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The Adaptation of the Finnish model for recycling of aluminum cans in Saint-Petersburg, Russia

Anna Gorelova
Dmitriy Ivanov

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JYVÄSKYLÄN AMMATTIKORKEAKOULU
JAMK UNIVERSITY OF APPLIED SCIENCES

JYVÄSKYLÄN AMMATTIKORKEAKOULU
JAMK UNIVERSITY OF APPLIED SCIENCES

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Abstract

The aim of the thesis was to create a business model for an aluminum can recycling system in St. Petersburg, Russia. The objectives were to study the possible business models that could be applied in St. Petersburg and to determine the roles and responsibilities of the parties in the process of collecting, transporting and recycling aluminum beverage cans.

The authors used a qualitative approach and a survey as the data collection method. The primary data was collected by using semi-structured interviews in order to form a better understanding of the phenomenon. There were three respondents from the Coca-Cola, REXAM and PALPA companies. The primary data helped to analyze the aluminum supply chain in Russia and in Finland, as well as to create a suitable business model for the proposed company. Moreover, the theoretical framework contained Osterwalder's Canvas model, the MNE/NGO collaboration model and the "social business model" concept that were used in the creation of the suggested model.

The results of the study helped to design a model that can be applied in St. Petersburg. Possible limitations as well as contingencies were taken into consideration from the beginning of the research process. The authors believe that the thesis can be used as a model framework for future research in the field.

Keywords/tags (subjects)

Business model, aluminum, recycling, waste, supply chain, can deposit system

Miscellaneous

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1 INTRODUCTION

Nowadays, public interest in recycling has increased drastically (Importance of recycling, 2014). Over the past 15 years, the industrialized world has developed recycling programs in order to reduce waste production, air pollution and dwindle landfill capacity (Recycling worldwide, 2013). The most popular materials in recycling are plastic, paper and metal. The study focuses on the recycling of aluminum cans. There are several reasons for it, and one of them is that aluminum is widely used in different industries, and that recycling helps to save 74 percent of the energy used to make it (Interesting recycling facts, 2014). Russia is one of the largest aluminum producers and consumers (Aluminum producers, 2014).

Ecological problems raise the awareness of people to change their attitude to waste. Nowadays, Russian companies and some governmental projects try to implement some recycling systems. The paper presents research on the aluminum market in Russia, the business model of can recycling in Finland as well as the creation of the business model for Saint Petersburg. However, one must keep in mind that the business model designed in this paper is contingent upon various factors and that it is applicable to the proposed project company only. At the moment, the authors are not planning to start the company in Saint-Petersburg, and the suggested model can be used as a framework for recycling business startups in Russia.

1.1 Structure of the thesis

The thesis is broken down into five main parts that include a background information, a theoretical part, presentation of the research methods and design, results and an empirical analysis and the conclusion. The background begins with an introduction to the waste industry in general, as well as presents the current situation in the aluminum recycling business in Russia, in particular in St. Petersburg. Having analyzed the recent literature on the topic, the paper presents the main findings on the business models. After presenting three possible business model types, the theoretical framework ends with considerations on the best structure of the business model for the Russian recycling market. After the summary and conclusion of the theory, the paper

presents the research-design and its implementation. The research objective was to find out how the process of the aluminum recycling works in Russia and research the possible ways to implement the Finnish model based on the opinions of practitioners from the waste industry. In other words, the conclusion of the thesis is based mostly on the results from the collected primary data.

1.2 Background to the waste environment

As the idea of the thesis was very narrow at first, the authors started from analyzing the existing data about what waste is, what types of waste disposal exist, and what the current situation is in recycling in Russia. The authors analyzed studies on the recycling itself and its business processes.

To begin with, the authors formulated a definition of waste. According to the European Topic Centre on Sustainable Consumption and Production (Eionet, 2013), waste is everything that becomes unusable or unwanted after production and consumption. Waste is a material that has no future purpose. However, it might be recycled into raw materials that are used to produce new products. According to the research project conducted by *Let's Do IT Movement* (2012) as a part of their "World Waste Status Project", the highest percentage of waste generation per capita worldwide (highest to lowest) is in the Asia Pacific region, Middle East region, Europe and the North American region. Every society with a rapid industrial development faces the issue of sustainable waste management. People in most developed countries are aware of the importance of recycling and they care about the future of their countries. However, not all are committed to reducing waste generation.

As we can see, almost everything that people leave is waste. While people at home create ordinary garbage, the industrial and manufacturing world creates mostly solid and even hazardous waste that is dangerous for people and the environment (Eionet 2013). There is a great variety of waste classifications: from general ones to very complex and diverse classifications. The classification in this paper is a compromise of those two listed above, and it is based on the classification presented on the *eschooltoday.com* website (2014). In this study, waste was divided into five major types: liquid or solid waste,

hazardous, and three more that are organic, re-usable and recyclable waste. The details are shown below:

- Liquid type is a non-solid form of waste that includes emissions from factories into rivers, lakes, sees or oceans and that is called storm water and wastewater.
- Solid type is the most common type of a waste, because it is any garbage that we produce in our homes, offices and other places, for example old newspapers, furniture and even food.
- Hazardous type is the most dangerous or harmful one that threatens public health and the environment. There are four types of hazardous waste, namely inflammable that easily catches fire, reactive, corrosive that destroys metal and toxic that poisons living organisms.
- Organic type is waste that comes from plants and animals. Organic waste is biodegradable, which means that it is easily broken down by other organisms and turned into manure. Moreover, many people turn their organic waste into compost and use that in their gardens.
- Recyclable type is the most important type for this study. Recycling is a process of transforming used material into new one that will be consumed again. Nowadays, some products, such as aluminum cans, plastics bags and bottles, newspapers and magazines are recycled to a great extent.

There are several ways to treat waste, such as landfills, composting, incineration and recycling. Composting is “recycling” of organic matter that has been decomposed and recycled, where compost is a key ingredient in organic farming. Incineration, based on the Waste Management Resources (2014), is the combustion of organic substances contained in waste materials by high-temperature waste treatment systems in order to convert it into ash, heat or fuel gas. As for the landfill, it is historically the most common method of waste disposal, and it is used in many places around the world. With the help of a garbage truck and dustbin lorry, waste is collected and then moved to landfills or other places where it is managed and treated (Waste Management Resources, 2014). The last but not least is recycling. It was already mentioned above that recycling is a process of changing waste material to a new product

life cycle. It allows reducing the consumption of natural resources and lowers energy usage. Furthermore, recycling is an eco-friendly type of waste management that helps to reduce air, water and soil pollution as opposed to incineration and landfilling. Recycling is a key component of modern waste management systems and holds the third position in the waste hierarchy in "Reduce, Reuse and Recycle" (Waste Management Resources, 2014).

In the present study, the focus was on aluminum recycling. Aluminum recycling is the process of re-melting the aluminum in order to reuse it in the production stage. The main advantage of recycling aluminum is significant cost savings, i.e. it is less expensive and consumes less energy to produce a can from recycled aluminum than from raw aluminum (How to Recycle Aluminum Cans, 2014). According to the Aluminum Association (2014), nowadays aluminum is one of the most recyclable materials and thus the most commonly recycled material on the market. For example, about 75 percent of all aluminum produced in the U.S. is still in use. Aluminum can be recycled over and over again without any loss of quality. In fact, an aluminum beverage container is recycled and back on shelves in approximately 60 days (Aluminum Recycling, 2014).

Looking at the chart by Alcoa (2014), a global leader in lightweight metals technology, engineering and manufacturing, the highest rate of aluminum beverage can collection in 2014 is in China (99,5%), Brazil (96,5%) and Japan (92,7%). At the same time, Germany, Belgium, Sweden and Norway keep the leading positions in recycling beverage cans with over a 90% efficiency rate.

1.3 Why does Russia need to recycle aluminum cans?

According to Dmitry Belanovich (2014), the Director of the Department of Public Policy and Regulation in the Russian Ministry of Environmental Protection, the annual average of municipal solid waste is about 60 million tons and only 10 percent of the waste is recycled in the Russian Federation.

Russia is one of the leading countries in the aluminum industry. The country has enough resources and many places for landfills, so there has been no need for recycling. It was cheaper to store waste in landfills or use incineration rather than buy high-tech recycling systems. However, nowadays the biggest

extraction and resources processing companies and factories are becoming interested in recycling.

In the past few years, the Ministry introduced new laws concerning the production and consumption of waste, as well as prepared new bills concerning environmental protection. For example, a new bill about landfills helped to eliminate more than 95 thousand unauthorized waste disposal places. Moreover, the Ministry is going to prepare a new bill to reduce or ban incineration. At the same time, the government is trying to support projects that are focused on studies of the European recycling trends, innovations and methods of applying those.

According to Sergey Ogorodnov (2013), the CEO of the infrastructure holding company "Infra Engineering", 40% of the accumulated garbage in the country is valuable as secondary raw material. Only about 7-8% of the waste is processed, and the rest is exported to landfills. Furthermore, the waste management business, according to various estimates, can generate $ 2 billion to$ 3.5 billion annually.

The industry is only starting to develop. In Russia, there are only 243 waste treatment and 50 waste sorting complexes and 10 incinerators, which is not sufficient to cope with the large volume of solid waste. Therefore, any new waste processing plant will have a good return on investment in two to five years approximately. The scope of investments in waste management is considered attractive because of high demand and low-risk due to solid payment from the municipalities.

Russia has already experience in the implementation of a waste recycling system in Moscow. In 2004, the Russian Company “ProfBusinessTelecom” introduced the first 300 machines in Moscow. They accepted both aluminum cans and PET-bottles (plastic bottles) that were gatherred outside of the underground stations across the city. In 2007, there were over 2000 machines. The project failed several years after because of lack of cooperation between the company and utilization factories. The lack of awareness and, therefore, interest also had its negative impact on the faith in the project.

The reason why the authors chose St. Petersburg for the implementation of the aluminum recycling model was their idea that the implementation should start from the biggest cities because all major companies' headquarters and factories are located in the area. Saint Petersburg is the second largest city and considered the "Northern Capital of Russia", where many "green" projects are initiated and carried out by the local communities. Furthermore, people organize events and programs in order to improve the current environment situation and create a sustainable future (EcoProject, 2010 and Kuritsyn et al., 2013). Moreover, the local district authorities are competing with each other, and they are willing to improve their areas. However, it is a subject of dispute because it might have advantages and disadvantages at the same time. Finally, Saint Petersburg focuses on Western integration and shares many common projects with Finland.

1.4 Reasons of choosing the Finnish model

The analyses of various sources across the internet and specified magazines and articles on the topic showed that there are three European leaders in aluminum recycling. They are Germany, Finland and Norway. All these countries use deposit system for cans and other containers. Russia is using the mixed model of aluminum collection, which requires a great deal of effort, money and resources for recycling. (European Environmental Agency, 2014.)

The recycling rate for aluminum packaging in Germany is considered the highest in Europe and it continues to grow. The drawback of the application of the German model is that aluminum containers are one of the least popular in Germany, and Germany itself has a low level of consumption of aluminum per capita in Europe, while Finland maintains a high level of aluminum consumption, according to the European Aluminum Association research 2008. On the one hand, Finland and Russia have a well-established and long-lasting relationship, while on the other hand, it has to be acknowledged that the Finnish market is relatively small and that there is a wide acceptance of deposit among the population. Nevertheless, the Finnish model is the most suitable for application, keeping in mind that Russia already undertook some steps in the application of the deposit-return system in the Moscow region.

Going deeper into the Finnish model, the authors analyzed how the business is build. PALPA (Suomen Palautuspakkaus Oy) is a Finnish company organized by the retail trade and the breweries with the main purpose of organizing the recycling process of aluminum cans, plastic and glass bottles. The owners list includes Alko Oy, Inex Partners Oy (S-group food store trader), Ruokakesko Oy (K-group food store trader) and breweries, such as Olvi Oy and Oy Sinebrychoff Ab, as well as Oy Hartwall Ab, which provides non-alcoholic drinks.

The company has developed deposit-based systems for beverage containers, which additionally motivates people to return a beverage can/bottle for recycling purposes. With the help of this system Finland is one of the leading countries in terms of recycling rate, which is over 90%. In 1996, PALPA started to use a deposit system for aluminum cans, and in 2008 the recycling of plastic bottles was introduced. The recycling system for glass bottles was launched in 2012.

