.

Appendix II. Email template for approaching Russian interviewees

Уважаемый _____,

Я обращаюсь к вам по вопросу научных исследований для совета Южной Карелии. Тема данного исследования – новые бизнес модели, которые стали возможными из-за изменений в законодательстве и соглашении между Россией и Финляндией. Я студент в Технологическом Университете Лаппеенранты, и данное исследование будет моей дипломной работой. Мои руководители: профессор Olli-Pekka Hilmola (LUT), старший партнер Jukka Niiranen (Arnora Oy), менеджер проекта Stefan Mynttinen (совет Южной Карелий).

Я предлагаю встретить с Вами 4-го сентября, чтобы обсудить текущую ситуацию, особенно касающуюся железнодорожных путей сообщения, между Финляндией и Россией. Данное исследование фокусируется на Южной Финляндии, однако, изменения в законодательстве и соглашении потенциально дают возможность для более тесного сотрудничества между Финляндией (Европейский союз), Россией и другими СНГ-странами, а так же Китаем.

Пожалуйста, свяжитесь со мной, если у Вас есть какие-то вопросы. Ожидаю от Вас ответ.

(continues)

(Appendix II continues)

Dear respected x,

I am contacting you concerning on my current research for the Council of Southern Karelia. The topic of the research is novel business models enabled by the changed international agreements and regulations between Russia and Finland. I am a student from the Lappeenranta University of Technology (LUT) and I am doing this research as my master's thesis. Professor Olli-Pekka Hilmola is acting as my supervisor for the research, as well as, Senior Partner Jukka Niiranen (Arnora Oy) and Project Manager Stefan Mynttinen (Council of Southern Karelia).

I would like to propose meeting on 4th of September to discuss about your view on the current situation, especially concerning railway traffic, between Russia and Finland. The research is mainly focused on finding novel business models in southern Finland, however, the changed legislation and agreements between Russia and Finland are potentially enabling higher degree of collaboration between actors from Finland (EU), Russia and other CIS-countries, as well as China.

If you have any further questions, please feel free to contact me. I will be looking forward to your reply.

Appendix III. Script for the semi-structured interviews (Finnish)

Aiheet:

- Asiakkaana Etelä-Karjalan Liitto
- Suomesta lähtöisin oleva liiketoiminta
- Pohjana KV-sopimusten sekä lainsäädännön muutokset Suomen ja Venäjän välillä
- Pohjoinen kasvuvyöhyke
    - Etelä-Suomi
- Innovaatio
- Ekologisuus

Kysymykset/Rakenne:

1. **Yleiskatsaus liiketoiminnasta**
    1. Mitä? Missä? Milloin? Yrityksen perustiedot?
    2. Minkälaisia partnereita teidän yrityksellänne on? Voidaanko puhua tekijöiden verkostosta?
    3. Mitkä ovat suurimmat muutokset liiketoiminnassanne 3-5 viime vuoden aikana?
    4. Mitkä ennustaisitte olevan suurimmat muutokset liiketoiminnassanne 3-5 seuraavaan vuoden aikana?
    5. Kuljetusmuodot
        1. Millaisia kuljetusketjuja teillä on käytössä (laiva, rautatie, kumipyörä, jne)?
        2. Kuuluuko liiketoimintaanne kappale/massatavaraa?
    6. Kuuluuko toimintaanne Venäjälle (Valko-Venäjälle, Kiinaan, Kazakstan, Mongolia) suuntautuvaa toimintaa?
        1. Jos kyllä, minkälaista? Vienti? Tuonti?
        2. Jos ei, oletteko suunnitelleet toiminnan laajentamista itään? Miksi? Miksi ette? Tuonti? Vienti?
2. **KV-sopimusten muutosten vaikutus. Uudet liiketoimintamallit**
    1. Mitkä ovat suurimmat teidän toimintaanne vaikuttaneet muutokset sopimuksissa ja lainsäädännössä?
        1. Miten sääntelyn vapautuminen vaikuttanut liiketoimintaanne?
        2. Voisiko toimintaa vapauttaa mielestänne vielä entisestään?
    2. Rautatie
        1. Miten 2016 muuttunut yhdysliikennesopimus on vaikuttanut toimintaanne?
            1. Sujuvatko KV-kuljetukset käytännössä mutkitta?
        2. Miten kilpailun vapautuminen 2007 Suomen rataverkolla on vaikuttanut toimintaanne?
            1. Miten kilpailun avautuminen on vaikuttanut omaan toimintaanne?
            2. Oletteko kiinnostuneita kilpailemaan kuljetuksista rautatiellä? Miksi? Miksi ette?
            3. Pidättekö maantiekuljetuksia kannattavampina? Miksi? Miksi ette?
        3. Miten venäjälle suuntautuvien KV-rautatiekuljetusten vapautuminen kilpailulle on vaikuttanut toimintaanne?