PALPA organized a strong system inside the country. When a company decides to introduce a new drink in aluminum, glass or PET package to the Finnish market, it must be registered in the PALPA recycling system. PALPA updates their data twice a month. The customer receives the deposit fee back after returning the registered beverage can or bottle to the return station. For example, the customers pay a 15-cent deposit for an aluminum can of beer that is already included in the price of the product, and after returning it to a recycling machine, they get their money back. Return stations are located inside stores, where the shop employees monitor the collecting process, check the filling of containers, pay the deposit in cash to the customer if needed and send the information on the returned items to PALPA once a month. After that PALPA pays “the deposits back to the shopkeepers that have paid it to the consumers” (PALPA, 2014). The collected beverage cans are delivered to a baling station. “Bales are supplied as raw material to the recycler, where the aluminum is melted and cast into bars. After that the material is reusable, for example, for new beverage cans” (PALPA, 2014).

1.5 Research problem and research question

In order to determine what information is needed and how that information can be effectively used, relevant literature on the topic was collected and reviewed. As a result, it was possible to form a clearer understanding of the reseach phenomenon – the possibility of the implementation of the Finnish model in aluminum can recycling in St. Petersburg, Russia. The key problem was the poor aluminum recycling system in Russia, and the general focus of the research question was on how effective the Finnish recycling model of aluminum cans would be in Russia. The main reseach question was how the process of collecting, transporting and recycling cans should be designed.

The research objectives were divided into two points:

a. Study the possible business models that can be applied in St. Petersburg.
b. Determine the roles and responsibilities in the process of collecting, transporting and recycling aluminum beverage cans in Russia.

The next part, the theoretical framework, presents the theory about business models and helps to analyze the first research object.

2 THEORETICAL FRAMEWORK

The main purpose of the theoretical part is to explain the phenomenon. This thesis uses the traditional format where a theoretical framework is presented at the beginning of the thesis, followed by a presentation of the study results (Kananen 2011, 44). As the main idea of the thesis is to find out the best option for a business model for the Russian recycling market, the scientific side of the study presents an overview of business models. Moreover, having analyzed background information, the authors suggested with some possible features for the proposed company business model that are social impact, self-sufficiency and extra profit generation mechanisms. As a result, the theoretical part describes three business models that were used to design the business model for the proposed company. The model is not supposed to be "a world saver", but rather a framework that is contingent upon the social context, political situation and legislation limitations.

2.1 Business Model

What is a business model? Why do organizations use it? How to choose the right business model for an organization and what is the most suitable model for our case? All these questions are described in the theoretical part of the thesis.

To begin with a definition of the concept of a business model, there are different opinions about it with focus on different classifications and characteristics. As Alexander Osterwalder (2012) says, when one asks people what a business model is, some people think about strategies, some think about processes or channels, profits or product and so on. Baden-Fuller and Morgan (2010, 157) state in the article "Business Models as Models" that a business model helps to describe "how a firm organizes itself to create and distribute value in a profitable manner". Nowadays, business models have become so popular that every organization starts their planning of a business model, in fact, the business model is about the implementation of the strategy of the company. From the economic point of view, every company has the same main goal: to maximize its revenue. However, they try to behave in

different ways and create individualistic ways, which is why there are so many different types of business models.

Over time business models have developed according to trends and needs. For example, according to Baden-Fuller and Morgan (2010), during the industrialization period, the business models classifications were characterized according to the number of firms in an industry and their competitive behavior on the basis of pricing, whereas “now it is more likely to be characterized by a firm’s strategic possibilities and choices, which provides quite a different taxonomy”. As a result, nowadays different aspects, such as new ideas, new business experiences and innovations influence on the classifications and model types.
Henry Chesbrough (2010, 354) mentioned in his article - “Business Model Innovation: Opportunities and Barriers” - that while a company has enough investments and ability to develop new ideas and technologies, it might not have any ability to innovate a business model through which these inputs will pass. Based on Chesbrough’s research of the Xerox case, we can point out the following: – it is important to develop an appropriate business model for each product. In the Xerox case, the company had two different business models for its renowned printer and scanner. The products might seem to be the same, since they belong to the same field, but they are different in ways of distribution, marketing and implementation. Xerox had a large variety of other projects and technologies in its labs, but the company had no idea of how to use or implement them. Therefore, the majority of their projects or products that tried to reach the market failed or gained little to no attention.

This case shows us that a company needs to adopt a business model for a certain product and market. One needs to make it clear how, what, when, etc. A company needs to keep track on what is happening, to see the moment when the old business model is working no more, and experiment with a new one, by either developing the existing one or switching to a different one, for example, by changing the distribution channels (CDs to iTunes). Only experimentation can help identify it and create the data needed to justify it.

Chesbrough with Richard Rosenbloom argue that the success of established business models “strongly influence the information that subsequently gets

routed into or filtered out of corporate decision processes" (Chesbrough 2010, 358). In other words, companies should logically assess important information and avoid other information that might conflict with it. Moreover, it helps to work in a chaotic environment which it usually is in the early stage, where the technological and the market potentials are highly uncertain.

2.2 Canvas Business Model

The Canvas Business model is a strategic management and entrepreneurial tool that allows one to describe, create or design one's own business model (Businessmodelgeneration.com, 2014). The model was initially proposed by Alexander Osterwalder. The success of the business model is in its simplicity. According to the video in Entrepreneurial Thought Leaders Lecture Series about "Tools for Business Model Generation", Osterwalder believes that the creation of a business does not start with a business plan but with a search for a successful business model. When a team gather to discuss a business model or strategy, the people do not always understand each other. So, what to do when words do not work? To make a discussion clear there should be a visual language and a map of the team's ideas. That is the main idea of the Canvas Business Model.

There are nine basic blocks that allow one to design, improve or innovate any kind of business models. All nine blocks should be in one poster so that it is possible to see all the processes and understand how the fit together. The Canvas allows seeing a combination between the product and the business model that is going to keep the company ahead in competition. In other words, one can see the relationships between the segments. According to Osterwalder and Pigneur (2009, 15), "this concept has been applied and tested around the world and is already used in organizations such as IBM, Ericsson, Deloitte, etc."

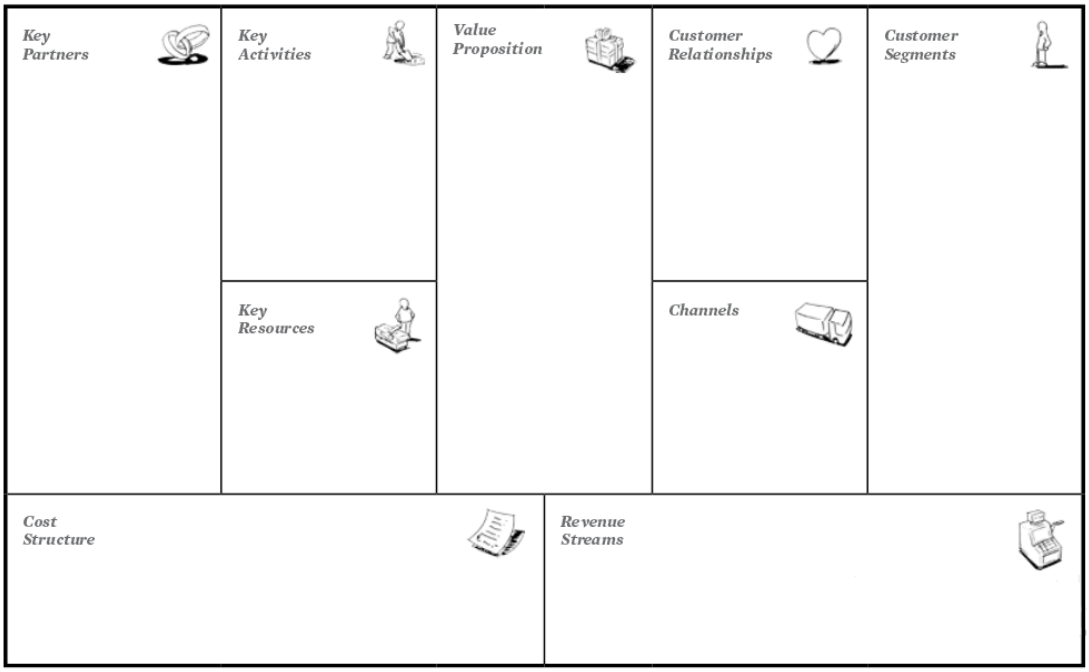

Table 1. The Business model canvas (Osterwalder & Pigneur 2012, 44)

As it shown in Table 1, the nine blocks include the key partners, key activities and resources, propositions, customer relationship and segments, channels, cost structure and revenue streams. In order to have a better understanding, the description of each block is shown below. According to Osterwalder and Pigneur's (2009) book "Business Model Generation", we described the following nine blocks:

- Customer segment – a block of targeting the customer groups that a company wants to reach based on their needs, common behavior and other aspects. It helps to better satisfy the customers. In this block, a company decides which of the customer segments is important and need to be included and which should be ignored so that a business model will be designed around a clear understanding of specific customer needs. Sometimes, customer' groups might be separated if they are distributed through different channels, have different relationships and profit abilities and so on.

- Value proposition – a collection of products and/or services that allows to satisfy the requirements of a specific customer segment. A value proposition is created through the mix of different elements, such as price, design or special offers. For example, there might be entirely new types of customer needs because of new technologies or improving service performance, offering similar value at a lower price or creating individual customer service in mass customization. Helping customers to reduce costs or risks is also a way to create value.
- Channels – a connection between the value proposition and customer segmentation. In other words, it is a way of delivering products or service to a special customer group by communication, distribution and sales. There are four types of channels: direct or indirect, as well as the partner's or one's own channel. At the same time, there are five channel phases: awareness, evaluation, purchase, delivery and the after sale phase. Finding out the right way of purchasing the value is the key of the value proposition to the market.
- Customer relationship – describes types of relationship strategies with each customer segment that helps to gain new customers and keep them in a long-term relationship as well as increase the sales. To maintain a long-term customer relationship might help a personal assistant, self-service or automated service. Moreover, the creation of online communities or co-creation initiatives have become a very popular method to keep successful relationship with the customers.
- Revenue Streams – a block where a company finds out how much each customer segment is willing to pay, how they prefer to pay and how revenue streams correlate with the overall revenue. In other words, it represents the cash, which a company generates from the customer segments in different ways, such as fixed prices, bargaining, market or volume dependent, etc. In a business model there can be two types of revenue streams that are results of one-time payments or ongoing payments. The most common way to generate revenue streams is an assets sale, where a customer gets the ownership rights. There are also the usage free type where a customer pays more for an additional service and subscription fees where a customer receives continual

access to the service. Other ways of revenue streams are lending, licensing, advertising and brokerage fees.

- Key resources – all activities that are needed in order to make a business model work. The resources allow creating value and satisfying each customer segment, and, as a result, earn revenues and reach the market. Different key resources, such as physical, intellectual, financial or human can be applied depending on the type of the business model.
- Key activities – the most important things that a company should do in order to make a business model work. Key activities also depend on the type of the business model, and they can be categorized into three groups. First, problem solving activities are about a new solution that is coming to solve an individual problem. Secondly, production where the key activities are focused on designing, producing and delivering a product. The last one is a platform (network) where the main goal is on building a strong platform as a brand.
- Key partnership – a connection with the key suppliers and partners that makes a company operate successfully and reduces risks. There are four main types of key partnership, such as strategic alliances between non-competitors, cooperation between the competitors, joint ventures and buyer-supplier relationships. The main issues are to reducing risks in a competitive market, allocating resources and activities or acquiring resources as knowledge or licenses from other companies.
- Cost structure – a block of determined incurred costs that a company has by using a particular business model. When a company finds out its key resources, activities and partners, the cost can be easily calculated. Every company tries to minimize its costs and find the most suitable structure for that. Cost-driving and value-driving are the most popular classes in the cost structure block. A cost-driven model focuses on reducing costs wherever possible whereas a value-driven strategy aims at creating a strong value fundament. Moreover, the cost structure can be characterized by fixed or variable costs, economies of scale and/or economies of scope.