(continues)

(Appendix III continues)

1. Miten KV-rautateiden kilpailun avautuminen on vaikuttanut omaan toimintaanne?
2. Oletteko kiinnostuneita kilpailemaan KV-kuljetuksista rautatiellä? Miksi? Miksi ette?

4. VAK-sopimus
    1. Liittyykö liiketoimintaanne vaarallisia aineita? Miten vaaralliset aineet liittyvät toimintaanne?
    2. Miten sopimus on vaikuttanut vaarallisten aineiden kuljetuksiin toiminnassanne?
5. Rikkidirektiivin johdosta myönnetty valtionapu (rataveron poistuminen 2015-2018)
    1. Miten rataveron väliaikainen poistuminen vaikuttaa toimintaanne?
    2. Uskotteko rataveron väliaikaisen poistumisen jatkuvan?
6. Miten suhtaudutte mahdolliseen uuteen kalustoyhtiöön, joka vuokraisi rautatiekalustoa eri toimijoille?
7. Miten kuvailisitte rautatieliikenteen nykyistä hintatasoa?

3. Merikuljetukset
    1. Rikkidirektiivi
        1. Miten vesistöjen väylämaksun väliaikainen poistuminen on vaikuttanut toimintaanne?
        2. Uskotteko vesistöjen väylämaksun väliaikaisen poistumisen jatkuvan?
        3. Oletteko joutuneet uusimaan kalustoanne rikkidirektiivin myötä?
        4. Käytättekö kalustonne polttoaineena nesteytettyä maakaasua (LNG)?
    2. Typpidirektiivi
        1. Miten 2021 voimaan tuleva typpidirektiivi vaikuttaa toimintaanne?
    3. Sisävesi, saimaan kanava
4. Ilmailu
    1. Miten kilpailu Suomesta Venäjälle suuntautuvasta lentoliikenteestä EU-maiden kesken on vaikuttanut toimintaanne?
        1. Näettekö kilpailun vapautumisessa mahdollisuuksia uudelle liiketoiminnalle?
5. Yleinen
    1. Miten EU:n asettaman hiilidioksidipäästöjen vähentämistavoite (-39%) Suomessa vaikuttaa toimintaanne?
        1. Miten olette huomioineet vähentämistavoitteen?
6. Onko liiketoiminnallanne tarvetta uusille partnereille tai alihankkijoille (asiantuntija tietyssä liiketoiminnan osa-alueessa)?

**3. Teknologia ja innovaatio. Uudet liiketoimintamallit**

1. Mitkä ovat suurimmat muutokset jotka teknologia ja innovaatio ovat tuoneet toimintaanne?

(continues)

(Appendix III continues)

1. Esimerkiksi:
    1. Tiedonsiirto, mobiiliverkot
        1. IoT
            1. Lora (rakenteilla suomessa, digita), sigfox, matalataajuus
            2. lte-m, 450-2600 mhz
            3. yksityiset lte/wifi-verkot
            4. IoT:n sovellukset
    2. Block chain
        1. Läpinäkyvyys
        2. Välikäsien eliminointi
        3. Tekoäly, koneoppiminen, automaatio
    3. Ekologisuus, biotalous, environmental sustainability
        1. Rikkidirektiivi?
        2. Typpidirektiivi?
        3. Hiilidioksidipäästöjen vähentäminen?
        4. Liiketoiminta, palvelut näiden ympärillä?
2. Onko liiketoiminnallanne tarvetta uusille partnereille tai alihankkijoille
    1. Spin-off
    2. Joint venture
3. Perinteisten mallien palvelullistuminen. Onko toiminnassanne tilaa uusille palveluille? Onko mahdollista/kannattavaa ulkoistaa liiketoiminnan osia ulkopuolisille palveluntarjoajille?
    1. Palvelut rautateillä?
    2. Merellä?
    3. Maantiellä?
    4. Ilmailu?
    5. Terminaalit?
    6. Järjestely, siirtokuormaus?
    7. Kalusto?
    8. Tietoliikenne?
4. Koetteko aikaisemmin valtion yksinoikeudella harjoittaman toiminnan yksityistäminen houkuttelevaksi liiketoimintamahdollisuudeksi?
    1. Rautatiekuljetukset?
    2. KV-rautatiekuljetukset Venäjälle?
    3. Rautatiekuljetusten palvelullistuminen/hajautuminen monelle eri toimijalle?
5. Koetteko Venäjän tai Kaukoidän markkinat houkutteleviksi liiketoimintaa ajatellen?
    1. Mikä on valmiutenne suorittaa investointeja tällaiseen liiketoimintaan?
        1. Toimitilat
        2. Verkosto
        3. Kalusto
    2. Vienti? Tuonti?