As a result, Osterwalder's Canvas model is organized in a very simple way and allows us to see the whole picture of the business processes, their key points

and places for improvements. However, the model has no specifications, and it is universal for any kinds of business. As we wanted to focus deeper, we analyzed two extra models. Canvas can be used as a main framework after finding out the best option of a business model.

2.3 Firm/NGO collaboration model

Another important point that should be taken into consideration is the cooperation of various companies, in particular international ones, with nongovernmental organizations (NGOs).Multinational enterprises (MNEs) might face various challenges when trying to enter or operate in the developing countries. They can team up and collaborate with NGOs in order to facilitate new modes of value creation. Various NGOs, like Amnesty international, GREENPEACE, Save the Children and others have started to play an important role in modern politics. Many NGOs are designed to address multiple issues and problems like: human rights violations, environmental degradation, hunger and improving world health care. Corporations and NGOs are developing more cooperation in order to create value and mutual benefits as well. Furthermore, such cooperation can provide MNEs access to resources, capabilities and competencies that will help to develop innovative business models. Cooperation and partnerships help companies to develop a response to problems that MNEs face in the developing countries: how to adapt an existing product or develop a new one, how to adapt services to the needs of the local communities, how to obtain information on the market and find ways and channels of distribution. (Dahan et al., 2010.)

Furthermore, in a study conducted by Doh, Oetzel, Yaziji and Dahan (2010, 328) a conceptualization was created that represents an extension of the business model in two ways:

- broaden the concept to incorporate cross-sector collaborations
- viewed business models as generators of social value

The idea of the study was to go beyond the traditional focus of business models on a single sector value creation where businesses can forge partnership and alliances with various nongovernmental organizations in order to work together to create new products and services, improve the

existing ones and create new value for the customers and clients.(Dahan et al. 2010.)

There is a large variety of definitions of what a business model is – "but a useful approach is to consider the concept as a representation of a firm's underlying core logic and strategic choices for creating and capturing value within a value network" (Shafer et al. 2005, 199-207). It is impossible to name any concept of business model a universal one, but all of them contain common definitional elements (Dahan et al. 2010, 328), which are highlighted below.

- Distinguish the concept of a business strategy from a business model. A strategy is a plan, a process for how to get from the current point to a desired future one, while a business model is a description of that state.
- As mentioned in the previous point, a business model is a description of a company's situation that includes its governance, structure, values, markets, value chain etc. A business model also includes a description of company's environment, political, social and economic context, customers, clients, suppliers and partners.
- A business model must make sense, and all of its elements should fit each other.
- It is believed that the variety of business models is limited and that they can be clustered, for example, the ones that are termed low-cost; open source; copycat; 'bricks and clicks' etc. (Dahan et al. 2010, 329.)

In this study, the authors stated that the main goal of the NGOs is value creation and its delivery, mostly the social one rather than economic. Moreover, the aim is to describe how various necessary costs and revenues are structured and managed. As mentioned earlier, the main goal of NGOs is to deliver value rather than make profit. However, these organizations are concerned with ways of balancing their needs of financial sources in order to sustain their operation and maximize the impact on the ground. It means that nongovernmental organizations are influenced by the same forces as companies and for-profit organizations when creating and designing their business models. Since we take a closer look at the alliance and partnership relationship of various NGOs and enterprises or other for-profit organizations,

we focus more on two dimension of value creation: economic and social. (Dahan et al., 2010.)

Dahan et al. (2010) have pointed out three basic scenarios of such cooperation and collaboration. These scenarios show how companies and nongovernmental organizations can redefine and further develop new models. The situations are illustrated in Figure 1. Each of them describes one of the possible scenarios:

1. No Collaboration. The case describes a situation where both an NGO and a corporation each has an operational business model. Both can carry out alone, and there is no need for collaboration.
2. Restructure/Redefine business model through collaboration. One or both parties have incomplete business models, since they rely on resources and capabilities that the company does not have or fully control. These models can only be realized through cooperation. By providing each other with access to resources, the parties can make each other's business models viable. Each business model remains distinct, but they are interdependent of each other and cannot succeed without the resources and capabilities of the other party.
3. Develop new business model through collaboration. This kind of a model is created and designed for a joint project of the two parties. Both parties contribute resources and gain benefits from the collaboration: for corporations – financial earning, for nongovernmental organizations – impactful social values. It enables both social and economic values to exist concurrently.

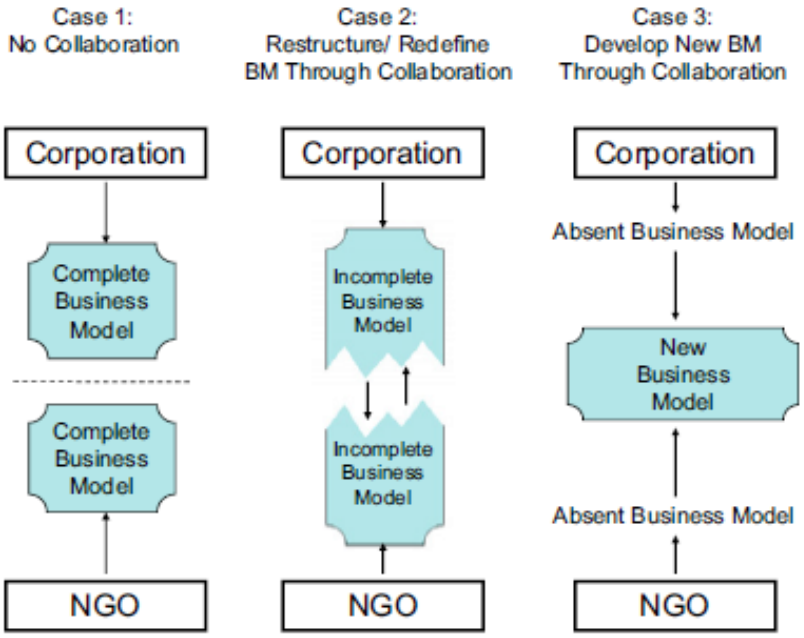

Figure 1. Possible scenarios of collaboration. (Dahan et al. 2010)

Further, in their research Dahan et al. (2010), describe examples of the contributions of corporations and nongovernmental organizations in various situations, such as market research, procurement, R&D, marketing and other. We will only briefly describe those examples in order to form an idea of how to act in different situation, how to establish partnerships and how to manage a company's welfare when entering or operating in the developing countries.

The developing countries' markets provide a fertile ground for opportunities, but they are also laden with some constraints on the companies that want to enter the market. The most usual way is adapting a company's current business model or creating a new one for this particular market, which in most cases involves redesigning the value delivery system, product features and price (Prahalad and Hart, 2002). In their research, Kogut and Zander (1992, 383-397) suggest that companies benefit from one of them by providing resources and capabilities that the other one does not possess. These capabilities allow companies to synthesize their resources in order to create

new applications from them and to be able to provide a response to the changing, unfamiliar and evolving environments of the developing markets.

In research, possible examples of a firm/NGO cooperation and co-creation in the developing markets are described as follows:

1. **Firm/NGO contributions to market research**. The majority of nongovernmental organizations that are dealing with various problems in the developing countries have "on-the-ground" facilities and employees that have experience and knowledge of culture, living conditions and infrastructure in the country (Prahald and Hard, 2002). These organizations are usually aware of the social and economic needs of the population and stay in touch with social trends as well as keep track on further issues that might arise. The knowledge makes it possible to identify potential markets and products for the market. Cooperation and collaboration with these organizations allow companies and firms to develop a suitable product or service that is adapted to the needs of the population. (Dahan et al., 2010.) This example perfectly suits the second case described above.
2. **Firm/NGO contributions to product R&D.** R&D can be driven by either a product, technology (a product is created even before the market is identified, i.e. nanotechnologies) or the market (a product is developed as a response for certain needs). In NGO/firm collaboration, companies are involved in so called "upstream R&D", such as creating the actual product, while the NGO focuses on the market part of the process, identifying needs and receiving feedback on the options. It is done either via knowledge of the local needs or via marketing tests in a smaller market in order to fine-tune the product before the official launch. In the majority of cases, companies have expertise in R&D generally, they have the resources and technical capabilities and are able to construct prototype products quickly and efficiently, while nonprofit organizations have a vast knowledge of the local market and needs, as well as are able to establish links and connections with the local communities and even authorities. (Dahan et al., 2010.)
3. **Firm/NGO contributions to procurement and production.** According to Dahan et al. (2010, 333), "Successful business models for

lower income markets are usually based on low-cost, low-margin, high volume patterns: legitimacy with suppliers and the buying power to secure high purchase volumes and multiple product purchases can be critical to such low-cost business models." In such terms, corporations tend to have all the necessary skills and resources, have a good buying power and relationship with global suppliers, that are able to produce supplies in larger quantities and more cheaply than the local providers. In their turn, NGOs are capable of helping with procurement and providing low-cost labor. In such situations, NGOs can manage sourcing and developing local labor much better than their firm-partner can.

4. **Firm/NGO contribution to distribution**. Firms and nonprofit organizations can complement each other's distribution capabilities. While MNEs can provide a global distribution network, the NGOs can provide access to local distribution systems, where they have trustful on-going relationships with local stakeholders (Oetzel and Doh, 2009, 108-120). Products that are created for developing markets are usually distributed in bundles with an array of complementary services, like technical and financial services, that are critical to the success of the product. Providing this product/service bundle on the ground can be a shared responsibility between the firms and NGOs (Dahan et al.,2010).
5. **Firm/NGO contribution to new business model development.** Beyond the point where organizations support the business models of each other project and contributions within the value chain activities, the most innovative developments are multiple-organizations, cross-sector partnerships, often involving national governments, trans-governmental organizations, firms and NGOs. This is a good example of the third case, where a complex business model is jointly created, that is co-imagined and co-created by both for-profit and nonprofit organizations. In all these models, firms and NGOs, as well as other partners bring together different resources, experience, knowledge and capabilities that allow complex public-private partnerships to create systems of value delivery that would be impossible otherwise. (Dahan et al., 2010.)

The aim of the research conducted is to show how important it is to create value. The goal of the companies is to gain trust from local population, where large corporation are viewed with skepticism and suspicion. The collaboration of firms and NGOs, resulting in lowering costs, reaching new customers, fine-tuning the distribution channels and even filling the institutional gaps via creating and offering new products and services, these collaborative initiatives provide social and economic value that may be very difficult to disaggregate.

Corporate-NGO partnership holds a great potential for companies that seek to break free from constraints in adapting business models and creating new ones. Companies, going further beyond a typical range of business partners can overcome institutional constraints, open up new opportunities and approach current problems from different angle. Furthermore, firms can develop their strategies as well as partner with NGOs, develop the necessary capabilities that may lead to competitive advantage for the firm. (Pearce and Doh, 2005, 30-39.)

To sum up, the authors in their research introduced an extension of the business model concept in two ways: business models are created through cross-sector partnership (firm and NGO collaboration cases two and three, see Figure 1), and business model is to generate and deliver economic value as well as social one.

2.4 Social Business Model

The third model used in this study is a social business model developed by the Grameen Bank. The bank was founded in 1976 and created nearly 30 new businesses to alleviate poverty. The expertise of the bank is in the sphere of formulating various business models, which requires new value propositions, as well as constellation and profit equations that encourage companies to experiment with their current or future business models and innovate them to create a response to the changing economic and social environment of the world.

The on-going experience of the Grameen group in building companies that focus on smoothing the gap between the rich and the poor has led to the emergence of the “social business” concept.

Corporate social responsibility (CSR) has recently gained more and more attention from various large companies and multinational enterprises. However, the maximization of shareholders' value is still dominating in the capitalist systems, and shifting to the social aspect remains problematic. For the majority of enterprises financial profit remains the ultimate and the only bottom line. (Yunus et al, 2010.)

According to Burke and Longsdon (1996, 495-502), CSR projects can pay off in both financial and social ways. Many companies have started to take a closer look at their roles and consider them a part of the social environment. The companies have started to implement CSR practices, and broadened them beyond the required minimum, which has led to an increase in the number of "social businesses" (Wartick and Cochran, 1985). Many of the companies have collaborated with the Grameen group in social business projects, and others have used the experience in order to help them achieve their goals. (Yunus et al, 2010.)