Appendix IV. Script for the semi-structured interviews (In Russia)

Topics:

- Study ordered by the Council of Southern Karelia
- New businesses that originate from Southern Finland
    - Northern Growth Zone
- Changed legislations and contracts between Finland and Russia
- Innovation
- Environmental Sustainability

1. **General information of the interviewee**
    1. General info
        1. Position
        2. History
        3. Current work
    2. General view on the current situation in Russian logistic industry
        1. National activities
            1. Best practices
            2. Types of operators, subcontractors, forwarders, etc.
        2. International activities
    3. Most important topics in past few years
    4. General view of the future in next few years
2. **View on the legislative and contractual environment, focus on the international context**
    1. View on current legislations and contracts with EU-countries
        1. Contract liberating competition on international railway transport with EU
        2. Finland
    2. Situation with other countries (China, Kazakhstan, etc.)
    3. Maritime transport
        1. Sulfur regulations (Baltic sea)
    4. Anything else?
3. **New business models, Technology, Innovation**
    1. View on currently the most important technologies and innovations
        1. Tracking, Predictability
            1. Blockchain
        2. IoT-solutions
        3. Solutions concerning environmental sustainability
    2. Desirability of the foreign markets

Appendix V. Cover letter for the survey

*Digitaalisuus, innovaatiot, kansainväliset sopimukset ja lainsäädännön muutokset vaikuttavat jokaisen liiketoimintaan. Nämä vaikutukset voivat olla positiivisia tai negatiivisia. Ne voivat tapahtua nopeasti tai vuosien saatossa.*

*Pyydämme, että käytät hetken arvokasta aikaasi ja pohdit näitä kysymyksiä tutkimuksessamme.*

## Kutsu osallistumaan Etelä-Karjalaa koskevaan tutkimukseen

Etelä-Karjalan liitto toteuttaa tutkimuksen, jossa selvitetään innovaatioiden ja teknologisten muutosten sekä Suomen ja Venäjän välisen lainsäädännön ja sopimusten muutoksien vaikutuksia liiketoimintaan. Olemme erityisen kiinnostuneita siitä, millaisia uusia liiketoimintamahdollisuuksia ja -malleja Etelä-Karjalan sekä laajemminkin Etelä-Suomen alueelle on syntynyt, on syntymässä tai voidaan synnyttää edellä mainittujen aiheiden kautta. Tutkimus toimii myös Lappeenrannan teknillisessä yliopistossa (LUT) yhdessä Arnora Oy:n kanssa toteutettavan laajemman diplomityön aineistona.

Kaikkien vastaajien kesken ***arvomme kaksi sadan euron lahjakorttia*** eteläkarjalaisiin yrityksiin: aluspukeutumisen erikoisliikkeeseen ***Alusasuliike AlexSandra***an sekä siivous- ja hygienia-alan ammattilaisten asiantuntijaliikkeeseen ***Etelä-Karjalan Siivoustukku***un. Vastausaineistoa käsitellään kokonaisuutena, eikä yksittäisen vastaajan vastauksia ole mahdollista tunnistaa tuloksista. Vastaukset 10.10. mennessä.

**Linkki kyselyyn:** http://ekarjala.arnora.com

**Lisätiedot:** Oskari Lähdeaho, [redacted]

*Digitalization, innovations, international contracts and legislative changes affect all businesses. The effects can be positive or negative. They can happen overnight or over the years.*

*We ask you to use a moment of your precious time and give a thought for these questions in our research.*

## Invitation to participate in a research concerning South Karelia

The Regional Council of South Karelia is carrying out a research to investigate effects of innovation, technological changes as well as legislative and contractual changes between Finland and Russia into business. We are especially interested in new business opportunities and models generated, emerging and potential due to the aforementioned factors in the South Karelia, and furthermore in the Southern Finland. This research will also act as material for more extensive master's thesis collaborated with Lappeenranta University of Technology (LUT) and Arnora Oy.

All respondents are eligible to participate in a raffle for ***two gift cards worth one hundred euros*** usable in South Karelian companies: underwear specialist store ***Alusasuliike AlexSandra*** and cleaning and hygiene industry professionals' store ***Etelä-Karjalan Siivoustukku***. The answers will be handled as a whole, thus single responds cannot be distinguished. Please submit answers by the 10th of October.

**Link to the questionnaire:** http://ekarjala.arnora.com

**Additional info:** Oskari Lähdeaho, [redacted]

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ETELÄ-KARJALAN LIITTO

LUT Lappeenranta University of Technology

ARNORA

Appendix VI. The survey

# Tutkimus kansainvälisten sopimusten ja lainsäädännön muutosten mahdollistamista liiketoiminnasta Etelä-Karjalassa - Research on the new business in South Karelia enabled by changes in international contracts and legislation

Tässä Etelä-Karjalan liitolle toteutettavassa tutkimuksessa on tavoitteena selvittää Suomen ja Venäjän kansainvälisen lainsäädännön ja sopimusten muutoksien mahdollistamia uusia liiketoimintamalleja Etelä-Suomen alueella. Keskeisinä teemoina kansainvälisen lainsäädännön ja sopimusten lisäksi toimivat innovaatio, teknologia sekä ekologisuus. Tutkimus toimii myös Lappeenrannan teknillisessä yliopistossa (LUT) tehtävän diplomityön aineistona.

Vastausaineistoa käsitellään kokonaisuutena, eikä yksittäisen vastaajan vastauksia ole mahdollista tunnistaa tuloksista.

The goal of this research, which is done for the Regional Council of South Karelia, is to investigate new business models feasible in the area of Southern Finland, that are enabled by the changed legislation and international contracts between Finland and Russia. In addition to international contracts and legislation, central themes for the research consist of innovation, technology and environmental sustainability. This research will also act as material for a master's thesis in Lappeenranta University of Technology (LUT).

The answers will be handled as a whole, which means that it is not possible to recognize respondents from the answers.

* Required

ETELÄ-KARJALAN LIITTO

LUT Lappeenranta University of Technology

ARNORA

1. **Mikä on yrityksenne toimiala? What is the industry of your business?** *
   *Check all that apply.*

   - [ ] Kuljetus - Transport
   - [ ] Varastointi - Warehousing
   - [ ] Terminaalipalvelut - Terminal services
   - [ ] Huolinta - Forwarding
   - [ ] Valmistava teollisuus - Manufacturing industry
   - [ ] Other: _____

(continues)

(Appendix VI continues)

2. **Kuinka suuri yrityksenne on? What is the size of your company?** *
*Mark only one oval.*

- ◯ 1-3 henkilöä - people
- ◯ 4-10 henkilöä - people
- ◯ 11-50 henkilöä - people
- ◯ 51-250 henkilöä - people
- ◯ 251 henkilöä tai enemmän - people or more

3. **Liiketoiminnassanne käsittelette pääasiassa (Valitse 1-3) - Your business mainly handles (Choose 1-3):** *
*Check all that apply.*

- ☐ Puutavaraa - Timber
- ☐ Sellua - Pulp
- ☐ Paperia - Paper
- ☐ Muita teollisuuden raaka-aineita - Other industrial raw materials
- ☐ Raskasta / ylisuurtatavaraa (projektikuormat) - Heavy goods (project loads)
- ☐ Muuta lavatavaraa - Other goods on pallets
- ☐ Kappaletavaraa - Less than truck/container load
- ☐ Other: _____

4. **Käytössä oleviin kuljetusketjuihinne kuuluu - Your transport chain contains:** *
*Check all that apply.*