According to research (Yunus et al, 2010, 310-312), there are currently two extreme types of corporate bodies in the modern capitalist system:

- Profit-maximizing businesses (create shareholder value)
- Not-for-profit organizations (increase the social value)

"Social businesses" take a part from both of the extremes – they have to manage the financial situation (for example, cover the costs of operations, capital return, etc.), but these companies are driven by their cause, not by profit. "Social businesses" are in the lower right-hand square in Figure 2 – businesses have an impact on the world and they are able to sustain themselves and remain self-sufficient. (Yunus et al, 2010.)

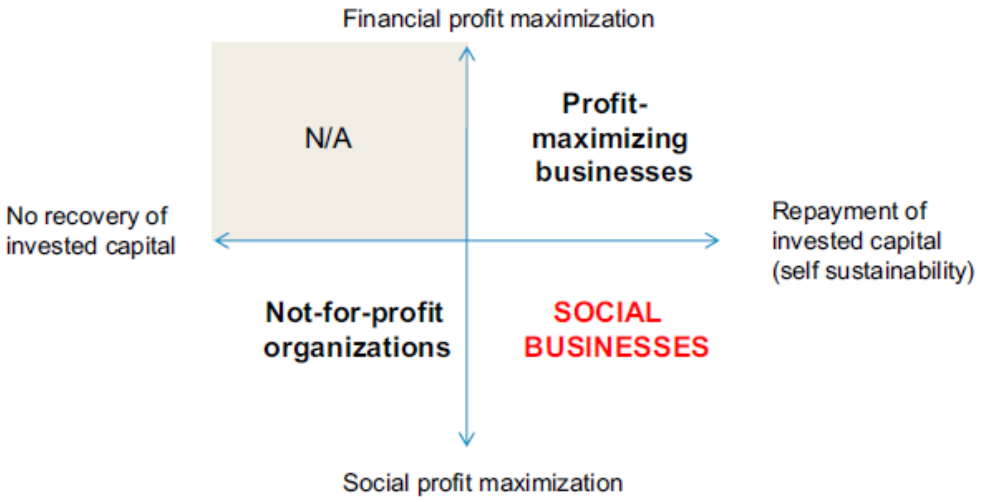

Figure 2. For-profit businesses and non-profit organizations vs. "social businesses"

As one can see, "social businesses" are very similar to regular companies with products, customers, markets, losses and revenues. The concept is similar to an NGO, but, while NGOs are not designed to recover costs from the operations and are forced to raise money from various sources, "social businesses" are no-loss, no-dividend companies that are able to stay self-sustained, sell products or services as well as repay the investments to the owners, with a social mission as its primary goal. Furthermore, "social businesses" rely on the investments at the beginning of the development. (Mair and Marti, 2006.)

The authors also point out that "social businesses" are the new forms of businesses and they are somewhere in between a non-profit and a for-profit organizations. Another question, which plays an important role in the thesis, is related to why people invest money in such social ventures and "businesses". All around the globe people are donating billions to charity year after year. However, as we have already described above, in "social businesses" the investors get their money back. Furthermore, the investors are also the owners of the company and they design the course of actions, giving them flexibility and allowing them to solve social problems in a creative way. (Yunus et al, 2010.)

The concept has currently gained much more attention. There is still no consensus on the definition of the "social business model", but there are three elements usually distinguished:

- the product/service for the customer
- the organizational structure of the company
- the revenue model

Companies experiment with the models as well as various researches focus only on some components, like the revenue model (Chesbrough and Rosenbloom, 2002), but it is recommended to use all three components (Yunus et al, 2010, 312), as it is shown in Figure 3.

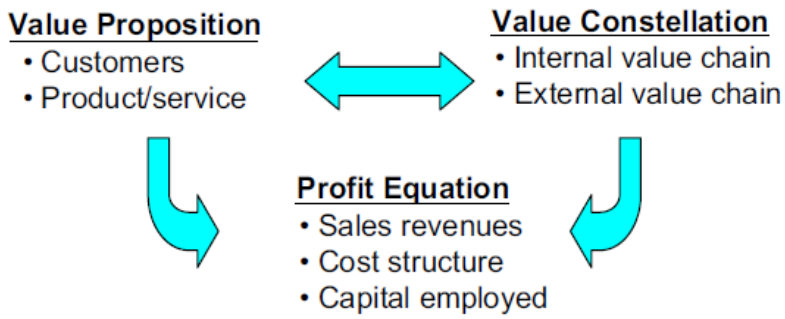

Figure 3. Thee component collaboration model

This model helps to answers the questions:

- value proposition – "Who are our customers? What our product/service?"
- value constellation – "How do we deliver the product/service to our customers?"

- profit equation – “How does a company generate value from the revenue? How a company’s costs are structured? What capital is involved?”

The concept shows a picture of a company and how it generates profit. Nevertheless, as the authors have already mentioned, the “social business” model cannot simply replace the for-profit business model: new value propositions and new value constellations have to blend into a positive profit equation. Drawing from the experience of the Grameen group the authors made adjustment that are needed to switch from a traditional model to the social one. The first one is the specification of the targeted stakeholders - the value proposition and the constellation are expanded to encompass all stakeholders. The second is the definition of desired social profits via a comprehensive eco-system view. The last one is that the economic profit equation targets not the financial profit maximization, but the full recovery of cost and capital. The adjustments are shown in Figure 4. (Yunus et al, 2010.)

Thou the authors have mostly focused on the social impact of the businesses; the model can also be applied to environmental issues, what is important for the topic of the thesis research. The concept of the “social business” concerns both corporations wishing to adapt CSR policies and entrepreneurs that would like to create a social business. The concept of the social business is still under development and the existing one should be considered as the first step. Further experiments and research are needed for the model to become a self-sufficient and self-sustained type of business.

Furthermore, social businesses are not engaged into the market competitions. As mentioned above, there objectives are social, meaning they can cooperate and collaborate with each other and even learn and adapt the best practices. The business are hardly to be seen as intellectual property and can be copied by others and adapted globally to have a greater social impact on the world. Moreover, the authors also point out that social businesses can play a prominent role within various corporations as “learning labs” to improve the core operations of the company (Yunus et al, 2010).

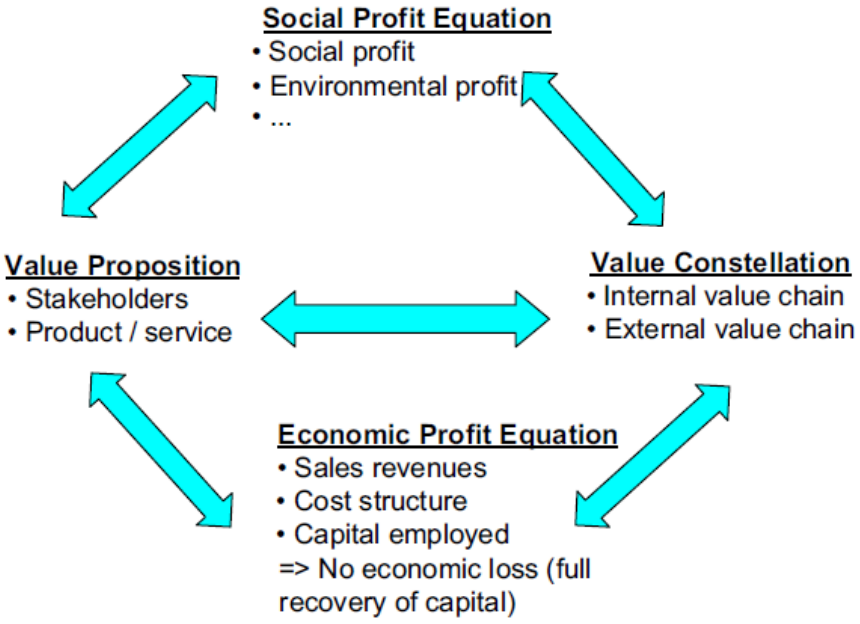

Figure 4. Four-component social business model

2.5 The Elements of Chosen Business Model for Adoptation: Functions and Requirements

Nowadays, the term "business model" is widely used by the managers, business consultants and business commentators, often it can be heard over the radio or seen on television programs that are aiming the general audience. The concept of the business model is tightly connected with the strategy. (Baden-Fuller and Morgan, 2010).

The authors have already given some definitions of what the business model is by Osterwalder (2012) and Baden-Fuller and Morgan (2010, 157). However, the authors see the concept from their own point of view, that is why there is no universal definition. However, Chesbrough and Rosenbloom (2002) in their research suggested that a business model should fulfill the following functions:

- Articulates the value proposition

- Design and specify the revenue generating mechanism and identify a segment of a market
- Define the value chain structure in order to distribute goods and services (both the main offering and complementary ones) to customers
- Define the ways the company will be paid for their goods and services
- Estimates the cost structure and profit potential
- Describes the position of a company within the value network linking suppliers and customers
- Identify competitors and possible partners
- Create the strategy that will help a company to stay competitive and profitable

These are the requirements that the authors have used in order to develop the business model suitable for the proposed company in Russia, Saint-Petersburg. Furthermore, Chesbrough (2010) points out the importance of the innovations and how each model should be shaped according to the changing environment, customer demands and the market. The data collected helps to create the company's identity.

The authors have developed a number of requirements and features the proposed company should fulfill in order to enter the market and sustain. The requirements are based on a variety of factors, both internal and external. The sources of the data are personal observations, scanning of the secondary data (i.e. recent research and articles on the topic) and answers the authors received from interviewing the representatives of various companies in Russia and Finland. Following is the list of the requirements:

- Social impact. This is the number one priority of the company, as the project is cause-driven. The underlining goal of the proposed company is to change the mentality of the people and make them more aware of the ecological problems and make them get acquainted to recycling in order to lower the harmful impact on the environment as well as help them think about the future generations and not only about their current desires and needs.
- Identify key activities. Key activities are the most important thing the proposed company should do in order to keep the business

running. Deriving from the goals stated in the first point, the company should focus on problem solving activities and create a sustainable and recognized brand in order to attract both new customers and partners. (Osterwalder and Pigneur's, 2009).

- Positive profit equation. Following the first point, the company will focus on delivering social values rather than maximizing its profit. After some research conducted, as well as the Grameen group experience (Yunus et al., 2010), the authors can clearly see that the company would require investments. It means that the investors will also own the company that is why it is important to find investors from the same business field or a complementary one (i.e. smelters, logistics companies, breweries, etc.). Turning the proposed company into an NGO will force it to cover its cost of operations from donations, what assumingly will put the whole venture at risk.
- Cross-company collaboration. Companies face various barriers and difficulties when trying to enter and operate in the developing countries. That is why they can collaborate with non-governmental organizations to facilitate new business model. Furthermore, developing partnership relations can help create value and mutual benefits. Combining the company's assets and resources with NGOs knowledge of the market helps the company to adapt an existing product or develop a new one. (Dahan et al., 2010.)
- Customer-orientated business. Develop relationship strategies with each customer segment. This will help to gain new customer and keep them in a long-term relationship, as well as develop loyalty to the company. Moreover, such practices has a positive impact on the profit generation mechanism. Furthermore, online communities or co-creation initiatives can also contribute to successful relationship with the customers. (Osterwalder and Pigneur's, 2009).
- The last, but not the least is experience sharing. As the proposed company's main goal is to change the mentality, the more willing the company to share its experience and best practices, the higher the impact the company will have. (Yunus et al., 2010).

These are the minimal and the most important requirements needed for the company to sustain successful. Moreover, these requirements justify the choice of the business models for the theoretical framework. The authors have stopped at three studies of the business models. Some of them describe only one, while others provide data of variations of the business models in the same research (i.e. MNE-NGO 3 types of collaboration, see Figure 3). Each of the models have its own value and help the authors to design the model suitable for the proposed company.

The first model the authors have used is the Business model canvas by Osterwalder and Pigneur (2012, 44). The model is perfect for a new startup company – it is simple, intuitive and universal, meaning that it can be applied to any business. The canvas consist of nine basic blocks that allow us to design, improve or innovate any kind of business model. Putting all block on a single poster makes it possible to see and understand all process, as well as experiment with the model, shape it to fit the needs and create response to the issues that might arise. One can see the relationship between the segments. This model is a perfect starting point. By adding ideas to the poster, correcting them, and going through them repeatedly, the authors are able to see the connection, the issues and blank point in the model. Working with the Osterwalder's model allows the authors to create a carcass, a skeleton of the proposed company. It is not yet the final model, but the authors have an idea of what should be the main concern, key activities, how to organize the operation and cover the costs.