- ☐ Merikuljetukset - Maritime transport
- ☐ Sisävesikuljetukset - Inland waterway transport
- ☐ Rautatiekuljetukset - Railway transport
- ☐ Maantiekuljetukset - Road transport
- ☐ Lentokuljetukset - Air transport
- ☐ Other: _____

5. **Mikä seuraavista kuvaa parhaiten pääasiallista kansainvälistä toimintaanne? Which of the following options best describes your international activities?** *
*Mark only one oval.*

- ◯ Vienti - Export *Skip to question 6.*
- ◯ Tuonti - Import *Skip to question 6.*
- ◯ Vienti ja tuonti - Export and Import *Skip to question 6.*
- ◯ Muu kainsainvälinen kaupankäynti (esim. välitysliiketoiminta) - Other international trade (for example, intermediary business) *Skip to question 6.*
- ◯ Ei kansainvälistä toimintaa - No international activities *Skip to question 7.*

## Kansainvälinen toiminta - International activities

(continues)

(Appendix VI continues)

6. **Pääasiallisesti kansainvälinen toimintanne suuntautuu (Valitse 1-3) - Mainly your international activities is directed to (Choose 1-3):** *
*Check all that apply.*

- [ ] Venäjälle - Russia
- [ ] Muihin IVY-maihin - Other CIS-countries
- [ ] Kiinaan - China
- [ ] Muualle Kaukoitään - Other Far East
- [ ] EU-maihin - EU countries
- [ ] Pohjoismaihin - Nordic countries
- [ ] Muualle maailmaan - Other parts of the world

*Skip to question 10.*

## Kiinnostus kansainväliseen toimintaan - Interest towards international activities

7. **Onko teillä kiinnostusta laajentaa toimintaanne kansainvälisille markkinoille? Are you interested in expanding your activities to international markets?** *
*Mark only one oval.*

- ◯ Kyllä - Yes *Skip to question 8.*
- ◯ Ei - No *Skip to question 10.*

## Kiinnostus kansainväliseen toimintaan - Interest towards international activities

8. **Kansainvälisessä toiminnassa pääasiallisesti kiinnostaa - In international activities mostly interests:** *
*Mark only one oval.*

- ◯ Vienti - Export
- ◯ Tuonti - Import
- ◯ Molemmat - Both

9. **Kohteena kansainväliselle toiminnalle kiinnostaa (Valitse 1-3) - As a target country for international activities interests:** *
*Check all that apply.*

- [ ] Venäjä - Russia
- [ ] Muut IVY-maat - Other CIS-countries
- [ ] Kiina - China
- [ ] Muu Kaukoitä - Other Far East
- [ ] EU-maat - EU countries
- [ ] Pohjoismaat - Nordic countries
- [ ] Muu maailma - Other parts of the world

(continues)

(Appendix VI continues)

*Skip to question 10.*

## Suomen ja EU:n lainsäädännön muutosten vaikutus liiketoimintaanne - Effects of changes in Finnish and EU legislation into your business

Mikäli ette tiedä tai muuten pysty vastaamaan väittämään, merkitkää vastaukseksi 0.

If you don't know or for some other reason cannot answer, pick 0.

10. **Rautatiekuljetusten kilpailun vapautumisen vaikutus toimintaan - Effect of liberalisation of the competition on railway transport into your activities:** *
*Mark only one oval.*

| | 0 | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| Ei vaikutusta - No effect | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Vahva vaikutus - Strong effect |

11. **Rataveron väliaikaisen poistumisen vaikutus toimintaan - Effect of temporary removal of the railway tax into your activities:** *
*Mark only one oval.*

| | 0 | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| Ei vaikutusta - No effect | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Vahva vaikutus - Strong Effect |

12. **EU:n rikkidirektiivin vaikutus toimintaan (Meriliikenne, 2015) - Effect of the EU's Sulphur Directive into your acitivities (Maritime transport, 2015):** *
*Mark only one oval.*

| | 0 | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| Ei vaikutusta - No effect | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Vahva vaikutus - Strong effect |

13. **EU:n typpidirektiivin vaikutus toimintaan (Meriliikenne, 2021) - Effect of the EU's Nitrates Directive into your activities (Maritime transport, 2021):** *
*Mark only one oval.*

| | 0 | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| Ei vaikutusta - No effect | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Vahva vaikutus - Strong effect |