Having the basics that are needed to design the model for the proposed company, the authors can move further and make the model more complex in a manner that it will be able to fulfill the main goal of the company – social impact. The choice of the model needed falls to "social business model" concept by Yunus et al. (2010). The model perfectly suits the needs of the proposed company in many ways: social impact, cross-company collaboration and experience sharing. Basing on the research and the Grameen group experience, the authors can adjust the existing model created with canvas by using the four-component social business model framework (see Figure 4). Having designed a positive profit equation the authors can blend in the value proposition and value constellations into it. The authors must also keep in

mind that when applying the “social business model” concept one should focus on cost recovery and the profit maximization.

The last model the authors have chosen is the MNE/NGO collaboration model. The model focuses on various partnership relations between companies and non-governmental organization where both can gain mutual benefits and help each other achieve its goals. The research by Dahan et al. (2010) shows how MNEs and NGOs can complement each other business model and create a completely new model (see Figure 3). There are three types of cooperation; the authors will focuses on the second and third type of cooperation, since there are many small non-governmental organizations in Saint-Petersburg, and both “restructure/redefine business model through collaboration” and “develop new business model through collaboration” options are suitable for the case. Beyond the support of business models of each other, companies can also contribute to the value chain activities and innovative development. Such partnership can prove to be beneficial for all parties involved in the process: the company itself (as a service provide), nongovernmental organizations (labor providers, distribution channels, complementary goods and services provider), local authorities and the city’s local government (city benefits, better ecological situation, cleaner streets, etc.) and citizens.

Taking into consideration how many factors affect the model, the authors try to keep it simple yet detailed, so it can stay flexible in order to respond quickly to both internal and external stimulus.

In closing, the authors have described the guidelines of how they are going to create the business model for the proposed company and what models they are referring to. As the authors have already mentioned, the base model is the canvas model, the rest two models serve as modules that are added to the poster in order to create a sustainable and self-sufficient business model. This approach will allow the authors to cover all the aspect, design a model, that can resist stress, and be agile enough to avoid possible issues or solve them quickly. The business model in all details is described below.

3 RESEARCH METHOD AND DESIGN

The methodology was built according to the research “onion” (Sanders et al. 2008, 108) that is shown in Figure 5. The first outer layer consists of four possible philosophies that can be adopted. They are positivism, realism, interpretivism and pragmatism. Each philosophy is observed from the perspectives of ontology, epistemology, axiology and data collection techniques used. The most suitable research philosophy in this particular case is realism. This philosophy allows us to approach the phenomenon from the objective point of view, yet it is interpreted through social conditioning, that is the best choice for the proposed company. From the epistemological level of philosophy, pragmatism provides larger variety and flexibility, but realism can also be applied since it is context dependable. Since social factors are an important part of research, values and believes, in the same way as cultural aspects and upbringing have a major impact on research, realism is the best choice for research from the axiology point of view. Concerning data collection techniques, the authors were free to choose the best suitable method for this study. The choice of methods and strategies is described below.

Following the deeper layers of Saunders et al. (2008) “The research onion”, the authors chose the induction approach because it is used in research for formulating a theory based on the collected data. The process goes from specific to general because a better understanding of the nature of the problem is needed.

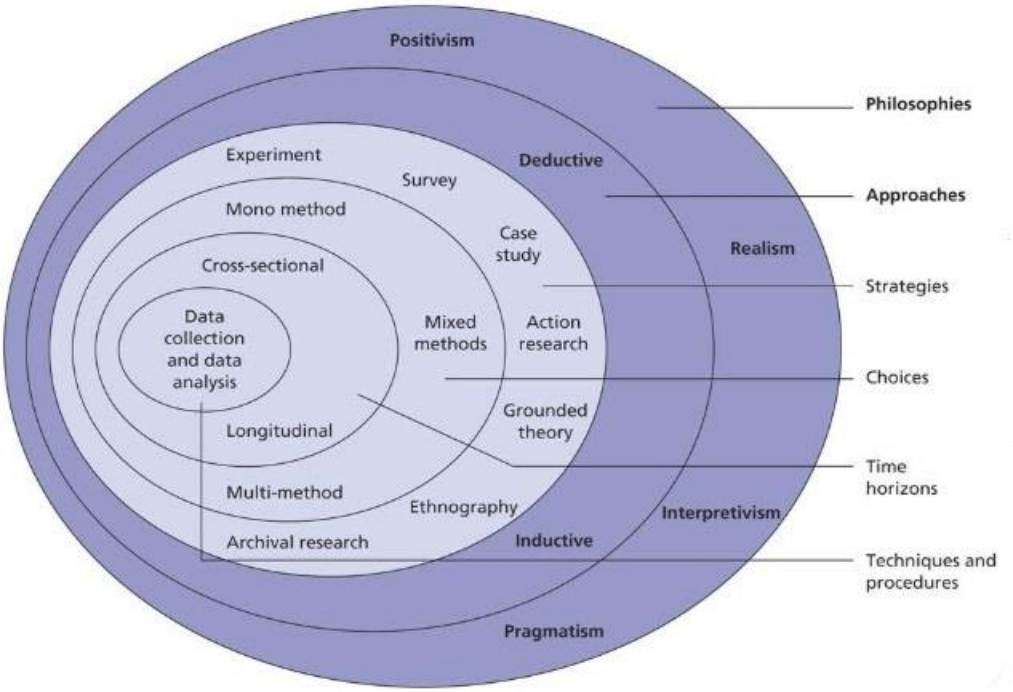

Figure 5. The research "onion" (Sanders et al. 2008, 108)

That is why the most suitable strategy in the present study was a survey. Surveys are very common in business and management research and help to answer questions, such as "what", "who", "where" and "how". It allows to collect large amount of data from different samples and makes it easy to compare, for example, the business processes in Finland and Russia. Of course, the survey strategy is usually associated with the deductive approach, but it was assumed that with the help of semi-structured interviews it would be possible find out clearly how the business process is organized in the Russian aluminum can industry as well as examine the Finnish business model. Concerning the time horizon and research design, cross-sectional was the one used in the research. The phenomenon was observed in a particular time without manipulating the study environment. Moreover, this design made it possible to compare many variables at the same time.

The study focused on analyzing the business models and existing processes in Russia. At the same time, social aspects were taken into consideration because the idea of implementing the recycling model does not work if citizens do not want to use it. As a result, it was decided that social behavior should be considered. In order to have a better understanding of the research problem the authors needed to choose the research approach. Qualitative methods seemed to be the best option in the proposed company's case because the phenomenon was new and had to be explained. Qualitative research helps to answer "what" questions, and thus was applied to this paper (Kananen 2011, 37). Of course, this type of research might be imprecise because it does not have any specific numerical statistics. When using qualitative methods, the data is generated by words, rather than by numbers (Patton M. and Cochran M. 2002, 2).

3.1 Data analyses

In order to answer the research question, the authors started from the analyses of the secondary data. In the survey research strategy, secondary data is frequently used. Saunders et al. (2006) have grouped the most typical ways

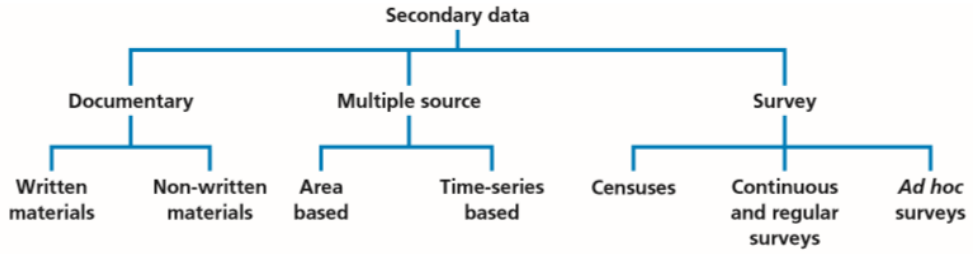

Figure 6. The secondary data (Sanders et al. 2006, 259)

of collecting secondary data into three groups. As one can see in Figure 6, there are documentary, multiple sources and survey categories.

Documentary and multiple sources were used in the present study. On the one hand, in documentary secondary data, the written materials, such as business

journals and magazines help to analyze the current situation in the Russian recycling environment. Surprisingly, the authors discovered that a similar business idea was launched in Moscow in 2004 and that it failed in 2009. The previous experience shows how German recycling system was adopted to the Russian market, what went wrong and how people reacted to the implementation of the recycling system. On the other hand, the organizational database of PALPA makes it possible to see how the business is organized in Finland. Multiple sources help the authors to analyze governmental publications, journals and books. Most of these articles focus on environmental policies and governmental "green initiatives" in Russia, in particular the ones concerning the aluminum recycling business.

Having the secondary data collected, the authors started creating the structure and content of the interviews. The first step was to identify what kind of information needed to be found and who the interviewees were. This was structured into three segments as shown below in Table 2:

Table 2. Interview segments

Segments	Company	Interviewee
One of the biggest Russian company that provides drinks in aluminum cans	Coca-Cola (Hellenic group)	Production Department Engineer
Company - Provider of aluminum cans	REXAM	Purchasing assistant
Finnish recycling company	PALPA	Administrative manager

The primary data was collected with the help of semi-structured interviews. It allowed the authors to have a list of topics and questions that should be covered. However, one must keep in mind that the questions varied from one interview to another. In this case, in order to obtain reliable data two companies were interviewed: REXAM and Coca-Cola, which are located in Russia and deal with aluminum cans. In these interviews, the authors tried to track the route of aluminum cans from the aluminum processors to the end-product users' factories. The interview questions for REXAM and Coca-Cola were broken down into three main topics that were:

- Sources of aluminum delivery;
- Product package variety;
- "Green" programs.

Having data collected from the two interviews, the authors conducted the last interview for PALPA in order to understand how the Finnish company ran the business. The interview included questions concerning the establishment of the company, the organizational process of collecting, transporting and recycling cans as well as the profitability and financial support strategy.

A semi-structured interview allows skipping some questions in order to give a specific organizational context, which is encountered in relation to the research topic (Saunders et al. 2008, 320). Because of the non-standardized structure of the interviews, they are usually carried out either in a face-to-face format or in a electronic format in form of interviewing via email. If we look at research categories, semi-structured interviews are frequently used in explanatory research. The thesis focused more on finding out and explaining the processes rather than exploring something new.

4 RESULTS AND EMPIRICAL ANALYSIS

4.1 The aluminum supply chains (Based on the interview results)

The results are based on the collected primary data. The authors interviewed three people from different segments. The first person was Dmitriy Ezhov, who works as Production Department Engineer at Coca-Cola Hellenic's group. An important note was that Coca-Cola Company is not involved in bottling process. Almost in all countries Coca-Cola is bottled and sold by the independent privileged partners that are called the bottling companies (Coca-Cola System, 2014). The Coca-Cola Hellenic group (CCHellenic) is the largest bottling partner in Russia. From the interview, the authors determined that CCHellenic gets the aluminum cans from REXAM Company (Dmitriy Ezhov, 2014). Moreover, Dmitriy said that "all beverage cans come to CCHellenic factories already with a Coca-Cola print on the cans". Therefore, the company is responsible only for bottling and transporting the final product. Coca-Cola Hellenic uses different types of bottling packages, which are aluminum cans, plastic and glass bottles and post-mix package. According to Dmitriy, "in 2014 only 9,9% of the total products were bottled in aluminum cans in Russia". As for the "green" programs, Coca-Cola is a very active company and has different types of eco-friendly programs. For example, "The second life of packaging" is a project where caps, cans, labels and paper are collected and "live their second live" as materials for children's creativity. Another project is "the Green Team" that focuses on cleaning up streets, squares and parks by the company's employees. As for Coca-Cola's aluminum recycling initiatives, "only defected or damaged during the production cans are sent back to the recycling operators" – said Dmitriy Ezhov (see Appendices 1).