(continues)

(Appendix VI continues)

14. **EU:n hiilidioksidipäästöjen vähennystavoitteen vaikutus toimintaan - Effect of the EU's carbon dioxide emission cut target into your activities:** *
2020 - 20%, 2050 - 80% vähennys verrattuna vuoden 1990 tasoon. 2020 - 20%, 2050 - 80% cut compared to level of the year 1990.
*Mark only one oval.*

| | 0 | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| Ei vaikutusta - No effect | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Vahva vaikutus - Strong effect |

15. **Muu lainsäädännöllinen muutos, mikä? Other legislative change, which one?**

_____

16. **Edellä mainitsemanne muun lainsäädännöllisen muutoksen vaikutus toimintaan - Effect of the above mentioned legislative change into your activities:**
*Mark only one oval.*

| | 0 | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| Ei vaikutusta - No effect | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Vahva vaikutus - Strong effect |

## Suomen ja Venäjän kansainvälisten sopimusten vaikutus toimintaanne - Effects of the international contracts between Finland and Russia into your activities

Mikäli ette tiedä tai muuten pysty vastaamaan väittämään, merkitkää vastaukseksi 0.

If you don't know or for some other reason cannot answer, pick 0.

17. **Kansainvälisten rautatiekuljetusten kilpailun vapautumisen vaikutus toimintaanne - Effect of the liberalisation of competition on international railway transport into your activities:** *
*Mark only one oval.*

| | 0 | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| Ei vaikutusta | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Vahva vaikutus |

18. **Muu kansainvälinen sopimus, mikä? Other international contract, which one?**

_____

(continues)

(Appendix VI continues)

19. **Edellä mainitsemanne muun Suomen ja Venäjän kansainvälisen sopimuksen vaikutus toimintaanne - Effect of the above mentioned international contract between Finland and Russia into your activities:**
*Mark only one oval.*

| | 0 | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| Ei vaikutusta | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Vahva vaikutus |

## Rautatiealan muutosten vaikutus toimintaanne - Effect of the changes in railway industry into your activities

Mikäli ette tiedä tai muuten pysty vastaamaan väittämään, merkitkää vastaukseksi 0.

If you don't know or for some other reason cannot answer, pick 0.

20. **Liikenne- ja viestintäministeriön suunnitteleman rautateiden kalustovuokrausyhtiön tarve - Need for railway equipment leasing company planned by the Ministry of transport and communications:** *
*Mark only one oval.*

| | 0 | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| Ei tarvetta | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Kriittinen tarve |

## Kumppanuudet - Partnerships

21. **Onko yrityksellänne ydinliiketoiminnan kehittyessä tarvetta uusille alihankkijoille osana palvelunne tuottamista? Does your company have a need for new subcontractors as a part of your service production as your core business activities are developing?** *
*Mark only one oval.*

- ◯ Kyllä - Yes
- ◯ Ei - No

22. **Onko yrityksenne halukas tarjoamaan alihankintaa osana toisen yrityksen palvelun tuottamista? Is your company willing to offer subcontracting as a part of other company's service production?** *
*Mark only one oval.*

- ◯ Kyllä - Yes
- ◯ Ei - No

23. **Havaitsemanne muutokset alihankinnassa viimeisen 2-3 vuoden aikana - Changes you have observed in subcontracting during the last 2-3 years:**

(continues)

(Appendix VI continues)

24. **Tarvitsetteko / tarjoatteko uudenlaista, innovatiivista alihankintaa? Do you need / offer new, innovative subcontracting services?**

## Kiinnostuksenne innovaatioita ja uusia teknologioita kohtaan toiminnassanne - Your interest towards innovations and new technology in your activities

Mikäli ette tiedä tai muuten pysty vastaamaan väittämään, merkitkää vastaukseksi 0.

If you don't know or for some other reason cannot answer, pick 0.

25. **Lohkoketju - Blockchain:** *
Esimerkiksi Maerskin ja IBM:n konttien seurantajärjestelmä. For example, container tracking system utilized by Maersk and IBM.
*Mark only one oval.*

| | 0 | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| Ei kiinnostava - Not interesting | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Erittäin kiinnostava - Very interesting |

26. **Internet of Things:** *
Esineiden välinen internet-yhteys. Internet connection between different objects.
*Mark only one oval.*

| | 0 | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| Ei kiinnostava - Not interesting | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Erittäin kiinnostava - Very interesting |

27. **Tekoäly - Artificial Intelligence:** *
Tiedon automaattinen analysointi ja mahdollisesti näihin tuloksiin reagointi. Automatic analysis on data and possibly reaction to the results of the analysis.
*Mark only one oval.*

| | 0 | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| Ei kiinnostava - Not interesting | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Erittäin kiinnostava - Very interesting |

(continues)

(Appendix VI continues)

28. **Nesteytetty maakaasu polttoaineena - Liquefied natural gas as a fuel:** *
*Mark only one oval.*

| | 0 | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| Ei kiinnostava - Not intersting | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Erittäin kiinnostava - Very interesting |

29. **Päästöjen rikkipesurit (laivaliikenteessä) - Sulphur emission cleaners (in maritime transport):** *
*Mark only one oval.*

| | 0 | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| Ei kiinnostava - Not interesting | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Erittäin kiinnostava - Very interesting |

30. **Uusiutuvat energialähteet, Biotalous - Renewable energysources, Bio economy:** *
*Mark only one oval.*

| | 0 | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| Ei kiinnostava - Not interesting | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Erittäin kiinnostava - Very interesting |

31. **Kiertotalous - Circular economy:** *
Hukkamateriaalien hyödyntäminen ja niillä kaupankäynti. Utilization and trade with secondary and waste material.
*Mark only one oval.*

| | 0 | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| Ei kiinnostava - Not interesting | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Erittäin kiinnostava - Very interesting |

## Onko edellä mainittuja innovaatioita ja uusia teknologioita otettu käyttöön tai aiotaanko niitä ottaa käyttöön toiminnassanne seuraavan kahden vuoden aikana? Have any of the above mentioned innovations and new technologies been utilized or are they going to be utilized in your activities during the next two years?

32. **Lohkoketju - Blockchain:** *
Esimerkiksi Maerskin ja IBM:n konttien seurantajärjestelmä. For example, container tracking system utilized by Maersk and IBM.
*Mark only one oval.*

- ◯ Kyllä - Yes
- ◯ Ei - No

(continues)

(Appendix VI continues)

33. **Internet of Things:** *
Esineiden välinen internet-yhteys. Internet connection between different objects.
*Mark only one oval.*

- Kyllä - Yes
- Ei - No

34. **Tekoäly - Artificial Intelligence:** *
Tiedon automaattinen analysointi ja mahdollisesti näihin tuloksiin reagointi. Automatic analysis on data and possibly reaction to the results of the analysis.
*Mark only one oval.*

- Kyllä - Yes
- Ei - No

35. **Nesteytetty maakaasu polttoaineena - Liquefied natural gas as a fuel:** *
*Mark only one oval.*

- Kyllä - Yes
- Ei - No

36. **Päästöjen rikkipesurit (laivaliikenteessä) - Sulphur emission cleaners (in maritime transport):** *
*Mark only one oval.*

- Kyllä - Yes
- Ei - No

37. **Uusiutuvat energialähteet, Biotalous - Renewable energysources, Bio economy:** *
*Mark only one oval.*

- Kyllä - Yes
- Ei - No

38. **Kiertotalous - Circular economy:** *
Hukkamateriaalien hyödyntäminen ja niillä kaupankäynti. Utilization and trade with secondary and waste material.
*Mark only one oval.*

- Kyllä - Yes
- Ei - No

## Arvionne seuraavien liiketoimintarakenteiden toimivuudesta omalla alallanne - Your assessment of the feasibility of the below mentioned business structures in your own industry

Mikäli ette tiedä tai muuten pysty vastaamaan väittämään, merkitkää vastaukseksi 0.

If you don't know or for some other reason cannot answer, pick 0.