The next interview was given by a Coca-Cola's supplier of the aluminum beverage cans. The company is called REXAM BCE and it is the largest manufacturer of an aluminum cans in Russia. The interviewee was German Chursin, who worked in REXAM as a purchasing assistant. From the interview the authors identified that "there are three processing plants that satisfy the demand for aluminum for Russian largest breweries and soft beverages companies, such as Efes, Baltika and Coca-Cola" (Chursin, 2014). German

said: “The biggest plant is located in Naro-Fominsk that is a capable of producing 1.1 billion 0.33 and 0.5 cans per year (2005). In addition, the Naro-Fominsk plant has lid-making department, which produces lids for all Rexam cans for the Russian and Eastern European markets”. (See the Appendices 2)

“The aluminum for cans and lids comes to the plant in form of aluminum coils from the aluminum supplier companies. Alcoa RUS, a Russian branch of Alcoa Inc, is a leading supplier of alumina and aluminum, which supplies 95% of total aluminum for Rexam. The other 5% are imported from Novelis and Hulamin companies”. (Chursin, 2014). This kind of aluminum has unusual properties that is used for special cans. Rexam plants do not perform recycling of any sort. All aluminum scrap left from can production process is sent back to the supplier for melting. (See the Appendices 2)

Having Coca-Cola Hellenic and Rexam BCE interviews, the authors created a scheme of the aluminum supply chain in Russia. The authors identified the supply chain of the aluminum industry is very wide and every organization has only one function in the chain. Figure 7 depicts the process that starts from the Russian aluminum company RUSAL, which is the world's largest producer of primary aluminum and alumina. Since RUSAL is not involved in the mining process, the authors considered that the company have many small suppliers,

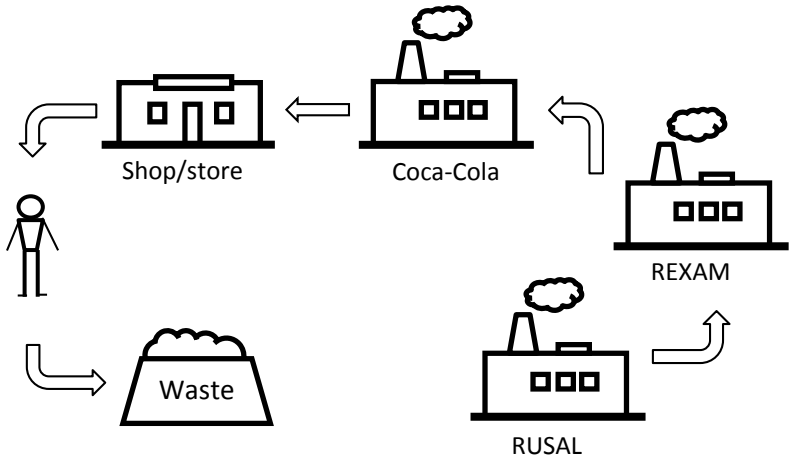

Figure 7. The aluminum life circle in Russia

such as smelting factories. The scheme represents the “big players” that have a huge impact on the aluminum industry.

Figure 7 shows the life cycle of aluminum in Russia. Being the largest supplier of aluminum in Russia, RUSAL supplies aluminum to REXAM in form of aluminum coils. From the received material, REXAM produces beverage cans and sells them to the biggest breweries and soft drink companies, such as Efes, Baltika and, in the proposed company’s case, Coca-Cola. Coca-Cola Hellenic bottles the cans and transport the final product to the retail shops. From the store’s shelf cans go to the customers. After the consumption, empty cans are dumped and later transported to landfills, only some of them are recycled.

The last interview was given by PALPA. As the authors have already mentioned in the introduction, PALPA is the company responsible for recycling aluminum cans, one-way glass bottles and PET-bottles. Furthermore, Finland is one of the leading countries in Europe in aluminum recycling. There was no doubt the authors needed to interview the company. PALPA’s representative covered all question in a very detailed form, as well as provided extra data on the company’s business model and its core operations.

Taking into consideration the proximity of Finland and Russia, its long lasting relationship in various fields, the Finnish business model of aluminum recycling is the starting point for designing the proposed company’s model. The authors analyzed the Finnish model and determined the key factors. Moreover, the revenue model was also taken into consideration.

PALPA was established in 1996 for recycling aluminum cans by retail groups (Kesko, S-group, Suomen Lähikauppa), breweries (Sinebrychoff, Hartwall, Olvi) and national alcohol monopoly company Alko. According to These companies jointly own the company. According to Tommi Vihavainen (2014, see Apendices 2) “[the companies] form a company board and steer the company as normally company board does. They represent parties who distribute packages to market and other hand those who collect the empty packages (return points) and all the important decisions for PALPA are agreed together.”

Another important thing the authors took into consideration was that PALPA is a non-governmental organization (Tommi Vihavainen, 2014). The authors have already covered the description of an NGO, as well as its core activities and goals in the theoretical part of the thesis. Basing on the answers received from the company, the authors must also point out that PALPA is different from organizations alike, and it is not financed by the donations. The company generates profit from charging the companies that are involved into the recycling system.

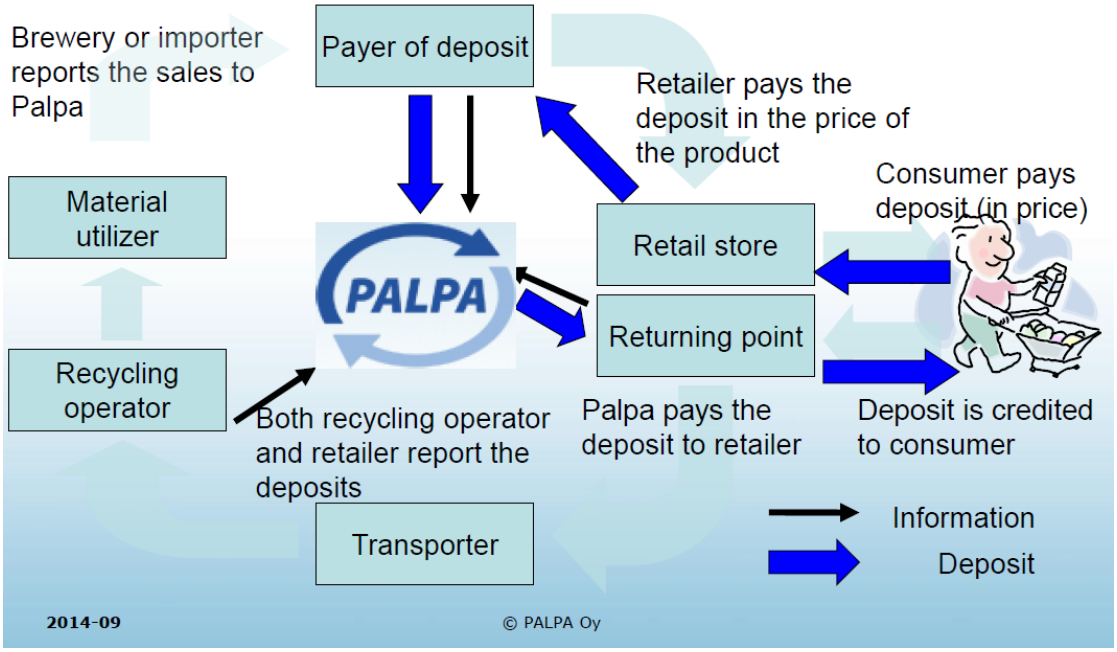

Figure 8. Material, information and money flow of the deposit

Figure 8 shows the material, information and money flow of the deposit. In order to identify the business model behind the scheme the authors have described the material and information, and money flow separately.

First, the authors tried to answer the questions: where does aluminum come from, how ready cans are managed and who is responsible for the recycling itself? In order to answer the questions, the authors had to track the material flow:

- Breweries and retail companies fill packages with beverages and send them to retail stores
- Consumers buy the product. After the consumption the empty package is returned to collection points
- Empty packages are transported to recycling operated, where they recycled (i.e. smelted into aluminum coils)
- Aluminum coils are send to the material utilizer
- At the factories the coils are processed into cans
- Cans are delivered to breweries and retail groups

In this chain PALPA serves as the administrative office. Everything is outsourced. PALPA does not own any operational assets. The company buys services and pays compensations to parties doing the operations.

As mentioned above, PALPA is a non-governmental company, meaning that it is not a for-profit organization. Following is the money flow of the deposit:

- Retailer pays the deposit to retail groups and breweries that is included in the price of the product
- Consumer pays the deposit in the price of the product
- The retailer credits deposit to consumer upon returning of the empty package
- The retailer send information on the deposit returns to PALPA
- PALPA pays the deposit to the retailer
- Breweries and retail groups report to PALPA on sold products and pay the deposit to PALPA

PALPA collects payments from the retailer groups and the breweries as recycling fees. As it is seen from the money flow, the recycling fee are used to cover the costs of the operations. However, besides recycling fee, PALPA also sells the collected material (aluminum, PET-plastic, glass) to cover the operational costs. This is an important point for the proposed company, since it is planned to be a social business company, meaning that in case the deposit flow is a closed cycle, the company is forced to generate profit from other activities apart from the core ones.

The last point the authors got from the interview is why the companies are willing to join the common system – the beverage package tax. By joining the recycling system a brewing company or a retail group (that distributes packages to market) can avoid the tax (currently 0, 51 euro per liter). As long as costs of recycling system are lower than the tax, the companies consider it worth joining the system. However, this factor has to be negotiated with both local and federal government in Russia.

4.2 Proposed business model (Based on Empirical data)

The data generated from interview with PALPA is a starting point to designing the proposed company's business model. Following to the Osterwalder's instructions, the authors have designed the canvas (see the Appendices 5).

1. Customer segment

The first block includes the customer segmentation. In other words, it is about the customer groups that the proposed company wants to reach and serve. The priority customer group is the payers of the deposit, such as breweries, soft drink companies and importers. As a business model is created for Saint Petersburg, the authors found out a list of the most important companies that should be included. The largest breweries in Saint Petersburg are Baltika Brewery as part of the Carlsberg group and Heineken Brewery. The largest soft drink companies are Coca-Cola Hellenic and PepsiCo. From this customer segment, the proposed company gets profit only from the recycling fees. As for the deposit fee, the customer group pays it to the proposed company but then it returns to them. In order to sustain, the company should generate some profit as well. That is way the second customer group are the material utilizers (aluminum utilizers). The returned cans belong to the proposed company and after the cans are returned, transported and melted into coils, the coils are sold to the material utilizers. Thus, the proposed company has two customer groups: the deposit payers and the material utilizers.

2. Value proposition

The second block is about the value proposition. It is also about the unique features and reasons why the customers should choose the proposed company.

In order to satisfy the priority customer group, the proposed company provides tax benefits and the reduction of costs. Another major value that the proposed company brings is the waste reduction and the improvement of the ecological situation. Moreover, the proposed company uses the highest European standards in designing and carrying out its operations. As for the material utilizer group, the factories get the cheapest aluminum material available, thus saving up to 75% of the material costs.

3. Channels

The third block is about the channels. It describes how the proposed company brings its values to the customer segments. Primarily, the authors used an indirect method through the partner's channels. In order to increase the awareness, the proposed company relies heavily on the governmental support. Russian government plays an important role in encouraging breweries, soft drink companies and retailers to join the recycling system. As it has been described in the PALPA's case, the government can provide a lower tax. Another way is a publicity of recycling statistics so that the customers can evaluate the value propositions. As for purchase phase, the proposed company does not sell any product or service for the primary group, the proposed company provides only the tax benefits. The second group - aluminum utilizer get the coil directly from the recycling operators and smelters, the proposed company only manages the orders. The last but not least, the proposed company delivers an eco-image that also shows our value propositions.

4. Customer relationship

In this block, the authors clarifies and described what kind of relationship the proposed company wants to establish with each customer. From the customer segment block, one knows that the company has two types of customers: aluminum utilizers that buy coil from us and deposit payers, such as importers and breweries.

In the first case, the company relies on the traditional customer-vendor relationship. The company sells coil to any material utilizer that requires it for their operations.

In the second case, the company has to establish a different type of relationship that goes beyond the traditional one. Since the competing retail groups and breweries jointly own the company, they need to co-create the value together. The decisions made must add value to all involved companies and not to the selected ones solely.

In this block the authors have also used elements of the MNE/NGO collaboration model by Dahan et al. (2010), where a new business model is created through the collaboration for a joint project (see Figure 3). All involved companies contribute resources and gain both financial and social benefits from the collaboration. In the proposed company case, retail groups and breweries invest money in the company. In return, the proposed company negotiates tax benefits with the government. The more companies are involved the higher will be the social impact. As the authors have already mentioned, the decision are to be made together in order to assure that all companies share the same goals and values in the project.

5. Revenue stream

In this block, the authors covered how the proposed company generates profit from the customer segments. At first, the authors clarified for what the customers are willing to pay. Second, the authors identified what pricing mechanism are used for the revenue streams. Moreover, there are two types of mechanism mentioned in the theoretical framework part: fixed and dynamic pricing.

In case of material utilizer, the proposed company maintains the traditional market approach of asset sales. The customers pay for the aluminum coil and are free to use it anyway they want. The prices on the product are dynamic and depend on the current price of aluminum on the market.

In case of the deposit payers, the company applies usage fees, such as recycling and operational fees. As long as a company is a part of the recycling system, it pays the fee and retains tax benefits. As for the mechanism, deposit is a fixed one. The price depends on the value proposition features and are negotiated jointly by owning companies.

6. Key resources

In this block, the authors described the most important resources that are required to run the business and allow the proposed company to reach its key customers and maintain the long lasting relationship with them. Since the company acts like a social business, the majority of supportive activities, such as package collection, logistics and waste processing are outsourced, the company focuses on the its core activities – the recycling system. The company relies heavily on the investments by the owning companies at the start and later on the governmental financial resources. The main reason of joining the recycling system for breweries, soft drink companies and retail groups is the tax benefit, which has to be negotiated with the government in order to attract as much companies as possible.

Furthermore, the proposed company might require an office as a base of operation. However, the company can base in one of the building provided by one of the owning companies, if not, leasing or buying a building is also required.

7. Key activities

The seventh block shows key activities that are the most important things the company should do in order to make the business model work. According to the categories described by Osterwalder and Pigneur (2012, 37), in the proposed company case, the key activity is building a network or a platform. It includes identifying the functions of the platform in order to organize the supply chain. The aluminum supply chain of our business is described below.

8. Key partners

This block shows a connection of suppliers and partners in order to optimize their business models, as well as to reduce risks and costs or acquire resources. Cooperation is the main type of our partnership. Strategic partnership between competitors is the key success factor. In our case, there is a competition between the various breweries and another competition between the soft drink companies. Following PALPA's example, transportation

services as well as waste recycling and aluminum smelting services are outsourced.

9. Cost structure

In this block, the authors described the structure of the cost incurred to operate the business. As a social business, the company does not pursue the goal of profit maximization, but rather try to generate social value. However, every company in order to sustain must cover all incured costs.

Being value-driven, the company is less concerned with the cost of a business model design implications, and focuses on the creation of social value. The authors have already covered the revenue streams and ways of getting financial resources, and in terms of cost structure decided to stick to fixed costs. The main service is the tax benefit that is negotiated and applied to all participating companies regardless of the volume of produced goods. Tax benefit can be either a fixed percent or no tax at all, as it is implemented in the Finnish model.

To conclude, having described the current aluminum market situation in Russia and creating the suggested business model based on Osterwalder's Canvas and PALPA's model, the authors got the structure of the aluminum supply chain (Figure 9) that will be used in the proposed company. The deposit payers sell their products in aluminum cans package with a "recycling mark" on it, a retail shop sells the product to the customer. Then, the customer returns the can to the return machine. Probably, the best location for these machines is inside the retail shops. As Moscow experience shows, placing the machines on the streets and near metro stations is not the best choice due to the danger of vandalism and lack of security and service. The returned cans are transported to the recycling operators. The transportation can be organized by outsourced companies, such as Finnish service company Lassila & Tikanoja (L&T) that already has experience on Russian market. Moreover,

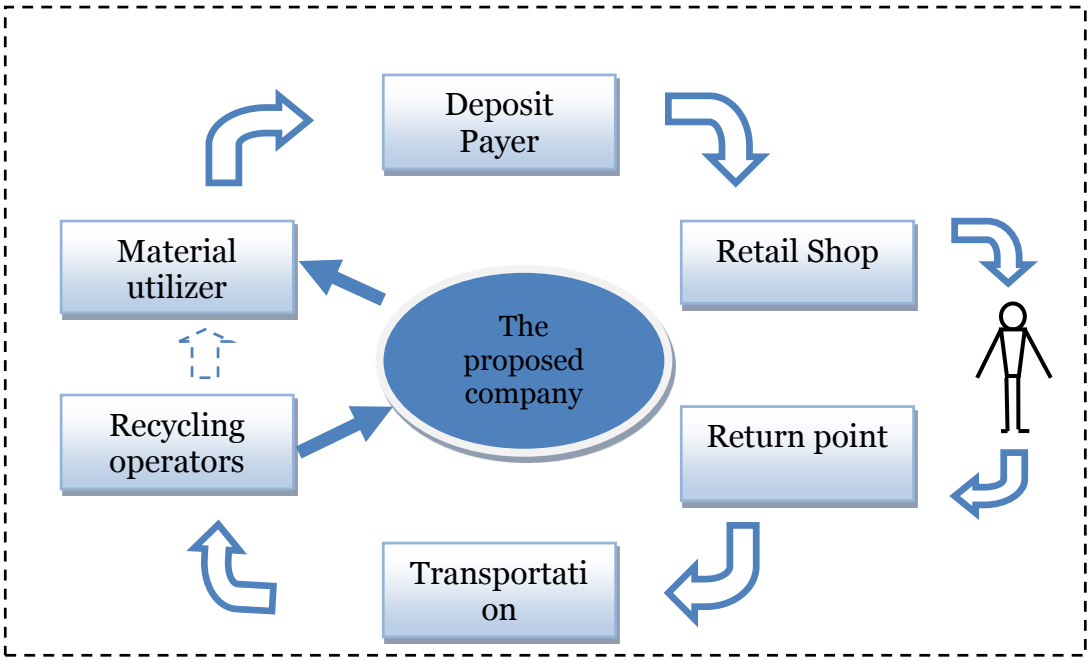

Figure 9. The aluminum supply chain of the proposed company

L&T has plans on further expansion to Russian markets. PALPA is also L&T service user, thus the company is familiar with the system and structure.

Figure 10 shows the final structure of how the company runs its operations. The model is similar to the one PALPA uses, but has extra features from MNE/NGO model and social business model concept. The reason the models look alike is that Finnish model is applicable in Saint-Petersburg. However, it is not the same. The proposed company needs to generate more profit both in order to sustain and attract new companies into the system, as well as raise the awareness. Furthermore, in terms of the experiment, the proposed company needs to show positive profit equation. In order to do so, all aluminum cans are melted at factories into coils and stored at operators' warehouses or the company's rented or leased warehouses. It has to be mentioned that aluminum cans, that are collected by the proposed company become the company's

property and the company is free to use them the way it sees the most suitable. As for the deposit flow, the system stays unchanged from the Finnish model.

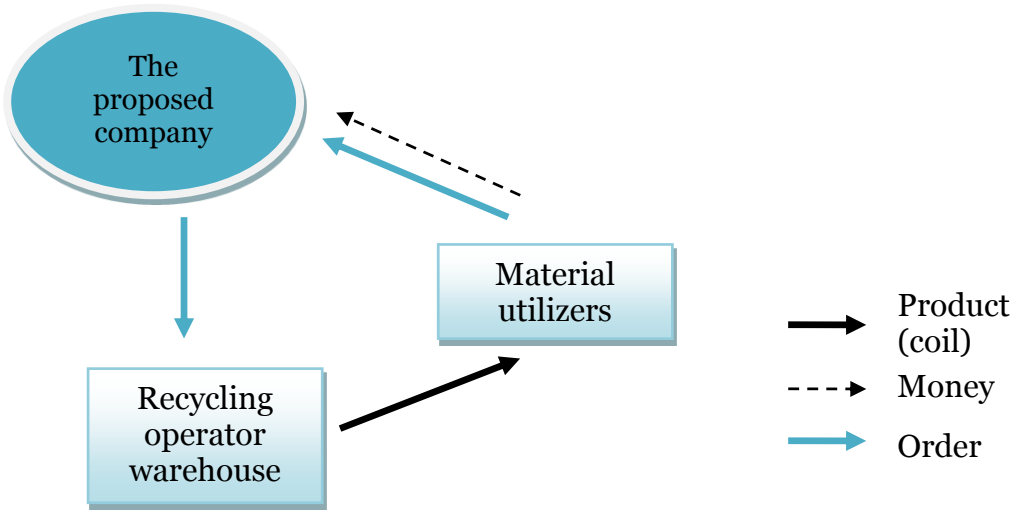

Figure 10. The extra profit flow

Figure 11 shows how extra profit is generated. Since all the recycled aluminum in form of coils is a property of the proposed company, it can be further sold to the utilizers. The recycled aluminum is used in many different industries, for example in automotive industry, airplane industry, aerospace industry and is important in other areas, such as construction, chemistry etc.

5 CONCLUSIONS

Nowadays, the recycling programs are very popular in the developed countries (Importance of recycling, 2014), and Russia also wants to join the recycling culture due to the increasing waste problems. Aluminum is the most recyclable material in the world and it is one of the most valuable in the recycling bin (Recycling, 2014). The recycled aluminum (i.e. coils) is used in different industries and thus, this kind of business can be profitable as well (How to Recycle Aluminum Cans, 2014 and Aluminum Recycling, 2014).

The aim of the study was to identify the appropriate business model for the implementation of the cans recycling system in Saint Petersburg, Russia. As the phenomenon is new and there are few similar experiments or studies on the current market in Russia, the authors started with the collection of the background information. The authors discovered that the Finnish recycling model was the most suitable one that could be applied to the proposed company in Saint-Petersburg (Aluminum Recycling Rates 2010: A Comparison Between the European Nations, U.S., and Canada, 2010).

The theoretical framework was based on the analyses of business models. In particular, the authors focused on Osterwalder's Canvas model (Osterwalder, A. and Pigneur, Y. 2009), the MNE/NGO collaboration model (Dahan et al., 2010) as well as the "social business model" concept (Yunus et al., 2010). The canvas model served as the base one, the two other model were used as modules for the improvement and added features.

As a result, after the analyses of the supply chains, the authors started to apply the theory. As mentioned above, Osterwalder's Canvas was used as framework for the creation of the proposed company's own business model. The MNE/NGO business model was used to understand how the cooperation between the for-profit and the non-profit organizations was carried out and how to reach the agreement in order to gain mutual benefits. The "social business model" concept served as the knowledge base of how to generate profit for a value-driven company.

The last point was the analyses of the supply chain of PALPA. The analyses showed how the company runs its operations and organizes its core activities. The analyses also showed that the model could be applied in Saint-Petersburg, Russia with some changes to supportive activities; its key activities stayed mostly unchanged.

The authors believe that the designed model can be applied to Saint-Petersburg region because it fits the Russian aluminum market, and people are willing to adapt new technologies. Every second St. Petersburg citizens has been to Finland and experienced the comfortable and simple system of recycling aluminum cans, PETs and glass bottles (Business Petersburg magazine, 2011). Therefore, the authors can conclude that people are familiar with the system. The success of the venture relies heavily on the governmental support.

The study focused primary on the implementation stage and, of course, there might be some issues. The implementation should start with forming a cooperative team of the "big players", such as Baltika and Heineken Breweries, soft drink companies Coca-Cola and PepsiCo and large retail groups and importers. Moreover, the retailer stores and shops should be formed correctly and precisely because it is the main pouch point with the customers of returning product (in the proposed company case, it is the aluminum can). After forming the lists of the owners of the proposed company and store partners, the company can start negotiation the process with the government to agree on the benefits for the companies that joined the recycling system.

In case of the success of the experiment, the company can widen the line of the accepted products further to one-way glass bottles and Pet-bottles or expand the system to other major cities to form a cross-country aluminum recycling system.

5.1 Reliability and validity

The verification of reliability and validity is an important part in scientific research. The verification starts from the beginning of the study because reliability is a part of various stages of the research process. (Kananen 2011, 66.) According to Jorma Kananen (2011, 69), reliability and validity in

qualitative research has four criteria: consistency of interpretation, saturation, documentation and reliability from the informant's point of view.

In this study, there were two authors. After the collection and analysis of the data, the researches came up with identical results. From both authors' point of view, the interpretation and the research results are confirmed. Such consistency of interpretation of the research is reliable and increases the credibility of the research.

As for saturation, the authors interviewed three respondents. Each of them is from different companies that represent one part of the aluminum recycling system. Coca-Cola is an example of soft drink company that is a part of the deposit payers category, REXAM is a supplier of aluminum cans and PALPA is the example of the existing recycling business model in Finland. In an ideal case, we could interview two more people from the supply chain: the largest St. Petersburg brewery Baltika and one of the recycling operators organization.

Furthermore, the researches justified in the research the choice of methods they used, as well as the companies that were interviewed. The researches tried to see in advance if the method is applicable to the thesis topic or not. Moreover, the authors analyzed a portion of existing business models before choosing the final ones for the proposed company.

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APPENDICES

Appendix 1 Interview: Dmitriy Ezhov. Production Department Engineer at Coca-Cola Hellenic in Samara, Russia.

I. Source of aluminum delivery

1. Where does Coca-Cola get the aluminum cans? Do you produce it on your own factory or order a product from your suppliers?
   ***Translated*:** We receive cans from REXAM factory, Kaluga region.
   ***Original*:** *Готовые банки мы получаем с завода «Рексам», Калужская область.*

2. How many factories produce aluminum cans for your company?
   ***Translated*:** *The beverage/product is bottled at three CCHellenic's factories. Unfortunately, I don't know how many suppliers do we have.*
   ***Original*:** *Продукция разливается в банки на трёх заводах CCHellenic. Сколько у нас поставщиков, к сожалению, не знаю.*

3. Who is responsible for applying Coca-Cola print to cans and bottles?
   ***Translated*:** *All beverage cans come to CCHellenic factories already with a Coca-Cola print on the cans.*
   ***Original*:** *На наши заводы поступают уже готовые к розливу банки.*

II. Division

1. In what containers does the finished product leave the factory?
   ***Translated*:** *The final product leaves the factory in boxes of 24 cans, which are placed on a cardboard backing.*
   ***Original*:** *Продукция покидает завод в кейсах (банки на картонной подложке, обмотанные плёнкой). Наиболее часто используемая компоновка – 24 банки в кейсе.*

2. What is the percentage ratio of bottling the product into aluminum cans, plastic /glass bottles and post-mix?

***Translated*:** *In 2014 only 9,9% of the total products were bottled in aluminum cans in Russia.*

***Original*:** *«Баночная» продукция составляет примерно 9,9% от всей произведенной продукции (за 2014 год) на заводах Coca-Cola Hellenic в России.*

III. Green programs

1. What “green programs” does Coca-Cola have?

***Translated*:** *A) “Green Team” that focuses on cleaning up streets, squares and parks by the company’s employees.*

B) *"The second life of packaging" is a project where caps, cans, labels and paper are collected and “live their second live” as materials for children's creativity.*

C) “Living Volga” – project aimed at cleaning the banks of the river.

D) “BioBottle” – new “BonAqua” PET-bottles are now made from organic materials (up to 30%)

F) Pond cleaning projects

E) School “Eco-projects” Competitions

G) Various water saving and energy saving projects aimed on reducing the pollution of the atmosphere.

***Original*:** *А) «Зеленые команды» - проект по очистке улиц, скверов, парков, улиц силами сотрудников Компании; вывоз мусора из городов;*

Б) «Вторая жизнь упаковки» - проект по сбору крышек, банок, пленки, этикетки, бумаги для использования в качестве материалов для детского творчества;

В) «Живая Волга» - проект по очистке береговой линии Волги (в том числе в черте заповедников);

Г) «Биобутылка» - в новых PET бутылках bonaqua теперь содержится до 30% материалов растительного происхождения;

Д)Проект очистки родников;

Е) «Конкурс школьных экологических проектов»;

Ж) «Энергосберегающие и водосберегающие инициативы». Например, «TOP-18 Energy Saving Projects» (например, минимизация использования сжатого воздуха (отказ от

«воздушных ножей»), переход на энергоэффективное освещение (LED) или использование керамических отражателей в выдувных машинах) и «TOP-10 водосберегающих инициатив» (например, сбор воды с омыва бутылок). Эти проекты обязательны к внедрению на всех заводах;

IV. Recycling programs

1. Do Coca-Cola recycle cans?

   ***Translated*:** Only defected or damaged during the production cans are sent back to the recycling operators.

   ***Original*:** *Я знаю лишь, что дефектные банки с производства собираются, освобождаются от остатков напитка, прессуются и передаются на вторичную переработку.*

Appendix 2 Interview: Tommi Vihavainen. Administrative Manager at PALPA.

I. PALPA establishment

1. Who were the initiators of establishing the company?
   a. *Retail, breweries and national alcohol monopoly company Alko.*
   b. *One important factor of having such common system is the beverage package tax. By joining the recycling system company (that distributes packages to market) can avoid the tax 0,51eur per litre. As long as costs of recycling system is lower than tax it is worth joining it.*
2. What companies were involved in founding PALPA?
   a. *Retail: Kesko, S-group, Suomen Lähikauppa. Breweries; Sinebrychoff, Hartwall, Olvi. Alcohol monopoly company Alko.*
3. Can you briefly describe the first steps of the company?
   a. *Palpa was established in 1996 for recycling of cans. In 2008 PET-bottles and 2011 one-way glass bottles.*

II. The process of collecting, transporting and recycling

1. Who is responsible for monitoring the process of collecting beverage containers?

   a. *Palpa is an administration company, all operations are executed by outsourcing partners. Return points (collection points) are retail stores and HoReCa (Hotels, Restaurants, Catering). All the data concerning retunrs is handled electronically from partners to Palpa's ERP.*

2. Is PALPA responsible for transporting beverage containers/cans from a return station to the baling station? If yes, do you have your own fleet or do you outsource?
   a. *Everything is outsourced. Palpa does not own any operational assets. Palpa buys services and pays compensations to parties doing the operations.*

III. Profitability and Financial Support

1. Is PALPA a non-profit organization?
   a. *Yes, Palpa is a non-profit organization.*
2. If do, how the company gets financial support?
   a. *Palpa collects payments as recycling fees. Recycling fee is to cover the costs of the operations. Besides recycling fee, Palpa sells the collected material (aluminium, PET-plastic, glass) to cover the operational cost.*

IV. Parties responsibilities

1. Since PALPA is jointly owned by 6 companies, what are there responsibilities of each company?
   a. *They form a company board and steer the company as normally company board does. They represent parties who distribute packages to market and other hand those who collect the empty packages (return points) and all the important decisions for Palpa are agreed together.*

Appendix 3 Interview: German Chursin, the purchasing assistant at REXAM

1) Who are REXAM's suppliers of aluminum?

2) What percentage of aluminum delivered to you comes from Russia, and some from abroad?

3) Do you use recycled in the manufacture of the product?

4) Who are your customers?

Rexam BCE is the largest manufacturer of aluminum cans in Russia. There are three processing plants that are Russian branch covered the demand of Russian grand beer and soda companies: Efes, Baltika and Coca-Cola. The biggest plant located in Naro-Fominsk is capable of producing 1.1 billion 0.33 and 0.5 cans per year (2005). In addition, Naro-Fominsk plant has end-making department, which produces ends for all Rexam cans in Russia and a bit of Europe.

Aluminum for cans and ends comes to a plant in form of aluminum coils from aluminum supplier companies. Alcoa RUS, a Russian branch of Alcoa Inc, leading supplier of alumina and aluminum, supply 95% of total aluminum for Rexam. The other 5% are imported from Novelis and Hulamin companies, usually imported aluminum has unusual properties and used for special cans.

Rexam plants do not perform or capable of aluminum recycling of any sort. All aluminum scrap left from can making process is sent back to supplier for melting.

Appendix 4 E-mail requests for the employees

Hello,

my name is Anna Gorelova. I am a student at JAMK University of Applied Sciences, International Business Bachelor Program.
At the moment I'm writing my thesis about "The effectiveness of implementation of the Finnish recycling cans model in St. Petersburg, Russia." The aim of the thesis is to find out the appropriate business model for the implementation. I hope that in future it will lead to improving cultural awareness about recycling and increase in the recycling rates.

I would be grateful if you could answer a few questions that will help me in my research. The list of questions is attached in the word-document. Thank you for your cooperation.

Best regards,

Anna Gorelova.

Appendix 5 The Canvas business model for the proposed company

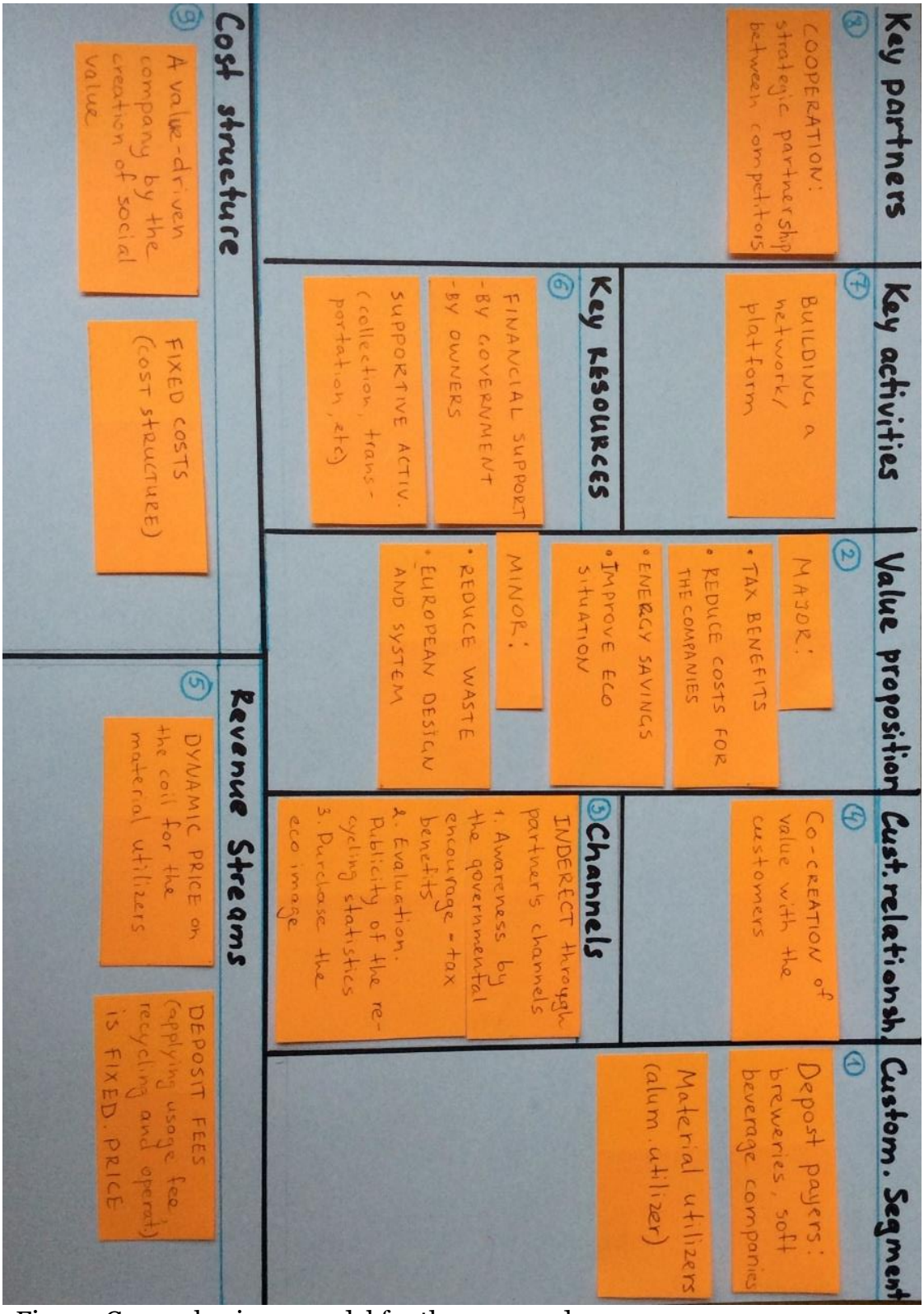

Figure. Canvas business model for the proposed company