(continues)

(Appendix VI continues)

39. **Luotettavaan ja reaaliaikaiseen yritysten väliseen avoimeen materiaali- ja tavaravirtojen seurantaan sekä viestintään perustuvat liiketoimintamallit. Business models based on reliable, real time and open communication and material and supply flow tracking.** *
Mahdollistavana teknologiana esimerkiksi toimijoiden välinen lohkoketjuverkosto. Esimerkiksi Maersk ja heidän kumppaniverkostonsa. For example, blockchain network between different actors as an enabling technology. For example, Maersk and their partner network.
*Mark only one oval.*

| | 0 | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| Ei toimiva - Not feasible | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Erittäin toimiva - Very feasible |

40. **Alustapohjaiset liiketoimintaratkaisut, joissa tarkoitukseen sopivalla ratkaisulla jaetaan tietoa materiaaleista, työtilauksista tai asiakkaista kumppaniverkostossa. Platform based business solutions, where a fitting solution is used to share information about materials, work orders or customers within the partner network.** *
Esimerkiksi Uber, Lyft ja AirBnB. For example, Uber, Lyft and AirBnB.
*Mark only one oval.*

| | 0 | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| Ei toimiva - Not feasible | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Erittäin toimiva - Very feasible |

41. **Perinteinen toimijoiden välinen alihankintaverkosto, jossa erikoistuneet kumppanit pystyvät täyttämään päämiehen tarpeen kustannustehokkaammin. Traditional subcontracting network between actors, where specialized partners can fulfill the need of the principal more cost efficiently.** *
*Mark only one oval.*

| | 0 | 1 | 2 | 3 | 4 | 5 | |
|---|---|---|---|---|---|---|---|
| Ei toimiva - Not feasible | ◯ | ◯ | ◯ | ◯ | ◯ | ◯ | Erittäin toimiva - Very feasible |

## Uudet liiketoimintamallit, innovaatiot ja teknologia - New business models, innovations and technology

42. **Mikä tai mitkä liiketoimintamallien muutokset, innovaatiot, teknologiat tai ympäristövaatimukset ovat mielestänne mullistaneet tai tulevat lähitulevaisuudessa mullistamaan yrityksenne toimintaa tai toimialaa? What changes in business models, innovations, technologies or environmental requirements, in your opinion, have disrupted or will disrupt the activities of your company or industry in the nearest future?**

## Lainsäädännön ja sopimusten muutosten vaikutukset

(continues)

(Appendix VI continues)

## toimintaanne - Effect of the changes in legislation and contracts into your activities

43. **Mitkä ovat olleet ja/tai mitkä tulevat olemaan lainsäädännön ja sopimusten muutosten vaikutukset toimintaanne? What have been and/or what will be the effects of changes in legislation and contracts into your activities?**

## Uusien liiketoimintamallien pilotointi - Piloting of new business models

44. **Tämän tutkimuksen yhtenä tavoitteena on löytää uusia, toimivia liiketoimintamalleja kansainväliseen tavaraliikenteeseen. Oletteko kiinnostuneita osallistumaan löytyvien uusien liiketoimintamallien pilotointiin ja käyttöönottoon? One desired outcome for this research is to find new, working business models to be utilized in international transport. Are you interested in participating in piloting the newly found business models?** *

*Mark only one oval.*

- ◯ Kyllä - Yes
- ◯ Ei - No

45. **Oletteko halukas esiintymään Etelä-Karjalan liiton järjestämissä seminaareissa yrittäjyyteen ja uuteen liiketoimintaan liittyen? Are you willing to appear in seminars organized by the Regional Council of South Karelia concerning entrepreneurship and new business?** *

*Mark only one oval.*

- ◯ Kyllä - Yes
- ◯ Ei - No

*Skip to question 46.*

## Yhteystiedot - Contact information

Täyttäkää yhteystietonne osallistuaksenne lahjakorttien (100€ - AlexSandra ja Etelä-Karjalan siivoustukku) arvontaan. Lisäksi voimme olla yhteydessä teihin mikäli ilmaisitte kiinnostuksenne liiketoimintamallien pilotointeihin ja seminaareihin liittyen. Tämän sivun tietoja käytetään ainoastaan näihin yhteydenottoihin.

Please fill in your contact details to participate in the raffle for the giftcards (100€ - AlexSandra and Etelä-Karjalan siivoustukku). In addition, if you were interested, we can contact you concerning the piloting and the seminars about the new business models. Information on this page will only be used to contact you concerning the discussed matters.

46. **Yrityksen nimi - Name of your company:**

(continues)

(Appendix VI continues)

47. Vastaajan nimi - Name of the respondent:

48. Puhelinnumero - Phone number:

49. Sähköpostiosoite - E-mail address: