MSc in Marketing

Can it be argued that there is a business case for a new entrant into the waste management industry in Iceland?
Declaration of Research Work Integrity

This work has not previously been accepted in substance for any degree and is not being concurrently submitted in candidature of any degree. This thesis is the result of my own investigations, except where otherwise stated. Other sources are acknowledged by giving explicit references. A bibliography is appended.

By signing the present document, I confirm and agree that I have read RU’s ethics code of conduct and fully understand the consequences of violating these rules in regards of my thesis.

15.05.2019

Date and place

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Abstract

The main objective of the study is to analyze the business environment of Icelandic waste management market and determine if current regulatory framework and structure of the waste management market has the potential to attract foreign investor and encourages innovation and competition among local firms from both public and private sector.

The investigation will define the concept of internationalization based on collected literature and examine efficiency of possible entry modes which can be utilized by entrant in order to enter the Icelandic waste management market. Subsequent chapters will focus on defining characteristics of the Icelandic waste management along with main applicable legal regulations governing the market. Furthermore, the study will discuss the issues directly connected to innovation and competition in the Icelandic waste management market.

The study will be conducted by gathering a set of primary data through a series semi-structured interviews with participants selected by the method of purposive sampling technique. Additionally, the reports composed by the competitive authorities in various countries, studies conducted by numerous researchers and data banks of independent organization will serve as a secondary data.

Based on the detailed analysis of the Icelandic waste management market along with additional factors which have an impact on the overall performance of the market it is possible to stated that local authorities should focus on the creating sufficient incentives for the local firms operating in the waste management market in order to increase the competition and encourage innovation. Without following actions, it is highly unlikely that foreign firm will attempt to enter the Icelandic waste management market.
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1. Introduction

In the last decade, the importance of the waste management market has significantly increased. The rapid growth of emerging economies has resulted in increased consumption levels by their citizens and eventual generation of bigger quantities of waste (OECD, 2007; Tchobanoglous et al., 1993). According to studies, it has been estimated that throughout the last 15 years, the quantity of municipal solid waste has increased by roughly 20 percent and it is highly likely that the amount will further increase even up to 40 percent by 2020 (OECD, 2007). Additionally, competition for the raw materials among the manufacturers can permanently damage the non-renewable resources.

Nevertheless, the requirements to enter the waste management market are gradually becoming higher as new legislation is regularly introduced, such as the Circular Economy Package, which will favor recovery and reuse instead of disposal (OECD, 2014). Therefore, firms are obliged to invest bigger amounts of their financial resources into modernizing their obsolete equipment and, in return, they expect higher profits. Many smaller firms are not able to fulfill the requirements necessary and will decide to exit the waste management market. As a result, many international markets are dominated by large non-domestic providers. For example, a study conducted on the municipal solid waste market in Poland showed that in the years 2010-2014, non-domestic providers, such as SITA, Alba, Veolia and Remondis owned roughly 33 percent of municipal solid waste market volume (Adamsen & Blagoeva, 2016).

Surprisingly, this does not apply to the Icelandic waste management market as it is impossible to observe active non-domestic providers, as the market is mostly controlled by local firms.

The main objective of the study is to investigate if current regulatory framework and structure of the waste management market doesn´t appear as a appealing to the foreign firms and if lack of the sufficient incentives to innovate resulted in decreased level of competition and productivity among local firms from both public and private sectors.

In order to increase the quality of the services delivered to the local citizens, local governments strive to provide a business environment which will encourage both public and private entities to find better cost-efficient and more effective market solutions for waste disposal. Lack of competition can eventually lead to a stagnant and obsolete
market, which will require the government to substantially increase their expenditure in order to fulfil requirements stated in European Union laws. Through the competition between public and private entities, the Icelandic government will be able to reach the objectives of using the material in a more efficient manner and at the same time ensure that the environment will not suffer from poorly utilized waste management methods. By taking the advantage of market solutions they can potentially create favorable conditions for the introduction of brand new innovative solutions, which as a result can increase the overall efficiency of waste management services or reduce the exploitation of scarce resources. Improvements made in relation to the public procurement processes in waste management can cause lower costs directly associated with the collection of waste and enable the municipalities to increase the importance of competition neutrality. Nevertheless, in the long run it is crucial to support more radical changes which will allow setting up more efficient waste management systems, prioritize the waste recovery procedures and facilitate the process of international trade, as efficiency of the changes should be evaluated based on the productivity of other adjacent markets. Over the course of the last few years, an increasing number of companies have decided to expand their business activities abroad. This can be the result of a saturated domestic market, or much smaller demand for the service. Entering a foreign market can be an extremely difficult and risky task, as the firm is required to possess sufficient resources, skills, experience and capital. Besides the above aspects, the firm is also expected to have adequate knowledge concerning the foreign market. Without the previous factors, all firms can experience difficulties. Therefore, it is crucial to analyze all external and internal factors present in the foreign market which can affect their willingness to enter such a market. One of the objectives of this investigation is to provide all essential information in order to evaluate and determine the best possible entry mode and facilitate the process of the market entry for the new entrant. Additionally, domestic companies can use this data to develop more efficient strategies against the entrant, and defend their current market position.
2. Approach

The purpose of this chapter is to give a concise overview of the structure of the thesis and how the author attempts to approach the process of answering the research hypothesis.

The first part consists of the literature review. Throughout the analysis of the current literature review, the author will attempt to present the rationale for the internationalization process, factors which facilitate or obstruct the entrance into the foreign market, as well as examine potential entry modes which can be utilized in order to enter the Icelandic waste management market.

The next chapter will provide detailed information regarding the history and current state of the Icelandic waste management market, along with international regulations which have a direct impact on the performance of the Icelandic waste management market.

The subsequent chapter will allow the reader to familiarize themselves with the research methods used by the author in the thesis, such as the type of the research method applied, sample size, criteria for selecting the respondents or limitations of the research. Afterwards the study will examine the competitive environment of the Iceland waste management market. Therefore, the reader will have a chance to examine the biggest players in the waste management market operating in both the public and private sectors.

The next section of the study will focus entirely on the concept of innovation. The author will attempt to investigate the importance of innovation as a tool to stimulate competition among the firms, as well as the relationship between innovation and competition. Additionally, the study will examine both the private and public sectors in terms of the rationale for innovation and expected outcome of the investments made in innovation. Ultimately, the chapter will assess the factors which cause the firms to innovate in relation to the Icelandic waste management market.

The next chapter will examine separately each stage of the waste value chain along with all possible profits and difficulties associated with each stage. Furthermore, this section of the investigation will look closely at various waste management systems and provide a series of disadvantages and advantages associated directly with the choice of any given waste management system and assess potential organizational issues faced by the municipalities, which needs to be addressed.

Afterwards the examination will provide the definition of competitive neutrality, the
benefits of its implementation and the source of the competitive neutrality issues in the waste management market in relation to the public sector. Finally, the study will provide real life cases where Icelandic firms did not adhere to the neutrality competitive policy and through their actions violated its basic rules. Subsequently the discussion chapter will present the result of the interviews in terms of how the foreign entrance can affect the shape of the waste management market and attempt to analyze the waste management market from the perspective of the entrant. Ultimately study will suggest the most efficient entry mode and likelihood of the foreign entrance.
The last chapter will summarize the results in a concise and coherent manner and present possible recommendations regarding a possible entry mode for the foreign firm as well as possible structural improvements which will result in increasing the efficiency of the waste management market.
3. Literature Review

The aim of this chapter is to introduce the reader to the concept of internationalization, determine potential factors which can facilitate or hinder the process of entering a foreign market, as well as present an overview of possible entry modes in relation to the Icelandic waste management market.

3.1. Internationalization

The concept of internationalization is considered as an immensely popular subject matter in the modern world. Due to its rising importance, a growing number of researchers have shifted their attention towards exploring the notion of internationalization. As a result, brand new business models and theories are constantly being developed in order to facilitate the process of foreign entrance.

Internationalization is perceived as an action by a company in order to increase the size of their production, selling and number of business activities in foreign international market (Hollensen, 2011). Buckley and Casson (1998) look at the firm as an internalized bundle of resources which can be transferred between national markets and product groups. Internationalization is typically associated with the well-being of the firm in the domestic market and gradually investing their assets in the foreign country in order to generate more profit and increase the market shares. The firms’ attitude towards internationalization reflects their own culture, goals, and willingness to come out of the comfort zone of the home country to face new challenges in a brand new business environment. Internationalization allows the firm to differentiate itself from the current portfolio of firms that are already operating in the country and challenge the status quo of any given market in order to deliver better quality goods and services. The process of internationalization cannot be carried out easily as the firm is obliged to possess a "compensating advantage" in order to overcome the "costs of foreignness" (Hymer, 1976; Kindleberger, 1969). The possibility of a new entrant to the market can have beneficial effects to the economy of a given country. A new entrant can bring to the market attractive factors, such as, financial and managerial expertise and modern technology, along with organizing management skills in order to help develop the market so it will allow for the organization to increase their own profit and value of the goods and services.
3.2. Factors increasing chances of success in the process of market entry

The topic of the efficiency of international market entry has been extensively discussed over the course of the last few years. Nevertheless, researchers have not reached a unanimous agreement concerning aspects which guarantee successful market entry. A traditional resource-based approach states that the success of the firm in a foreign market is defined by its ability to possess and fully control significant resources, along with capabilities of the company which competitors are lacking. The resource-based method identifies resources as semi-permanent assets directly associated with the firm, such as reputation, brand, or patents. Capabilities of the firm deal directly with complex habitual activities which allow the organization to benefit from all available resources in order to create a service or product. (Grunert & Hilderbrandt, 2004). While the resource-based approach identifies several factors, which might determine the overall success in relation to adopted market entry, it fails to take into consideration situational and structural market characteristics.

A study conducted by Elg, Ghauri and Tarnovskaya (2008) determines additional factors which can have a direct effect on the success of the market entry. In their opinion, the organization cannot rely merely on resources and firms’ capabilities, but they also need to create a network with local firms in order to fulfill their expectations. Networking should be used as a primary tool to gather market knowledge and secure contacts, which is extremely important, especially in the early phases of internationalization. As a result, the firm is obliged to have a better understanding of the actors emerging in the early stages of internationalization in order to manage possible interactions with them.

Finally, the entrant can profit from interactions and support received from key market players, as it will significantly help to increase the importance of the firm in the market and finally lead to successful market entry (Elg, Ghauri & Tarnovskaya 2008). Lyles and Steensma (2000) determine that there is not a universal entry strategy which can be applied in every single scenario to guarantee success. However, they emphasize the importance of networking. In their opinion, the entrant should purse a mutually beneficial relationship with a domestic firm. The capacity of managing and establishing relationships can be crucial to securing a favorable position in the market. The process of establishing a network can be extremely time-consuming, but it should be considered as a part of the long-term strategy of the firm.

Lyles and Steensma (2000) also suggest that successful market entry is heavily
dependent on the effectiveness of transferring knowledge. It might appear as a contradictory statement, as a significant number of scholars claim that by transferring knowledge to the foreign market, the entrant can weaken its strategic position. Lyles and Steensma (2000) argue that the entrant, by transferring knowledge to the local market, can increase their chances of success instead of weakening its strategic position. In this case, transfer of knowledge can result in improving the structure of the local network and increase the reputation of the foreign firm in the new market. The previous actions are highly praised by local governments as transfer of knowledge allows local firms to increase overall quality of service and products delivered to the client.

Johnson and Tellis (2008) categorize the factors influencing the success of market entry into two groups; firm differentiation and country differentiation. Firm differentiation takes into consideration the size of the firm, entry timing, resources and strategy, which are directly connected to the entry mode. The latter category investigates characteristics of the nation such as country risks, cultural distance and country openness.

Entry timing has been identified by various researchers as a factor which can either prevent or assist market entry. It has been widely recognized that first movers can gain much bigger profits, but at the same time they experience higher risks. Nevertheless, in some instances the benefits from delaying the entry can be significant, as the potential entrant can use the time and financial resources to improve the quality of the service or product instead of developing the market. Thus, the strategy of delaying the entrance does not need to be perceived as a disadvantage (Lieberman & Montgomery, 1998). Johnson and Tellis (2008) advocate that the openness of the country can directly influence the decision of entering the market by the entrant. The favorable structure of the regulatory framework can indicate a high level of country openness and allow a bigger number of investors to enter the market. On the other hand, the openness of a country does not need to be a favorable factor, as numerous countries enable much easier market entry in order to increase the competition in the market (Johnson and Tellis, 2008).

3.3. Entry barriers

Bain (1956) proposed the concept of the entry barrier on the assumption that rivalry should be perceived as a major factor influencing the business activities of the company. Porter (1980) defines entry barriers as hindrances preventing a company from being fully established in a particular market. Generally, entry barriers are classified into two groups: endogenous and exogenous barriers (Gable et al., 1995). The formation
of endogenous barriers is associated with the strategy of a firm already present in the market, to discourage potential entrants from entering the market in order to reduce the number of competitors. According to Lutz et al., (2010) endogenous barriers are closely related to strategic management and should be perceived as a method to develop competitive advantages. In addition, the previous category of barriers encourages firms to establish business strategies that are difficult to replicate and form higher entry barriers. On the other hand, firms cannot control exogenous barriers as they are directly associated with the market structure (Gable et al., 1995).

Pehrsson (2009) identifies cost advantage as the most common market barrier. Cost advantage is defined as a situation where the unit cost of the product is higher for the entrants, compared to the firms already operating in the particular market. Additionally, incumbent firms can offer a lower price for the product or service compared to the entrant, as the newcomer cannot benefit from economies of scale. Finally, incumbents have alternative cost advantages, which are associated with product differentiation, brand image or sufficient amount of data regarding customers’ demands and needs.

The other crucial barrier recognized by Pehrsson (2009) is the need for financing all business aspects of the firm in the foreign market. Karakya argues that costs of entry are directly associated with the characteristics of the market and involve all costs of starting and keeping the facility operational, such as cost of labor, along with hiring and training. This type of entry barrier can appear to be much higher for the smaller firms compared to bigger organizations, as larger companies can much more easily gain access to financial resources by borrowing them from banking institutions.

Porter (1980) emphasized the importance of “switching costs” as a significant entry barrier that appears to the new entrants. Switching costs represent a necessity to invest financial resources and significant amount of time in order to set up new equipment, redesign the product or adapt to new technological standards. Additionally, the company might be forced to deal with a different type of customer, due to a constantly shrinking market and the desire to supply new clients.

Gaining access to distribution channels can be extremely challenging for the entrant companies, as existing competitors are likely to protect already existing distribution channels to prevent increasing number of firms operating in the market. Often, the incumbent firms are in much better position than the entrant due securing a long-term relationship or exclusive rights to use particular distribution channel. In this case, the entrant firm is forced to convince the distributor or contracting party that they can
produce better results or giving them higher discounts than the domestic firm (Porter, 1980).

Government policies can influence the decision of the entrant to explore the particular market. Local governments often have rights to regulate the number of organizations entering, through a system of permits and licenses. Therefore, the regulative framework can effectively discourage the potential investor from entering the market, due to the fear of tighter control over production and commercialization of specific products (Porter, 1980).

Karakaya (2002) defines endogenous barriers as the projected revenue of the firm that is entering the market. The entrant often assesses the expected returns of investments. Calculations are based on several entry barriers, such as, market share currently held by the competitors, the number of potential rivals, or the lowest possible prices offered by competitors. Nevertheless, Karakaya (2002) proposed that high profits can be seen both as encouraging and discouraging factors. High profits can indicate that the market might be attractive for a bigger number of entrants who are willing to expand their business activities abroad. On the other hand, high profits can indicate that the domestic firms have gathered enough financial assets to successfully prevent the entry of potential rivals.

3.4. Entry Strategies

The process behind choosing the best suitable foreign market entry mode should be considered as an immensely important strategic decision (Lu, 2002). According to Hill, Hwang and Kim (1990), the foreign market entry choice determines the amount of resources currently held by the firm which will be used or transferred to the foreign market, along with any risks that the company will need to bear in their own host country, and the degree of control an organization can exercise over their business assets in foreign market (Anderson & Gatignon, 1986).

The mechanism of the internationalization does not develop extremely rapidly. The firm is obliged to increase their market share in their own domestic market and gradually secure a more stable position. The internationalization should instead be seen as a series of accumulative decisions which will eventually lead to establishing a new enterprise in a foreign market. As mentioned by Hill, Hwang and Kim (1990), the most important factor regarding foreign market entry is the amount of resources that the firm is controlling at this time. Lack of resources and sufficient knowledge can delay the process of internationalization. However, the effects of these factors can be minimized
by incremental decision-making and obtaining sufficient knowledge about the foreign market, along with operations made within it prior to entry. The estimated risk resulting from market investments can decrease, but the firms still might be inclined to start a business in neighboring countries or countries that have relatively similar business environments, trends and policies to the home market.

Despite previous statements regarding the necessity of applying an entry strategy, it cannot be concluded exactly which would be most suitable, as the organization needs to evaluate various external and internal factors that will influence their own decision. Driscoll (1995), believed that a variety of situational factors could influence the decision of the firm to choose an entry strategy with particular characteristics. Nevertheless, he concludes that there is no optimal entry mode under all conditions. Thus, the company cannot rely solely on already established entry strategies. The organization is compelled to evaluate the characteristics of the mode, the strengths and weaknesses of the firm, the environmental factors, and additional factors that will appear after selecting the entry strategy.

Hollensen (2011), states that the companies might be required to make use of more than one entry strategy, in order to expand their operation abroad. Prior to the decision about selecting the best possible entry strategy, the organization is forced to conduct in-depth research regarding all possible external and internal factors which might affect the firm’s efficiency in a chosen foreign market. Rodriguez, Uhlenbruck and Eden (2005), address the issue of entry to the foreign country without conducting a detailed market research. In their opinion, market research should be considered as one of the most important factors which might result in the overall success or failure of the organization in the foreign country. Furthermore, the process of selecting an appropriate market entry strategy should be heavily dependent on various factors associated with the firm’s target market environment, such as, economic, socio-cultural, technical, political, and legal environment. Organizations that are willing to enter a foreign market with unstable political, economic and legal environment need to keep in mind that the risk of failure will be much greater than assessed (Luo, 1999).

A great number of current studies concerning foreign entry modes have recognized a few variables that can influence the decision of selecting an entry mode (Chung & Enderwick, 2001; Sanchez-Peinado & Pla-Barber, 2006). Anderson and Gatignon (1986), argue that the amount of resources, control, commitment, involvement and risk can differentiate each entry mode. Blomstermo et al., (2000) goes even further, as he
believes that control should be perceived as the most important factor that decides both returns and risks of the efficiency of the investment abroad, along with level of conflict arising in the relationship between buyers and sellers. This claim is supported by Brookes and Roper (2010) as they determine control as the companies’ capacity to influence miscellaneous management systems that the firm might possess. Control over management systems gives a firm the ability to attempt to strengthen their own competitive position and maximize profits.

3.4.1. Intermediary entry modes
In some instances, the organization is unable to deliver its service to foreign markets from their home market, and for that reason the firm seeks to commence their business activities in a foreign market by establishing cooperation with local partners. Therefore, the organization does not have complete control over their business activities as it does not have full ownership, as the control is being shared between partners. A number of intermediary entry modes can be identified, such as, management contracts, franchising, turnkey contracts or joint ventures. These intermediary modes are mainly applied when the organization maintains a specific competitive advantage but is not able to benefit from it due to certain restraints, however, the firm is capable of selling or transferring these assets to a third party. The firm, in most cases, decides to sign a long-term contract with foreign partner. As a result, the organization is obliged to transfer knowledge and other assets between firms in various countries (Hollensen, 2011). The most appealing reason for firms to commence their business activities in foreign markets are relatively low production costs directly associated with low labor costs. Thus, production in foreign countries can ultimately lead to lowering of the transportation costs, and firms that decide to set up production in foreign markets have the potential benefit of being close to their foreign clients and having a better understanding of their needs and demands. Additionally, certain percentage of customers might prefer products that originate from their home country instead of goods imported from foreign nations (Hollensen, 2011).

3.4.2. Joint Venture
A joint venture is considered as a business arrangement between two or more business partners in which both parties agree to combine their resources for the purpose of accomplishing a particular project (Buckley & Casson, 1998). Prescott and Swartz (2010) define joint venture as collective endeavor founded by two firms where both parties share responsibility, profitability, risk, management and control but both firms
are able to keep their independence. In their opinion, it is generally accepted that joint ventures are set up when one of the partners purchases at least 50 percent of the shares in the existing firm (Prescott & Swartz, 2010). In addition to the previous statement, both of the firms agree that in some scenarios only one partner is accountable for the management of the joint venture. Joint ventures can be present in various nations, which as a result can complicate the partnership. The fundamental rationale behind the decision to agree to this specific form of partnership is to gain access to a particular type of knowledge, which can be acquired only by partnership with firms operating in local markets. Developing cooperation with domestic companies can serve as an effective method to boost the speed of entrance into desired markets. Due to long exposure to the internal and external factors of the market, domestic partners usually possess a certain type of experience and knowledge which allows unexperienced entrants to familiarize themselves with the process of approaching regulations and directives stipulated by local governments. Thus, the organization can minimalize the effects of political risks associated with the market entry. Additionally, domestic partners might possess invaluable knowledge regarding the internal business environment, be a part of well-developed business network, and have acquired priceless market information, which will be shared among business partners. Cooperation can lower overall costs accompanied with market entrance, as the firm can increase the speed of research and development, along with the production of desired products in foreign markets. Additionally, the organization does not need to fear business risks and restrictions which usually are perceived as tremendous obstacle. Thus, a joint venture is seen as a satisfying solution for organizations that are attempting to gain access to markets which have constraints concerning foreign ownership (Chang & Rosenzweig, 2001). It is especially evident in case of small and medium sized firm, as it can prove to be relatively difficult for them to gain access to remote foreign markets without securing cooperation with domestic companies already present in these countries (Luo, 1999; Samli, 2004).

Zhang, Zhang and Liu (2007) acknowledge the benefits of using a joint venture as a means to acquire needed resources, but at the same time they argue that excessive dependence on joint venture can lead to the entrant being exploited by the domestic partner. Firms might perceive joint ventures as a method superior to acquiring, on the assumption that through acquisition the organization might obtain assets which are not beneficial for the firm, or if the firm attempts to enter the foreign market without any
knowledge of it (Chang & Rosenzweig, 2001).
Joint ventures can be divided into two types. The first type is a contractual non-equity joint venture. It is characterized by the willingness of two or more firms cooperating with each other to share risks and profits deriving from mutual investment, without establishing an independent firm. In this instance organizations agree to develop a partnership in terms of research and development, as they perform joint market research and supply each other with appropriate technological assistance along with necessary training. Additionally, organizations make an arrangement to share among themselves a given number of raw materials and resources. The agreements are usually valid for prolonged period of time. The second type of joint venture is commonly called an “equity joint venture”, where at least two or more partners make an effort to establish a brand new and independent organization in which the cooperating parties share ownership and control over a newly developed establishment. It is perceived as the most common method for international firms to enter foreign markets. In this scenario, an international firm develops joint company along with domestic partner in foreign market and gains control over created joint company (Chang & Rosenzweig, 2001). In the case of creating a joint venture, all parties are obliged to invest capital, equipment, knowledge, raw materials and workforce, or allow partners to make use of available establishments (Luo, 1999).
In some instances, particular local governments might force investors to transfer a certain percentage of total assets in order to enter a given market. Joint ventures can be established in two ways; from the scratch or by merging with an existing company (Luo, 1999). The entrant is free to choose the partner; however the decision should be based on partner’s specialization and knowledge concerning particular type of products and services, financial resources, reputation and popularity in domestic market. Nevertheless, it essential to take into consideration, that in the case of joint venture, both sides should benefit from the ongoing partnership. In some instances, the domestic partner would not be interested in forming a joint venture, as the entrant does not fulfill their criteria. Prior to entering the foreign market and developing a joint venture, it is essential for the entrant to analyze three crucial matters regarding their future partner. Firstly, the entrant is obliged to evaluate if the future partner has any sort of previous experience in terms of international partnership and cooperation. Secondly, able to assess if the partner is willing to form a partnership or collaboration with foreign firms, and lastly, how the partner can benefit from forming a partnership or what is the
primary reason for establishing such a form of business. It is not advised to develop a partnership with a firm not fully committed to it, or lacking experience concerning working with international organizations. If the future partner has strong desire for success and by forming a partnership with international organization they intend to strengthen their position in the domestic market or gain more market shares, then it should be perceived as good signal and indicates that both parties’ goals overlap. Thus, this partner should be perceived as good candidate to form joint venture (Luo, 1999; Samli, 2004).

If a firm wishes to enter a foreign market, it is suggested for the organization to approach the trade chamber or the embassy of their selected country. After finishing the process of selecting potential partners, it is advised to establish a convenient form of communication and allow them to familiarize themselves with the firms’ objectives and goals. Next, choose the most suitable partner which will fulfill their prerequisites and support their objectives (Samli, 2004). It is essential to keep in mind to conclude the process of negotiation by signing a contract with their partner prior to beginning of the partnership. The decision to select an appropriate partner should be based on the evidence, facts, and information. Both parties should be clearly informed concerning their tasks and responsibilities regarding distribution and marketing. Additionally, both partners should not have any doubts about the distribution of profits between them, as well as how the accounting mechanism will be conducted. It is essential to keep the partner updated about business information solely related to the newly developed partnership, as other side might take advantage of such knowledge (Luo, 1999; Samli, 2004).

A partnership in the form of a joint venture is usually terminated after seven years. In eight out of ten cases, the collaboration ends when one partner decides to buy the other side’s right in the joint company. It should be noted that the reasons for the termination of the partnership can differ, but studies show that the main reasons for such action are a desire to change the business strategy by the parent company, a lack of change in the firm’s management board, constant cultural clashes, or the necessity of keeping up with a rapidly changing business environment. Thus, it is crucial for a foreign investor to enter the partnership with an already prepared exit strategy, in case of sudden termination of the partnership (Hollensen, 2011).

Nevertheless, it should be noted that any types of mergers are deliberately evaluated by the local Competitive Authority in order to assess if following form of entry market
might infringe the competition law and ultimately lead to the abuse of market power. Therefore, the Icelandic authorities are empowered by the government to impose fines on the public or private entities for violating the competition act or violating the decisions issued by the competitive authority.

If the turnover of the companies which are participating in the merging process exceed a specific, pre-established, threshold, then the businesses are compelled to inform the Competitive Authority regarding the merger. Subsequently the Competitive Authority will have a chance to assess if the merger will substantially affect the local competition, while at the same time ignoring mergers that do not have a significant impact on the competition, as they are classified as too small. In the case of Iceland, the Competitive Authority should be notified if the combined turnover of the merging parties exceeds 2 million ISK (Nordic Competition Authorities, 2013).

3.4.3. Management contracts

A management contract can be classified as a type of intermediary mode where, through a partnership agreement, one firm transfers its administrative know-how along with well experienced staff to aid another firm for a previously agreed fee (Daniels, Radebaugh, & Sullivan, 2011). The length of the management contracts can vary, based on fixed payments or amounts of fee based on volume, however the arrangements are usually valid from three to five years. The management contract is being pursued if the domestic firm assumes that the foreign organization can improve the quality and speed of services or goods delivered to the client by reforming the business operations of the domestic company (Daniels, Radebaugh & Sullivan, 2011). The main benefit coming directly from management contracts is that the domestic firm will not lose control over their operation, instead the foreign company will merely assist in the process of improving the overall structure of the local company and their business activities in return for an agreed fee. Nevertheless, by signing a management contract, the organization might leave themselves in a vulnerable position, as the third party will gain access to a large amount of confidential data. The problem might escalate if the firm provides expertise to the competition in the market.

3.4.4. Turnkey operations

A turnkey operation is considered to be a collaboration arrangement where one organization will attempt to sign an agreement with another firm in order to construct operational facilities. Construction companies or industrial-equipment producers mainly adopt these forms of arrangements (Daniels, Radebaugh & Sullivan, 2011). This type of
collaboration arrangement is commonly conducted by government agencies in developing countries (Daniels, Radebaugh & Sullivan, 2011). It should be noted that the entrant willing to make use of turnkey operations is obliged to evaluate the history of public-private partnership within the country they are about to enter. Furthermore, the entrant should determine if local governments can benefit from presence of private firm in a given market.

3.4.5. Foreign direct investment

Foreign direct investment (FDI) is categorized as a type of investment in a foreign country by a firm or individual willing to establish business operations or acquire control of particular business assets (Charles, 2007). According to Chung and Enderwick (2001), foreign direct investment can be categorized as strategy approach. This entry strategy allows the investor to obtain a high degree control over the international business in the foreign market. FDI is often associated with high financial expenditures and transfer of the skills, production processes, technology and additional resources by the entrant to the foreign country (Bradley, 2005). In order to enter the market with a competitive advantage, the firm often desires to transfer their intangible assets, such as, business culture, management skills and methods of performing business operations, to the external market. Foreign direct investment entry strategies often generate much bigger profits compared to contractual or exporting modes but are also identified with much greater risks and are more complicated concerning the management of the business establishment. As a result, organizations are more inclined to enter a bigger market to make up for the considerable risks of entrance. According to Bradley (2005), the main factors which determine the decision to use the FDI approach are: size of the market, distance between domestic and host country, previous attempts to use FDI as an entry mode by other entrants and the need to imitate business activities of the competitors.

FDI acts as a stimulant to the economy of the host country, as the entrant transfers capital, technology, and managerial expertise. In case of success, this is often mimicked by competitors, thus, increasing the quality and efficiency of the service of product delivered to the customer, along with the level of competition (Pandey, 2013). Additionally, the local government often believes that the entrant will be able to develop the market and modernize the infrastructure in order to maximize the profits coming directly to the organization. Nevertheless, it should be noted that the attraction of the bigger organizations can have devastating effects on local, smaller, firms, as they
cannot compete with much larger companies, due to lack of financial resources and their inability to keep up with technological innovations.

3.4.6. Greenfield Investment
Greenfield investment represents a method of market entry where a firm decides to enter a foreign market and set up their business activities from a scratch. Failure to explore the market using an acquisition method may force the firm to select greenfield investment as a substitute entry strategy (Hollensen, 2011). Using greenfield investment is much more time-consuming, compared to the acquisition method, as the firm is obliged to carefully establish their business activities in foreign market from the very beginning and gradually strengthen their position by working towards pre-established business objectives. All the time used by the firm to develop their business activities can be beneficial to the organization, as the firm can set up their operations in accordance with their business culture and needs, which cannot be so simply done with acquisition approach. In the case of the acquisition method, the organization is required to introduce a similar business culture for both firms in order to maximize the benefits coming from the synergy of both parties, and often the acquired company is forced to adapt the business culture of the acquiring firm and as result it can cause additional issues (Charles, 2007). Greenfield investment allows for the entrant to rely on pre-established routines and business culture which has worked in domestic market. Nevertheless, the firm needs to learn the characteristics of the market, along with several external factors, such as government regulations, in order to efficiently operate in the foreign business environment. Users of greenfield investment need to keep in mind that other entrants might use acquisitions as a main method to explore the market and therefore much more quickly gain a bigger market share and increase entry barriers, which will discourage potential entrants (Charles, 2007). Furthermore, the entrant needs to evaluate if the market is sufficiently developed to support additional firms in terms of revenue.

3.4.7. Acquisition
Acquisition as an entry mode is characterized by high cost and exposure of the firm to high risk. This entry mode allows the firm to enter the foreign market swiftly and grants organizations easy access to local knowledge, new distributors, a skillful labor force, new customers, existing management experience, and in a few scenarios, enables the firm to acquire a reputation or brand name of the previous firm (Chang & Rosenzweig, 2001; Meyer & Estrin, 2001). Additionally, the acquisition enables the entrant to maintain the current employees without the necessity of changing their positions within
a newly acquired firm, in order to maximize profits coming directly from their expertise, knowledge and experience (Luo, 1999). Thus, acquisition might appear as good method for firms with a minimal amount of international experience to gain access to particular foreign market. Acquisition is also applicable in cases when the access to market is difficult, due to high entry barriers and the strong presence of competitors (Luo, 1999).

Root (1998) argues that acquisition mechanisms can be divided into various forms, such as vertical, horizontal, conglomerate, or concentric. Horizontal acquisition is characterized by obtaining the business activities and the products of a firm operating in the same industry. As a result, it allows the new entrant to acquire a better competitive position in a new market, and expand the capacity of the foreign firm without the need to completely alter business operations. Vertical acquisition occurs when the entrant acquires a company operating as a supplier in order to integrate their supply chain and synchronize logistics and production to improve efficiency and costs. Vertical acquisition serves as an indirect method to increase current market share by gaining control over supplies used by competitors. By acquiring a firm offering different type of products or services, but operating in related industry and sharing certain number of customers, the entrant executes a concentric acquisition. Conglomerate acquisition is defined as the acquisition of company present in different industry than the acquiring firm. Conglomerate acquisition can reduce the risks associated with operating in various industries (Hollensen, 2011). The primary benefit coming directly from using acquisition is that it serves as the quickest method to enter a foreign market and is perceived as the most suitable mechanism to obtain business connections and local knowledge (Chang & Rosenzweig, 2001; Zhang, Zhang, & Liu, 2007).

The main disadvantages associated with the selection of acquisition as an entry mode are high risks directly connected to high investment cost, and problems arising from the process of the integration of the acquired firm, such as issues concerning coordination or lack of communication (Meyer & Estrin, 2001). It is not advised to use acquisition if the company enters the market with limited financial resources. Small and medium sized firms would prefer to rely on intermediary entry modes where the risks can be minimalized. Subsequently they would strengthen their position in the market and gradually gain experience, knowledge, and connections in order to start considering acquisition of a domestic firm. Much bigger organizations might be more willing to use
acquisition as an entry mode as they enter the market with primary objective to dominate it and gradually shape it according to their needs. Furthermore, bigger firms can sustain much bigger loses compared to much smaller firms which cannot afford to perform similar actions.
4. Icelandic Waste Management Market

This chapter provides a detailed analysis of all internal and external factors which can have an impact on the development of waste management market and type of business activities performed by local firms. The analysis will include a thorough review of the economic, legal and political environment of Iceland, as well as the current situation in the Icelandic waste management market.

4.1. Economy of Iceland

The Icelandic economy can be classified as an open developed economy, resembling the Nordic model, which unites elements of the market economy with a welfare state. Iceland has the smallest economy among other members of the Organization for Economic Co-operation and Development (OECD) with 2,422 billion ISK or 20.7 billion USD. In comparison, the Icelandic economy is roughly 1/22\textsuperscript{nd} of the size of the Polish economy or 1/1000\textsuperscript{th} of the size of the US economy. In terms of GDP per capita, Iceland currently occupies 18\textsuperscript{th} place, globally (Iceland Chamber of Commerce, 2017). In the few past decades, Iceland has been consistently classified as a country with relatively high living standards. The Icelandic economy was heavily affected by the financial crisis in 2008 and as a result, Iceland’s rank has significantly declined. However, in the past three years the Icelandic economy has been gradually improving up to the point where it regained its pre-crisis rank. Throughout the last few years, the Icelandic economy has witnessed a very quick economic recovery, much faster compared to neighboring countries or other high-income nations that are part of OECD rankings. The main drivers responsible for such a quick recovery were rapidly growing tourism sector, private consumption, or high number of business investments.

Various economic experts have identified several factors, such as; educated workforce, high level of economic freedom, a strong institution framework, and low corruption, which have greatly contributed to creation of such wealthy and globally competitive economic structure. Iceland is placed at the top spot in OECD ranking in regards of peace and gender equality. Female labor force participation is estimated to be at very high levels. According to the World Bank calculations, roughly 70 percent of Icelandic women are active in the labor market (Iceland Chamber of Commerce, 2017). It’s hard to find similar numbers in other country in Europe. In general, the labor market is considered a crucial aspect to the wellbeing of the Icelandic economy, due to the long average working hours and previously-mentioned high participation levels. The unemployment level is currently at its lowest levels since 2008. Nevertheless, there is
constantly a need for a skilled workforce. According to research conducted by the Central Bank, roughly 25 percent of Icelandic firms intend to hire new staff members and 40 percent of Icelandic firms believe that they are short-staffed despite significant growth in imported labor. In recent years, wages among Icelandic workers have increased significantly due to numerous collective wage agreements. Collective wage negotiations have a largely influence the overall structure of the Icelandic economy, as roughly 80 percent of the workforce are considered as members of any labor union operating in Iceland (Iceland Chamber of Commerce, 2017).

Compared to other economies the Icelandic market is considered as more volatile due to relatively small size and lack of regional diversification. Additionally, the Icelandic economy is heavily dependent on international trade. As a high number of products and services are not manufactured internally, they require to be imported, so they will be used in the domestic market. In order to finance the high number of imports, local authorities require a substantial export sector.

To fund these imports, a strong export sector is required. The export sector is constantly affected by the volatile currency and exchange rate fluctuations, which for many years were typical for the Icelandic Krona. In the case of the Icelandic Krona depreciating, prices associated with the import of products and services increase, thus generating inflation. This was evident throughout the financial crisis in 2008 (where the value of Krona decreased by 50 percent causing inflation reaching highest point at 18.6 percent). Since this point, inflation has steadily diminished and has continued to be below the Central Bank’s inflation target since 2014 (Iceland Chamber of Commerce, 2017).

4.2. History of Waste Management in Iceland

The earliest officially recorded data concerning Icelandic waste management can be tracked back to the 1970’s, when incineration and open-pit burning were used as a common form of solid waste disposal throughout the country (Meyles, 2006). The incineration of waste was generally used as a disposal method around the coastline of Iceland in numerous towns until the 1990’s. Nevertheless, this practice had many disadvantages, such as generating high quantities of hazardous particle emissions and dispersing them into the surrounding environment, along with a generally unpleasant smell and thick smoke. The area covered by the particle emissions was further widened by strong winds, typical to Iceland, and usually present in those areas. The introduction of landfilling soon replaced incineration as a more efficient practice of solid waste disposal, and allowed much more control over the treatment of waste. However,
incinerators still had a harmful effect on the environment, as several high-efficiency incinerator stations were built in order to deal with larger amounts of waste. These incinerators had a much lower particle emission. Additionally, incinerator stations generated small quantities of thermal energy (Meyles, 2006).

As a result of increased level of collaboration between municipalities in Iceland, the practice of waste management became more effective, as by the end of the 1990’s there were three incineration plants, six landfills and roughly 50 operational burning pits. After Iceland joined the European Economic Area (EEA), the Icelandic local governments became obligated to adopt European Union legislation and incorporate it to the already existing waste management legal framework. Thus, by 2000, Icelandic local government was forced to abandon the practice of open-pit burning, although seven incineration stations and 29 landfill sites were still fully operational. Starting from the 1990’s municipalities in Iceland began to collect their waste and formulate the currently existing waste treatment chain (Meyles, 2006). Waste generated in Iceland began to increase regularly over the past observed 40 years, together with the growing number of inhabitants. Ultimately, it led to the recognition of waste management as a profitable form of business, which started to attract potential domestic investors looking to enter the Icelandic waste management market. As a result, the number of waste treatment facilities has decreased and at the same time they became much larger than before, to maximize the efficiency of the waste treatment process, facilitate waste collection practices, and become more accessible for public (Meyles, 2006). The Ministry for the Environment in Iceland was founded in 1990, shortly after the Rio conference organized by the United Nations. Subsequently, Iceland became much more aware of the risks associated with poorly organized waste management and how it can affect the surrounding environment. A legislative document concerning the assessment of the environmental consequences of waste, in relation to Iceland, was prepared in 1993 and subsequently improved in 2000 (The Ministry for the Environment in Iceland, 2002). By 2004, the Environmental Agency had proposed a national plan for waste management, which has been constantly amended in order to keep up with gradually emerging new environment trends. Municipalities in Iceland have been authorized to develop their own management plans, if they will work accordingly to the national plan and fulfill all necessary requirements (Meyles, 2006). In 2002, the Icelandic government founded the Icelandic Recycling Fund (IRF) in order to adapt more quickly to EU legislation and enhance the rate of recycling in Iceland. The Icelandic Recycling
Fund was responsible for collecting recycling fees on end-of-life vehicles, hazardous waste or additional waste, which treatment and disposal of was related to additional expenses (Meyles, 2006).

In the course of time, the quantity of waste produced per capita in terms of GDP is assumed to regularly increase on an international scale, as environmental and economic expenses directly connected to landfill are predicted to grow simultaneously (Mazzanti et al., 2009). It has been estimated that by 2050 there should be roughly 500,000 inhabitants living in Iceland (Statistics Iceland, 2015). The majority of them will most likely live in the Greater Reykjavik Area (GRA). In the future, local government will need to address the issue of the steadily growing demand for more effective waste treatment (The Ministry for the Environment in Iceland, 2002). Continuous work done by local governments has allowed the Icelandic community to gradually be seen by the rest of the world as a recycling-oriented society, instead of a consumer society; however, additional effort is still needed in order to truly fulfill this goal (European Environmental Agency, 2016).

The next challenge faced by the Icelandic government would be to fulfill the requirements demanded by the European Union ahead of 2020, and continuously improve the national waste management plan to revolve around the concept of a recycling-oriented structure (The Ministry for the Environment in Iceland, 2002).

4.3. Icelandic law and EU regulations affecting waste management market

The current structure and content of the Icelandic National Waste Management Plan has been heavily influenced by waste management regulations issued by the European Union over a decade ago. After Iceland entered the European Economic Area (EEA) in 1994, the Icelandic government has been compelled to adopt the waste management directives and regulations formulated by the European Union. Prior to the decision of joining the European Economic Area, Iceland already had a collection of laws monitoring and coordinating the recycling of hazardous waste, landfill or additional harmful substances. For instance, law no. 56/1996, regulating hazardous waste fees, or law no. 52/1989, organizing a deposit system for steel, non-refillable aluminum, glass packaging and plastic. Nevertheless, they both have been succeeded by law no. 162/2002 on Recycling Fees (Meyles, 2006).

According to law no. 55/2003 regarding Waste Management it has been specified that the Environment Agency of Iceland is accountable for the implementation of the National Waste
Management Plan, which was initially published in 2004 (UST, 2006). Additionally, law no. 55/2003 is perceived as one of the most significant laws concerning Icelandic waste management, due to the fact that it is directly connected to other important regulations. In accordance with law no. 55/2003, three essential directives were published, regulation no. 738/2003 on waste in landfill, regulation no. 737/2003 on treatment of waste and no. 739/2003 on incineration of waste.

The Landfill Directive (1999/31/EC) issued by the European Union compels the member states of the European Economic Area to reduce the quantity of biodegradable municipal waste going to landfill. The directive states that the quantity of biodegradable municipal waste should be reduced to 50% in 2009 and to 35% in 2016, in comparison with quantities taken to landfill in 1995. Iceland has been given a four years derogation period.

The National Waste Management Plan issued in 2002 specifies that the municipalities in Iceland are urged to organize their own waste management plans. This objective has been, at this time, applied by the local authorities all around the country. In accordance with National Waste Management Plan directive no. 737/2003, it forces the municipalities to take responsibility for the collection, handling, and treatment of municipal waste.

4.3.1. Circular Economy Package

Recently, the EU has issued a circular economy legislation package, which consists of legislative proposals and an action plan, and revolves around the concept of a circular economy which will maximize the efficiency of using current resources. Instead of the traditional system of taking-making, consuming, and disposing of the goods, the circular economy urges industrial economies to reuse, repair, refurbish and recycle goods. The circular economy recognizes the need to evaluate and make appropriate changes in all stages of the product life cycle. According to the Circular Economy Package, all stages are linked with each other and adjustments made in the production process can have a direct effect on the quality of recycled materials in later stages.

The Circular Economy Package proposes a series of amendments to the already existing waste management directives, such as the Waste Framework Directives, the Landfill Directive, the End of Life Vehicles (ELV) Directive, the Waste from Electrical and Electronic Equipment (WEEE) Directive, the Packaging Waste Directive, and the Battery Directive. Additionally, the legislation introduces new common targets for levels of recycling and use of landfills for the state members. The present Waste
Framework Directive determines various types of waste, recycling, and recovery. In accordance with the directive, all types of waste need to be treated according to a particular waste management hierarchy.

The waste hierarchy explicitly describes the methods in which all types of waste should be treated. First and foremost, the generation of waste should be prevented by all possible methods, for instance, materials used for packing of goods should be environmentally friendly and firms should put more effort to not use them in excessive quantities. If prevention is impossible, then the local authorities should look at different practices, such as the reusing, the recycling, or the recovery of waste, exactly in this order. Disposal and landfill should be perceived as an ultimate method of disposal.

The directive integrates “extended producer responsibility” and the “polluter pays” rule into current structure of the European legal framework. Both principles specify that manufacturers and importers should be held responsible for any damage inflicted on the environment by their products or packaging. This way, the producer will more inclined to introduce more environmentally friendly products and packaging.

One of the primary objectives of the directive is to boost competition levels concerning the management of packaging waste. Member states are obliged to develop appropriate systems for the collection, the return, and the recovery of waste. All systems must be accessible to all interested parties and developed in such manner as not to use the system for discrimination or decreasing levels of competition. Member states should decide upon the fee, according to the polluter pays rule for the management of packaging waste.

In accordance with article 28 of the Waste Framework Directive, all member states are
obliged to guarantee that waste management plans are developed. The plans need to apply to the complete geographical territory of a member state. Additionally, the waste management plans shall be developed accordingly to the Waste Framework Directive. As soon as the waste management plan has been formulated, the member state must notify the EU Commission in order to evaluate its content. A similar procedure should be exercised in the case of the waste prevention program, which every member state is obliged to develop.

One of the crucial requirements for an efficient waste management strategy is to keep the data on waste constantly updated. Regulation no. 2150/2002 on waste statistics creates a legal framework which compels the EU and the EEA countries to consistently monitor data concerning production, recovery, and disposal of waste. Subsequently, the member states need to submit the statistics to Eurostat. All gathered data will enable the EU to monitor and assess implementation of the waste policies by the member states.

4.4. Icelandic Waste Management Market

In 2014, roughly 799 thousand tonnes of waste were produced within the boundaries of Iceland, of which five percent is classified as hazardous waste. The majority of the waste comes from soil, approximately 326 thousand tonnes, which is 41 percent of the total waste. Around 120 thousand tonnes were categorized as household and similar waste and 87 thousand tonnes fulfilled the criteria of the chemical waste (Hagstofa, 2016). The quantity of waste generated by Icelandic citizens is relatively low when compared with other European countries. For example, Poland in 2014 produced roughly 10,330 thousand tonnes of municipal waste (knoema, 2018). Certainly, it can be argued that such a substantial difference between countries in waste generation is directly related to the fact that Poland has many more inhabitants than Iceland.

Nevertheless, it means that the Icelandic waste management market is relatively small and can only support a limited number of firms.

Out of 799 thousand tonnes of waste, roughly 621 thousand tonnes was recycled or reused.

The remaining 174 thousand tonnes of waste were disposed by the method of landfill or incineration without energy recovery. The waste to energy recovery was around 3,819 tonnes. Roughly 90 percent of chemical waste was recovered, while 10 percent went to landfill or was incinerated. In case of the household waste, approximately 99 percent was incinerated or went to landfill (Hagstofa, 2016). Due to the adaptation of the Circular Economy Package, it is highly probable that the quantities of waste that went to
landfill will be gradually reduced. Thus, the Icelandic authorities will be compelled to find an alternative for landfill. This might result in formulating new waste management plans, which will prioritize certain types of the waste treatment process, such as incineration or anaerobic digestion. Alternatively, the Icelandic government might encourage the export of the waste to countries with much higher waste treatment capabilities.

![Registered enterprises and organisations](image)

Figure 2. Number of firms operating in the waste management market (Hagstofa, 2018)

As stated above in Figure 2, the Icelandic waste management market has been extremely stable, as the number of firms operating in the market did not change drastically. In fact, any attempt to enter the market is considered as an unusual practice and is closely monitored by their competitors. Since a large number of firms have been present in the market for prolonged period of time, it has allowed the competitors present in the same market to meticulously evaluate their strengths, weaknesses and capabilities. Thus, most of the companies are fully aware when and if they are allowed to compete with other firms. The key players in the market of collection, sorting and selling of packing materials are SORPA, an independent non-profit firm jointly governed by seven municipalities operating in the capital area, Íslandska Gámafélagið ehf., and Gámaþjónustan hf., which are considered as the two largest private waste management entities in Iceland. Additional firms present in the market are forced to
operate on a much smaller scale. In the case of the Icelandic waste management market, there is no presence of large non-domestic providers of municipal waste management services. Thus, domestic firms mainly control the market.

In terms of the turnover, the Icelandic firms gradually tend to generate larger revenues. In 2013, the operating income of the firms operating in the waste management market was estimated at the level of 11,648 million ISK, while in 2016 the number has increased to 15,030 million ISK (Hagstofa, n.d.). Nevertheless, it is impossible to fully determine how this number is divided between the organizations. Therefore, it does not need to be considered as a positive factor in terms of competition, as it can always indicate that the main actors have further increased their market share, while much smaller firms were forced to reduce the number of business activities, which will only widen the gap between the key players and other companies present in the market.

The number of employees seems to be decreasing. As of 2014, the companies operating in the waste management market have employed 864 workers, but in 2016 “merely” 703 people were legally registered as employees of such organizations (Hagstofa, n.d.). This can imply that the procedure of the waste collection and treatment is more dependent on the work conducted by the various machines, which will automatically reduce the number of people involved in the process. Additionally, the requirements for the waste management firms to hire an employee are much higher, thus it takes more time and effort to train a person prior to joining the organization.

4.5. Incineration of Waste in Iceland

Over the course of the last few years, the number of fully operational incinerators has been gradually reduced, in order to promote recycling and other methods of the waste recovery. Nevertheless, it seems that contamination of the livestock in Skutulsfjörður, due to the operation of a small waste incinerator, has had a tremendous impact on the current laws monitoring the process of the incineration of waste and the number of currently operating waste incinerators (Halldorsson et al., 2012).

It all started in the year 2000, when the European Union has issued a directive, which introduced strict controls on the maximum level of emissions coming from waste incinerators. Iceland was obliged to implement the directive due to obligations deriving from being a member of the EEA. However, Icelandic local authorities failed to do so. Nevertheless, under certain conditions Iceland has been granted an exemption to the directive. The Icelandic government was required to annually measure dioxin emissions from particular incinerators and fulfill emissions guidelines from a previously adopted
EU directive. Subsequently, after a five-year period, the exemption would be re-evaluated when technology would be more accessible and cheaper, therefore it will allow the local authorities to fulfill the requirements stated in the new directive.

The pollution measurements showed that dioxin emissions were well above the levels authorized by the EU regulation. One of the main reasons of the increased dioxin emissions is an unperfected or unclean combustion process (Þorvarðardóttir, 2011). High levels of dioxins can substantially increase the risk of cancer or other serious diseases. Nevertheless, the Ministry of the Environment and the Environment Agency did not take into consideration that high dioxin emissions might have a negative effect on the surrounding environment, thus further investigation of the issue was quickly abandoned. It eventually led to a situation where milk and meat from the valley of Engidalur was contaminated. The contamination was traced back to a municipal waste incinerator, which was operating in the valley. As a consequence, the Icelandic government was forced shut down the majority of incinerators. Currently, except for small incinerators present in a close proximity to the slaughterhouses (which incinerate the leftovers of the meat undergoing the slaughtering process that are not intended for consumption), only the Kalka incinerator plant is authorized to incinerate waste.
5. Research Methodology

For the purpose of the study, qualitative semi-structured interviews were utilized. The questions were prepared in advance according to a particular framework and subsequently slightly modified for every single participant separately. The necessity to modify the questions resulted from the requirement to take into consideration the interviewee’s field of expertise and currently held position within the firm or organization.

While quantitative research is used more commonly in topics directly related to international business (Doz, 2011), the author chose to apply the qualitative research method. The choice of the qualitative research method as the primary tool providing relevant data for the study was mainly motivated by the desire to identify the major trends shaping the market, as well as the market characteristics. Qualitative research primarily helps to identify the issues and processes which cause the emergence of the issue, while a quantitative research method is extremely helpful when the researcher is required to show the magnitude of the particular issue (Javalgi, Granot & Alejandro 2011). Therefore, utilization of the qualitative research method will be more beneficial for this study.

5.1. Data Collection

The collection of the data can be divided into two parts: collection of the primary data and collection of the secondary data (Walliman, 2009). The primary data mainly consisted of the interviews, which were conducted with managers and top directors of the local firms operating in the waste management market. Interviews were performed during the period from 15th January to 28th March. Nine interviews were conducted in person, while one respondent answered the questions by email. The length of the interviews varied from 20 minutes to 67 minutes. All the interviews were recorded on the phone of the author of the thesis. All interviewees were requested to answer the questions in English. Two interviewees chose to not include their real names in the study but permitted the author to refer to their interviews by using their positions within the organization. List of all interviewees along with their firm’s names is presented in appendix II.

Secondary data were mostly collected from independent and reliable databases, such as Eurostats, the World Bank, the National Statistics Office (Hagstofa) and the Organization for Economic Co-operation and Development. Subsequently, the data was
compared with the reports published by government institutions, such as the National Competitive Authority or the European Commission.

5.2. Sample size and selection criteria for interviewees
The participants in the investigation were managers, top directors of the local firms operating in the waste management market, along with employees of government institutions and National Environment Agencies. Due to the pressure of time, the author was required to carefully select interviewees who would most likely have a chance to influence the result of the study and provide relevant data. Therefore, the author focused mainly on large domestic firms and ignored much smaller companies and organizations. As a result, the author chose to make use of the purposive sampling technique. Out of eleven potential respondents two rejected the offer of the participation in the study. In order to achieve the theoretical saturation, qualitative analysis typically requires a much smaller sample size compared to quantitative analysis. However, at the same time, it is impossible to recognize particular rules which will help to determine an appropriate sample size in qualitative research. Therefore, qualitative sample size should be mainly determined by the availability of the resources and objectives of the study (Patton, 1990)

5.3. Data Analysis
In accordance with the statement proposed by the Taylor-Powell and Renner (2003), it is impossible to identify one universal qualitative analysis method. The approach for analyzing and interpreting data is mainly based on the questions to be answered, the needs of those who will make use of the study and the availability of resources. While taking into consideration that the main objectives of the study are to recognize the most dominant trends in the market, which resulted in the absence of the large non-domestic providers, and to identify the most suitable market entry mode, the author chose to apply a deductive approach as the primary method for the data analysis. The process of the data analysis began as soon as the author concluded the interviews with all participants. All interviews were conducted in person and were recorded, listened to repeatedly, and ultimately summarized in order to identify the most prevailing themes emerging throughout the conversation with the interviewees.

5.4. Interview Framework
Prior to formulating the questions used for the interview, the author of the investigation read numerous articles discussing in detail international entry modes, the legal
framework affecting the business activities of firms operating in the waste management market, as well as factors necessary to develop competitive business environment. The interview framework and questions sought to identify and investigate the possible rationale for international firms to enter the Icelandic waste management market and identify factors necessary to improve competition levels among private and public companies. Interviews with local companies, experts and shareholders from the waste management market were conducted in order to acquire the knowledge necessary to make a well-informed statement regarding the Icelandic waste management market. The interview framework along with all used questions has been presented in appendix I.

5.5. Research Limitations

The author of the thesis has experienced certain issues in the process of securing and conducting interviews with the stakeholders affected by the performance of the waste management market. Despite their willingness to participate in the investigation, the interviewees were not allowed to disclose certain types of information which might result in damaging the market position of the firm. Thus, in some instances, the interviewee did not want to answer the question, answered the question partially or discussed particular matters which were not directly associated with the main topic of the investigation. A certain number of interviewees did not find time to meet personally, thus the author was forced to use email as an interviewing medium. As a result, it interrupted the flow of information and significantly prolonged the process of gathering data. The limited number of interviewees did not allow the author to fully determine if the theoretical saturation has been achieved. Additionally, the scarce number of articles and outdated information directly related to the Icelandic waste management market had a substantial impact on the quality of the study.
6. Competitive analysis of Waste Management companies

This chapter will provide an overview of the main actors operating in the waste management market in Iceland, as well as the political institutions affecting willingness to enter the waste management market. This examination will include firms specializing in the collection of various classes of waste. The author has selected the following companies based on interviews with the local experts and his personal observations.

6.1. Efnamóttakan hf.

Efnamóttakan was founded in the year 1998 and specializes in the collection and treatment of hazardous waste destined for disposal or recovery. The firm is owned by the Gámaþjónustan company and operates as its subsidiary. The company possesses environmental certificate ISO 14001 and operates according to the ISO 9002 quality standard. Efnamóttakan employs 12 people with sufficient experience and education to perform activities directly linked to the disposal and recovery of the hazardous waste. Efnamóttakan have been authorized by the Environmental Agency to receive annually up to 7,900 tonnes of hazardous waste, electrical equipment and other waste which can undergo further treatment (Executive Manager at Enfamóttakan, personal interview, 8th February 2018). Over the course of the past few years, the firm has worked with other organizations operating in Swedish, Danish and French waste management markets. As a result of this cooperation, Efnamóttakan, along with its partners, is acknowledged by the Environmental Agencies present in these countries as a professional party, specialized in the collection and treatment of the hazardous waste (Executive Manager at Enfamóttakan, personal interview, 8th February 2018).

6.2. Hringrá

Hringrá is a waste management company which performs metal recycling and hazardous waste disposal. Therefore, the organization accepts all scrap materials, car batteries, tires and other hazardous waste. The company employs 40 people. The firm also specializes in various demolition projects, for instance, the company was responsible for removal of eight oil tankers located at the bottom of Hvalfjörður in 2005 and demolishing the Mannvirkið Salt Factory in Reykjanes in 2010 (D. Jóhannesson, personal interview, 20th February 2018). The company has established a strong partnership with the Sims Metal Management organization. The Sims Metal Management firm receives and processes scrap iron which has been exported from Iceland. In terms of domestic collaboration, Hringrá has a sister company, Efnarás,
which previously existed as a department of Hringrás, responsible for the collection and treatment of hazardous waste, but gradually evolved into a separate business entity. The firm is also cooperating with Vaka hf., a company whose main activities revolve around the demolition of automobiles and the sale of various spare parts. Hringrás has ongoing contracts with Gámaþjónustan and Íslenska Gámafélagið, regarding receiving or transferring of particular types of waste. Additionally, the organization is a member of the Bureau of International Recycling and the Nordic Recycling Federation (D. Jóhannesson, personal interview, 20th February 2018)

6.3. Gámaþjónustan
Gámaþjónustan was founded in 1983. The firm operates widely across the country. The main activities of the firm revolve around the collection, sorting and recycling of waste. Furthermore, the organization offers various services, such as the rental of waste containers and portable toilets for different companies or individuals, street cleaning, consulting work and transport of machinery (Gámaþjónustan, n.d.). The firm is considered as a direct rival to Íslenska Gámafélagið. Gámaþjónustan is in possession of a fully operational sorting and transfer station located at Berghella in Hafnarfjörður. The firm has seven subsidiaries, such as Efnamóttakan, which are located in different parts of Iceland. The company utilizes more than 75 trucks and over 3,000 containers for various business operations which are directly connected to the treatment of waste. In 2013, Gámaþjónustan incorporated the ISO 14001 certificate to their environmental management system (Gámaþjónustan, n.d.).

6.4. Íslenska Gámafélagið
Íslenska Gámafélagið was established in 1999 and currently is recognized as one of the biggest firms in the Icelandic waste management market which specializes in providing waste collection and recycling services. Nevertheless, the firm’s portfolio is much more varied as the organization is capable of providing their clients with complete solutions, such as pavement cleaning, snow removal, street cleaning or offering consulting services directly associated with the field of waste sorting and recycling for local firms or citizens seeking advice (Marketing Manager at Íslenska Gámafélagið, personal interview, 14th February 2018). Íslenska Gámafélagið is responsible for providing the service to roughly 3,000 companies and 100,000 Icelandic households. The organization employs 300 people, who are divided between fourteen operational units spread around Iceland. Íslenska Gámafélagið possesses roughly 10,000 plastic containers and 2,000 iron containers which can be rented to various institutions,
companies or individuals. Íslandska Gámafélagið was the first Icelandic firm operating in the waste management market which chose to introduce the environment standard ISO 14001 and ISO 9001 quality certificates, which would set out the criteria for their management quality system (Marketing Manager at Íslandska Gámafélagið, personal interview, 14th February 2018).

6.5. Icelandic Recycling Fund

The Icelandic government chose to not implement incineration and landfill taxes, which were considered as a common practice in other European countries, as following regulations would merely increase the overall costs associated with the waste treatment and simultaneously fail to increase recovery, recycling and reuse of waste produced in the country. Therefore, law no. 162/2002 on Recycling Fees was introduced, replacing law no. 59/1995 on Hazardous Waste Fee. As a result, it led to the formation of the Icelandic Recycling Fund, which ultimately superceded the Hazardous Waste Committee (G. Sverrisson, personal interview, 22nd February 2018).

The Icelandic Recycling Fund is a state-owned organization reporting directly to the Ministry of the Environment. The board is composed of representatives from both the public sector and the private sector, thus ensuring that any business activities conducted by IRF will not excessively promote firms operating in a particular sector. The board consists of five people elected for a four year term. The Minister of the Environment appoints the Chairman, while other board members are nominated by the Association of Municipalities, the Retailers Confederation, the Confederation of Trade and Industry, and the Confederation of Icelandic Fisheries and Agriculture respectively.

The main objective of the Icelandic Recycling Fund is to reduce the quantity of waste going to landfill and encourage the firms, through economic incentives, to identify the material recovery practices as more profitable actions both for the company and the surrounding environment. Additionally, the Icelandic Recycling Fund attempts to organize economic conditions in such a manner that the majority of firms operating in the waste management market will recognize the profits of being actively involved in the waste processing procedures.

In order to acquire sufficient financial resources to finance these operations, the IRF is legally permitted to collect a recycling fee on all manufactured or imported products, which are stated in the regulation. Thus, all producers and importers, including associations, municipalities and their undertakings, state agencies, the Treasury, funds and institutions, foreign contractors or any other entities manufacturing or importing
products are legally compelled to pay the recycling fee (G. Sverrisson, personal interview, 22\textsuperscript{nd} February 2018).

The recycling fee should cover all recovery costs on any type of waste remaining after the product has reached the end stage of its service life cycle, as well as all costs associated with the transportation of the waste from a collection station to a recovery point or a central accumulation station, where all waste would be either reused, recovered, disposed, or reshipped to other location.

In case the product stated in the Recycling Fee Regulation would be exported out of Iceland, the exporter can claim a fee refund, even if the product will not be subjected to further reprocessing techniques in a destination country.

The Recycling Fund is permitted to negotiate the amount of fee refund with organizations which are inclined to apply the recovery practices for their own waste.

The Recycling Fund is compelled to calculate the amount of a recycling fee based on the estimates of the overall costs of processing the waste.

Products included in the Regulation on Recycling Fees are categorized into a few classes, such as packaging, plastic hay bale wrap, tires, vehicles, hazardous substances and fishing gear made of synthetics. Each category has a different recycling fee, as various products require dissimilar amounts of recycling, in order to support the expenses of treating the waste. Through classification of waste to different categories, the Recycling Fund attempts to prevent the transfer of expenses from one product class to another.

In order to change the current amount of recycling fees for a particular product category, or suggest other products which would be subjected to the recycling fee, the board of the Recycling Fund is required to submit a proposition to the Minister of the Environment. The need to alter the amount of the recycling and refund fee can derive directly from necessity to achieve higher recovery rate of particular product, or adjust the recycling refund to constantly fluctuating waste processing costs. While arranging the proposal concerning a new product being subjected to the recycling fee the Recycling Fund must take into the consideration current government policies regarding waste. Subsequently, the proposal is received by the Minister of the Environment, who is compelled to introduce the proposal concerning subjecting new goods to recycling fee or altering the amount of the recycling fee to the Minister of Finance. Finally, the Minister of Finance presents the bill to the national parliament of Iceland.
In order to benefit from the refund fee granted by the Recycling Fund, the waste collection provider is required to sign an agreement, which will deliberately specify methods utilized for collection and disposal of the waste, as well as information regarding third parties if the waste processed by other company. These actions are undertaken in order to assess if the processes will occur in accordance with existing law and regulations. The Recycling Fund is not obligated to pay the recycling refund to the firms providing collecting waste services, unless a legally recognized company receiving the waste destined for reuse, recovery or disposal will authenticate its acceptance (G. Sverrisson, personal interview, 22nd February 2018).

Over the course of the past few years, activities performed by the Icelandic Recycling Fund have been mainly supported and praised by both the public and the commercial sectors. The Recycling Fund is considered as a neutral organization, as its presence in the market did not require it to establish its own separate collection and management system. Nevertheless, as a result, the Recycling Fund is heavily dependent on the capacity of current service providers operating in the waste management market. Therefore, the service providers will seek to secure as much of the waste subjected to the recycling fee as possible, as they will regularly receive payments from Recycling Fund. It might be slightly problematic when considering that public entities can also benefit from the refund fees, thus by utilizing exclusive rights to certain classes of waste, municipally-owned organizations might determine the number of competitors in the market, or formulate a public procurement contract in such manner that the majority of waste will need to go through their own waste management system.

6.6. SORPA

SORPA is a non-profit intercommunity municipal firm located in the capital city of Iceland, Reykjavik. SORPA was founded in 1991 and it is owned and governed collectively by seven municipalities: Reykjavík, Kópavogur, Garðabær, Hafnarfjörður, Álftanes, Seltjarnarnes and Mosfellbær. SORPA operates the landfill in Álfsnes, bailing and sorting station in Gufunes, recycling stations as well as much smaller collection points commonly called drop-off centers. Additionally, SORPA is responsible for handling all waste from all the municipalities which are considered as the legal owners of it. Nevertheless, collection of waste is not a responsibility of SORPA, as almost all municipal waste collection services in each municipality are being outsourced to independent third parties. On its own, the municipality of Reykjavik decided to establish a municipally-owned firm responsible for the collection of municipal waste.
generated in the capital area. Through mutual agreements, SORPA is allowed to introduce propositions regarding potential coordinated projects between the firms and municipalities, and present market solutions which will maximize the efficiency of used resources in waste management. Nevertheless, the municipalities are not legally compelled to adopt these propositions, thus the proposal even can be easily rejected at any stage of its implementation, even if the municipality has initially agreed to introduce it (R.I. Hallðórsdóttir, personal interview, 10th March 2018).

In the year 2000, SORPA established a gas refining and production plant at Álfsnes in order to produce methane from the landfill gas. The methane collected at the Álfsnes plant can be used as fuel for bi-fuel vehicles, and is recognized as an alternative for fossil fuels. SORPA founded a subsidiary “Metan” for the purpose of running the plant and informing large number of firms and individuals regarding the availability of the methane (Metan, n.d.)

The newly introduced Circular Economy Package has forced the member states to decrease the quantity of the waste sent to landfill, subsequently debilitating the current market position. In order to maintain their market share, SOPRA was compelled to invest a substantial amount of money to expand the biogas plant and provide the fuel to a larger number of vehicles. This business strategy can have a direct impact on the overall shape of the Icelandic waste management market as it can cause certain waste streams to be diverted to SORPA’s treatment facility to keep it operational, subsequently preventing other firms from treating specific waste factions.

6.7. Suðurnes Incinerator Authority

Sorpeyðingarstöð Suðurnesja sf. (Suðurnes Incinerator Authority) is owned and run by the municipalities of Reykjanesbær, Grindavík, Sandgerði, Garður and Vogar. The purpose of the company is to own and operate the Kalka incinerator plant and reception center in Helguvik.

The total amount of waste that was accepted in Sorpeyðingarstöð Suðurnesja sf. in the year 2016 was 14,662 tonnes, which is an 8 percent increase from the year 2015. The incinerator plant Kalka burnt 11,019 tonnes of waste, which is roughly 640 tonnes more than the year before. There were 1,601 tonnes of waste destined for recovery / recycling, while 2,042 tonnes were sent to landfill (I. Karlsson, e-mail interview, 30th October 2017). The operation of waste incineration is subject to strict rules. It is not permitted to exceed specific emission limits at a time. Kalka is working in accordance with Icelandic regulations 785/1999 and 739/2003. While the quantity of waste destined
for incineration seems to be increasing, it is highly unlikely that incineration will become the main waste treatment method. Because of the abundance of renewable energy in Iceland, it is not required to rely on the incineration process to produce the electricity. Therefore, the presence of the incinerator is mostly associated with the fact that, in some instances, incineration is the only safe method to dispose of certain waste.

6.8. Conclusions

Based on the analysis performed in the previous chapter, it is possible to conclude that the absence of large non-domestic providers in the Icelandic waste management industry has resulted in the increased activity of the local companies. The main strengths of these domestic firms are their long-term experience and substantial knowledge regarding the Icelandic waste management market. Any attempt to compete with these local enterprises can be highly problematic for any entrant, as through their prolonged presence in the market, domestic companies have established relatively strong market positions. Additionally, due to the small size of the market, all firms are forced to cooperate with each other, as many organizations have ongoing contracts with additional companies operating in the Icelandic waste management market, regarding the change of possession of certain waste classes which can be treated by other firms with a much higher treatment capacity. Therefore, the entrant will be forced to rapidly establish a business network and ensure satisfactory level of business relations the in order to secure a stable market position.
7. Competition and Innovation in the Icelandic waste management market

This chapter will analyze the concepts of the competition and innovation as well as the complexity of relationships between them in terms of the Icelandic waste management market. Both sectors, public and private, will be separately analyzed in order to determine possible restrictions and incentives for innovation. Ultimately, the chapter will focus on the firms operating in the waste management market and their reasons for investing in innovation.

7.1. Competition as a tool stimulating innovation

It has been generally acknowledged that innovation functions as a key factor responsible for the development and transfer of newly acquired knowledge into more advanced goods, services, businesses, and business operations, which stimulate the growth of the market as well as the overall economy of the country. Many studies show a strong correlation between investments in knowledge, such as, research and development or education and economic growth (Griliches, 1992). In order to support innovation, the local authorities are obliged to introduce relevant policies which will propose larger incentives for innovation. Competition, along with the introduction of appropriate competition policies can be determined as one of the possible methods which can stimulate the number of innovations in the market.

Within the competitive environment, if a company fails to follow technological trends it will gradually lose its market share and eventually the firm might be forced to exit the market and be replaced by more innovative rivals, even if the firm previously held the position of market leader. Simultaneously, innovation is considered as a lengthy and hugely expensive process and the firm will not be able to retrieve invested financial resources until the investment starts to generate the money, which usually occurs in much later stages of the product life cycle. Thus, firms often rely on attempting to anticipate and take advantage of newly emerging market opportunities as, in their opinion, it is the most effective method of competition.

Schumpeter (1950) claims that the market leaders, through achieving temporary monopolies, are able to provide sufficient incentives for their competitors to imitate their actions and also invest a substantial financial amount to gain a competitive advantage. This statement was questioned by Arrow (1959), who believed that the existence of more competitive environments should provide required incentives for the
firm to invest bigger amounts of financial resources in innovation, without additional pressure from the competitors. Both views seem to support the statement that there is a strong correlation between innovation and competition. Nevertheless, both authors propose two different reasons for pursuing this practice. While innovation is commonly considered to have a positive impact on the growth and development of the market and economy, but due to being strongly linked to competition it’s also significant to evaluate the role, content, and impact of the competition policy. Competition policy heavily affects the competitive environment along with the rationale for using innovation. Innovation should be perceived as a natural course of action of any firm attempting to increase their market share and deliver a better quality of service or product. It cannot be used as a competition tool employed by the market leaders in order to eliminate competitors and increase the market barriers. According to the Darwinian effect, managers are often compelled to embrace new technologies due to intensified pressure of the competitors and higher competition levels in relation to the delivered product. Failure to keep up with the technological breakthroughs introduced by the competition can result in the bankruptcy of the firm. Thus, the managers are forced to innovate if they wish to survive in the market. Various studies have attempted to assess if the intensity of competition has a direct impact on the incentives to innovate, as it been generally acknowledged that firms usually tend to invest in innovation due to the belief that it will increase their profits and market share (Bonano & Haworth, 1998). Nevertheless, an increase in the number of competitors does not necessarily mean that the firms will automatically transfer more financial resources to the research and development department in order to innovate more. Furthermore, it seems that by increasing the number of companies in the same market diminishes the importance of research and development departments and the willingness to innovate. Meanwhile, a growing market size and a bigger variety of products offered by the competitors motivate the firms to be innovative. Nevertheless, the growth of the market might have questionable effects on the number of offered products by firms operating in the same market. Additionally, it is crucial to take into consideration that the difficulty of market entrance has a direct impact on the competitive environment and subsequently willingness to innovate (Vives, 2008).
7.2. The interdependent correlation between competition policies and innovation policies

In order to introduce a successful innovation policy, local authorities are compelled to evaluate if other public policies in connected fields might affect the efficiency of the innovation policy and not create cases where the firm can exploit the issues deriving from contradicting content of the policies. Due to a strong correlation with innovation, the competition policy should be thoroughly investigated in this context. The competition law is directly associated with static efficiencies, where the firms are more encouraged to refine the products, services or processes and achieve the competitive advantage in shorter period of time (Nordic Competition Authorities, 2013). Nevertheless, innovation is related to dynamic efficiencies, where the firms need to develop new products, services, or processes. Profits gained from the prolific use of the dynamic efficiencies are manifested in a much longer period of time. The local authorities need to ensure that firms will be able to operate in a competitive environment, but at the same time motivate firms to be more innovative. It is extremely hard to predict if certain practices conducted by firms should be prohibited by the competition law, due to having negative short-term effects on the market or if the competition authority should intervene, as these actions will ultimately lead to invigorating the market, enabling the firms to be more innovative and producing long-lasting positive long-term effects. It is much easier to assess how various actions will affect the shape of the market in the short or medium term. The competition law needs to be more flexible to allow for a competitive authority to approach the issue from different angles, but at the same time be clear and precise for the firms to not produce situation where the law can be interpreted in an ambiguous manner. The primary objective of the innovation policy should be to trigger a dynamic economic process which will ensure that, throughout constant interactions of the economic actors, the quality of products and services along with business operations will be constantly improved (Kyläheiko & Virtanen, 2007). By declaring to use a continuous innovation process, the economic actors can secure a constant flow of dynamic efficiency profits, establish a competitive environment and limit the negative factors of the static efficiency. Nevertheless, it should be noted that the effective competition policy should be considered as necessary requirement to introduce a successful innovation policy and not the other way around. Through successful coordination of the competition and innovation polices, the local authorities are increasing the chances of providing
necessary business environment for the firms to be more innovative and do not fear the possible repercussions of investing substantial financial resources to obtain profit in longer period of time.

7.3. The differences between private and public-sector innovations

In accordance with economic theory, firms operating in the private sector are expected to act according to economic rationality, thus taking advantage of market opportunities, improving performance, and reacting to constantly emerging challenges resulting from choices of a particular market (Viscusi et al., 2005). Additionally, it’s crucial to take into consideration business activities conducted by competitors, as well as pre-establish business objectives closely connected to the size of the firm and currently held market position. Much smaller private companies are often forced to adjust their innovation strategies to the actions conducted by larger organizations that may control the supply chain. The correlation between an organization’s attitude and economic reward is often recognized as primary reason for the private entity to pursue development of innovation. Thus, the benefits of innovation are much easier to quantify in private enterprise as return on investment is perceived as primary assessing tool. Additionally, in the private sector innovation should pay off in much shorter period of time as focusing too much on the innovation process can lead to a situation where the firms will gradually start to lose the market share.

Public entities are more interested in introducing policies which will benefit the society, rather than pursuing profits, and provide fundamental services for citizens in market segments where private entity will most likely fail to deliver the service in an efficient and equitable manner.

Publicly owned enterprises are obliged to operate in a more politically legitimate manner compared to the private entities, thus being affected by restrictions and incentives exclusively reserved to the public sector in relation to the governance of the public services.

The size of public enterprises and number of business activities they perform in the market are directly affected by political decisions rather than their performance in the market or specific market indicators. Thus, the relationship between revenues and quality of the services provided may be imprecise. Gretschmann (1991) argues that if the objectives and goals of organization operating in the public sector are obscure or are subject to frequent alterations then it is extremely hard to determine which factors contribute to particular output. Therefore, it is highly disputable whether financial
incentives can promote innovation among public entities as the organization is forced to operate under stricter legal conditions and generally their actions affect larger and more diverse group of shareholders.

The private sector is generally characterized by fierce competition between companies to supply the market. Without taking into consideration anticompetitive regulations it is safe to assume that companies mostly compete by supplying the products or services in a more cost-efficient manner or deliver higher quality goods or services. Alternatively, the firms can introduce products or services which will act as a substitute for currently existing ones or establish new markets. Nevertheless, the same scenario can’t be applied to the public sector as public entities are generally the primary service provider and are not compelled to compete in order to maximize their profits. Therefore, absence of competition can lead to a lack of incentives necessary for improvements of the publicly owned organizations. However, this statement might appear to be rather simplistic as despite the lack of competition between firms in the market it is possible to observe internal competition for available resources among various individuals and projects within a public entity. A large number of workers pursue careers within public organizations due to idealistic motivations, and therefore it is crucial to encourage the workforce to introduce and influence the innovation process which may improve the quality of public services. In the private sector, the nature of workforce can differ substantially, as relations between management and employees can vary depending on the firm’s culture. Therefore, employees are rarely consulted regarding organizational or technological changes.

Relations between end-users of the products or service and private entities appear to be straightforward. Private firms define customers as the end-user and require constant feedback in order to evaluate if newly introduced innovation will satisfy the needs of the clients. While the public sector provides the service to the general public and the end-users are traditionally identified as citizens. The public entities are required to operate according to pre-established regulations which prohibit them from charging an excessive amount of money, thus the price is not a feedback mechanism but rather an indicator of the quality of the service. Publicly owned enterprises are compelled to monitor the satisfaction level among the citizens receiving the service, as there are greater personal and political consequences of poor performance compared to firms offering services in the private sector.
7.4. Barriers to Innovation

Barriers to innovation can be classified as either internal or external. Internal barriers are directly connected to the distinct governance and organization of the business. These barriers suggest that an existing enterprise attempts to oppose changes and introduce adoption barriers closely related to path dependency and dominant designs. Undue administration systems in large organizations may heighten adoption barriers. Mindset barriers are considered as an additional type of internal barrier and are directly associated with the inability to comprehend that the market is constantly changing, and in order to increase the market share the organization is required to adopt new market solutions and exploit newly emerging market opportunities. Risk barriers are closely related to excessive dependency on experience and habitual activities. Finally, nascent barriers prevent the organization from promoting independent thinking skills among their workers and also prevent them from efficiently managing the innovation process.

External barriers to innovation present in the private sector usually arise when the organization is compelled to interact with additional businesses, institutions or other third parties in the economic system governed by poorly constructed regulations, polices and rules. The transfer of technologies, standardization of regulations, access to skilled workforces and financial incentives for innovation can substantially minimize the impact of external barriers on their willingness to innovate.

The main barriers to innovate in the private sector can be usually identified by the deficiency of financial resources within an organization and in difficulties in receiving financing from government grants, credit institutions, commercial banks or venture capital. Additional barriers are related to a lack of skills and knowledge necessary to govern the intellectual properties, control the exchange of information with economic actors outside the boundaries of an enterprise, and ultimately manage open, user-driven, technological innovation processes within the organization. Lack of the information necessary to gain access to new service markets and produce more advanced products, insufficient skills in the commercialization process, lack of cooperation with external economic agents, poorly developed business networks and shortfall of the data necessary to enter international markets are also considered as external barriers to innovation.

Innovation processes taking place in the public sector are usually prevented by insufficient financial incentives for increasing efficient business activities and a lack of competition in the market. Many public undertakings are only willing to accept a low
level of risk on their investment, thus being more inclined to more risk-averse behavior as their business activities usually affect a bigger number of stakeholders and are more meticulously monitored by local authorities. Therefore, major innovation, in most cases, requires authorization from the governing body, which considerably prolongs the process of implementing new innovation or exploiting market opportunities. Furthermore, a large number of public services and administrations are heavily affected by newly introduced reforms and policies, which produce an unstable environment and efficiently prevent from evaluating the impact of the innovations implemented. A lack of flexibility in regulations and laws does not allow the municipally owned enterprises to adjust their operations to promote innovation (Bloch, 2011). Public entities are characterized by their resistance to changes. Various attempts to reorganize the intuition or alter the method used to deliver the service are often fruitless, especially if the public entity is not sufficiently informed about profits coming directly from the changes (Carstensen & Bason, 2012).

7.5. Innovations in Iceland
The financial crisis which occurred in 2008 had a direct impact on the collapse of the Icelandic financial system, and also was indirectly responsible for reevaluating the significance of science, education technology and innovation as factors leading to economic growth inside the country. Currently, the Science and Technology Policy Council has been established and functions under the guidance of the Prime Minister. The council is responsible for stimulating technological progress and scientific research in order to lay a solid foundation which will help to promote Icelandic culture and enhance the competition levels within all possible sectors of the Icelandic economy. Public policies introduced by the council emphasize the significance of the continuous use of innovation and scientific research, as the council considers them as the main factors responsible for stimulation of economic growth. Furthermore, the council determines that the development of new technologies and properly applied knowledge can create brand new opportunities for Icelandic business sectors and communities. The Icelandic Competition Act does not directly specify that innovation should be regarded as one of the main goals of the act. Nevertheless, article 15 of the act states that the Icelandic Competition Authority, in certain cases, is authorized to not intervene even if the firm has violated the law by pursuing a collaboration with another company and thus decreasing competition levels within the market. In order to not suffer the legal consequences of their actions, the firm needs to greatly contribute to promoting
economic or technological progress or enhancing the production system and quality of the goods or services delivered (Nordic Competition Authorities, 2013).

7.6. Rationales of the innovations in the Icelandic Waste Management Market

The current situation in the waste collection market does not encourage private entities to prioritize an innovative approach and develop new market solutions. The private sector is mainly dominated by Gámaþjónustan and Íslenksa Gámafélagið. Both firms have sufficient capacities to innovate, however the current market structure does not provide enough economic incentives to prioritize the innovation process. A lack of substantial investment in heavy infrastructure forces the private entities to cooperate with each other and make use of each other’s infrastructure (M. Kristjánsson, personal interview, 28th February 2018). Therefore, the competition is not as severe as in other nations. Both companies have similar market share and revenue. Any attempt to secure a contract with a company or municipality where the other party operates is usually ineffective in the long term as the business entity is often obliged to provide the service at a reduced price. This strategy cannot be applied several times as the firm will not be profitable enough. Furthermore, it is highly likely that the competitor will ‘price match’ as a business strategy, therefore maintaining the status quo in the market. The companies are often more focused on investing in light infrastructure, such as better-quality bins or lorries in order to ensure more quicker and smoother collection and sorting processes, resulting in greater revenues. The main incentive for innovation comes directly from the international waste receivers, which are requiring better quality waste prior to commencing the treatment procedures. It can be argued that the recycling refund provided by the Icelandic Recycling Fund should serve as sufficient incentive to introduce new market solutions, however, the Recycling Fund merely ensures that the waste is disposed of in the manner corresponding to the national regulations. Furthermore, the Recycling Fund often regulates the international gate fees stipulated by the international waste receivers, which make the process of exporting waste profitable for the domestic firms. Nevertheless, it should be noted that lack of innovation can eventually lead to a situation where the waste receiver will refuse to accept poor quality waste and the local firm will be forced to look for alternatives, which can have a direct impact on the productivity of the whole Icelandic waste management market.

On the other hand, the public sector represented by SORPA is mainly focused on fulfilling the EU legislation and safeguarding the natural environment. Therefore in
their opinion it might be crucial to replace the landfill with a brand-new treatment method, which will allow the municipalities and their citizens to benefit from the treatment facility. Due to various conditions, such as an abundance of renewable energy and a low quantity of generated waste, Iceland has not been able to fully utilize various treatment methods, which has ultimately resulted in increased quantities of waste shipped over to other nations with much higher waste treatment capacity. Nevertheless, recent investments made into the biogas plant might suggest that in the near future anaerobic digestion will be considered as a primary treatment method of waste within the country.
8. Establishing and governing waste markets

The municipalities act as a key player in the waste management market for both legal and historical reasons. They are compelled to make sure that household waste is handled in a proper manner, but at the same time they can almost, without restriction, utilize exclusive rights to the treatment of the household waste. In many instances, municipalities are responsible for organizing and managing the waste management services. Furthermore, municipalities, or other political institutions performing tasks at the same governmental level, are often directly involved in the monitoring processes of the various entities operating in the market. Lastly, municipalities along with the municipally owned organizations usually provide waste management services to certain communities, thus regularly competing with private entities.

Waste management markets can be defined as value chains where the productivity of every single link has a direct impact on the effectiveness of other sections of the value chain. The value chain along with market mechanisms are often acknowledged as the main factors responsible for establishing a framework that will enable the municipalities to organize their waste management system in most efficient manner. At the same time, the method selected by the municipalities to arrange their waste management organization can potentially generate a set of possible organizational issues, which will ultimately cause distorted competition.

The following chapter will discuss the role of the municipalities in developing and regulating waste management markets, as well as the advantages and disadvantages of various organizational models. Additionally, issues deriving from the barriers to trade and pros and cons of public the tendering process will also be investigated.

8.1. The waste market value chain

The waste market can be represented by a chain where every single link represents a different stage of the waste treatment process. A sudden decrease in productivity in any stage can lead to the worse performance of the entire system. It is possible to distinguish the three main stages in the waste value chain: the collecting, sorting and treatment of waste. Nevertheless, prior to collection, the waste should be classified into two primary types: commercial or household waste. Thus, classification of the waste is considered as the first stage in the waste value chain. Each category of waste is clearly described in the national legislation introduced by the local authorities. The definition of waste can vary depending on the country, as in some instances waste is classified based on its source or its type. In the case of Iceland, the origin of the waste determines its category.
The next stage in the waste value chain is waste collection. In Iceland the municipalities enjoy exclusive rights to the municipal waste, due to the structure of the legal framework. Nevertheless, collection services for household waste are often contracted out by municipalities. The collection of household waste within the Greater Reykjavik Area is not conducted by a private firm, as the City of Reykjavik decided to establish a municipally owned firm which will be responsible for this task. The collection of the household waste is mainly arranged through curbside collection, but certain types of household waste, which is included in the Extended Producer Responsibility scheme, needs to have special collection stations. The municipality is not responsible for the collection of commercial waste. Individual business entities should ensure that their waste is properly disposed of. Commercial waste that falls under the Extended Producers Responsibility scheme is frequently collected from private businesses with the regular waste, as additional waste classes. The collection process is mainly financed either by the owner of the waste, households, or commercial businesses. Subsequently, the waste is transported to a waste transfer station where it will be sorted according to its class and features, such electronic waste, recycling material, bio-waste, combustible waste, and hazardous waste. After the sorting process is completed, the waste is securely packaged and moved to a proper treatment facility, except if the waste fulfills all conditions necessary to be sent to landfill. The treatment of the waste is considered as the third stage of the waste value chain. It is possible to identify four primary kinds of treatment facilities which specialize in material recovery; composting facilities, recycling facilities, incineration facilities, and hazardous waste treatment facilities. Composting facilities convert bio-waste into methane fuel, recycling facilities produce secondary raw material from received waste, and hazardous waste facilities along with incineration facilities generate electricity and heat. The performance of the treatment facilities relies upon the efficiency of the sorting processes, the type of waste received and the technology used. Furthermore, the efficiency of collection, treatment and disposal of waste can be affected by a multitude of external factors, such as, geographical location of the country, income levels, the distance between municipalities, environmental repercussions, the current legal framework in the form of the directives, waste management plans or future environmental objectives. Thus, it is crucial to evaluate all these aspects before entering the waste management market or specializing in the treatment of certain waste classes. The developed countries, such as Iceland, are characterized by much more complex waste management streams compared
to developing countries (Beede & Bloom, 1995). Waste management is often thoughtfully monitored by the government and environmental agencies at national, regional, and municipal levels. Additionally, its impact on environmental, social, political, cultural, economic factors is constantly assessed in order to maximize the profits gained by the local communities. It is especially important in the case of Icelandic waste management, as Iceland does not share borders with other countries. Any attempt to dump the waste in non-designated locations can impose severe fines on the firm and harm the reputation of the company in the eyes of potential buyers of their services. Icelandic statistics regarding waste generation and disposal are quite precise and it is extremely hard to produce false data.

8.1.1. Collection

Curbside waste collection is considered as the most prevalent method of collecting household and commercial waste (Ekvall et al., 2007). It is still argued if the firm can fully utilize the economies of scale for curbside waste collection, especially if the company operates in a region with a limited population. It is incredibly hard to determine the perfect number of residents, but numerous studies suggest that in densely populated regions, the economies of scale are small for a relatively little number of inhabitants. Furthermore, investigations propose that much bigger municipalities should examine the possibility of splitting the waste collection areas into much smaller regions, as profits gained by the municipalities would be much bigger (Biggar, 2002). The collection services for each area would be tendered out separately. This action would encourage a larger number of waste collection firms to participate in the tendering process and simultaneously the municipalities would stimulate competition in the markets, where many firms do not have enough resources to provide collection services to bigger areas. Also, smaller municipalities would benefit from the decision to combine their waste collection areas and conduct a tendering process in order to find the most suitable service provider. It is important to consider these actions as Iceland has a large number of sparsely populated municipalities. The smallest municipalities are often considered as agricultural communities with a population of approximately of 50 residents. On the other hand, Reykjavik, the capital and largest city in Iceland, has roughly 123,000 inhabitants. The mean number of inhabitants in a typical Icelandic municipality is approximately 4,500, but the median number of residents is only 900. Throughout last 20 years the Icelandic government has tried to reduce the number of municipalities, as in 2006 almost 70 percent of all municipalities were populated by less
than 1000 inhabitants, and in 2013 the percentage had decreased to 57 percent (Eythórsson, 2017). Icelandic municipalities prefer the inter-municipal cooperation method rather than the practice of amalgamating municipalities, due to scale economy and cost-efficiency achieved through inter-municipal cooperation arrangements. This requires much effort in order to organize the waste collection tendering process as all municipalities need to cooperate with each other to determine the size the of waste collecting area which will be the most efficient for the provider and municipalities.

8.1.2. Sorting

Initially the sorting process is performed by firms and households as the waste is sorted into various categories, such as paper, plastic, or residual mixed waste. Icelandic firms operating in the waste collection market provide the households with different bins for various categories of waste. The bins are easily distinguished by their color, for instance grey bins for residual mixed waste, green bins for all types of plastic, blue bins for all kinds of paper and cartons. By sorting the waste in more efficient manner, the residents can ensure that the waste collection fees will decrease. Additionally, the efficiency of the sorting process performed by the households and commercial firms has a direct impact on the effectiveness of the sorting conducted by the waste collection firm in the waste transfer station, and the time necessary to transport the waste to the treatment facility, thus making the company more profitable. The location of the waste transfer station is extremely crucial, as by reducing the distance between the waste collection area and treatment facilities will allow the firm to increase their economic efficiency. Nevertheless, in a few instances, the firm might be forced to relocate due to changing environmental regulations, which will have a huge impact on the profitability of the firm. In this case the firm should carefully choose the location of the transfer station. By deciding to build a waste transfer station, the firm must keep in mind that the waste transfer station is considered as a long-term investment and that without securing a constant flow of waste the firm will lose substantial financial resources by trying to keep the waste transfer station operational. The waste transfer station is directly related to large sunk costs, lengthy entry, and expansion process due to the time necessary to fulfill all environmental requirements to obtain the permit for the Environmental Agency. Furthermore, the exit costs are also extremely high as the location is required to be sanitized after the firm decides to the exit the market or relocate.
8.1.3. Treatment facilities and landfills

Landfills and treatment facilities specializing in incineration, composting, anaerobic digestion, hazardous waste recycling, and traditional material recycling are also linked to large sunk costs and prolongs the amount of time necessary to enter the market and expand. This is due to the fact that the firm is obliged to fulfill all environmental conditions stated in the legal framework of the country they wish to operate the facility in, in order to secure a permit analogously, as in case of a waste transfer station. The investment in these facilities are for a relatively long period of time - 20 or 30 years - as due to lack of additional investment, the facility will be able to solely treat a particular class of waste, thus limiting its capacity (OECD, 2014). The ideal number of inhabitants in order to justify treatment facilities is much larger than compared to the process of waste collection. Some studies have estimated that the ideal number of inhabitants for the treatment facility to be economic is roughly 300,000, which is almost 90 percent of the entire Icelandic population (Abrate et al., 2012). According to these studies it seems that any attempt to establish a brand-new treatment facility in Iceland will automatically result in failure, as the firm will not be able to use economies of scale to maximize the productivity of the treatment facility. Furthermore, in order to increase the productivity of already existing treatment facilities, smaller municipalities are compelled to cooperate with each other through inter-municipal cooperation and combine their tendering processes. The practice of minimizing the barriers necessary to the transport the waste can also have a positive effect on the performance of the treatment facilities. This is significant as in many instances the distance between smaller Icelandic municipalities is relatively large. In many cases the Icelandic Recycling Fund covers the costs of transportation or borrows their equipment in order to ensure that the waste will be transported according to the existing regulations and ultimately end up being recovered, reused or disposed of by an acknowledged waste treatment facility either within the country or abroad.

The biggest obstacle for the firm willing to invest in a treatment facility would be securing a constant flow of waste, which is necessary to achieve at least minimum profitability. In the case of the municipality possessing different types of treatment facilities, then the private entity needs to be prepared that the municipality might use its legal rights to divert the waste streams to their own treatment facilities. Thus, the private businesses might find it extremely hard to maintain the productivity of treatment facility at its highest levels. These actions might lead to distorted competition where the
private entity will be forced to exit the market and a fewer number of competitors will result in a smaller incentive to innovate. The Waste Framework Directive does not force the member states to establish every possible type of treatment facility, so municipalities have the right to focus on one variation of the treatment facility at the expense of another. In some instances, if the country does not produce enough waste to support a certain type of the treatment facility, the country is forced to seek alternative methods for the waste disposal. For instance, due to the abundance of renewable energy, Icelandic local authorities do not favor incineration as a primary method of waste disposal.

8.2. The responsibility of municipalities to enhance efficiency of the market
The various functions assigned to the municipalities indicate that the municipalities should be recognized as very central and powerful figures in the process of the formulation and expansion of waste management markets. National regulations authorize the municipalities to enjoy the exclusive rights in terms of access to the household waste. Additionally, the municipalities can be considered as the legal owners of the collected waste.

The constitutional autonomy of municipalities allows each municipality to introduce a diversified solution within a particular geographical area where the municipality provides waste management services, in order to utilize competitive advantage and achieve common goals. Therefore, in many cases, the municipalities are free to choose various factors concerning their own local waste management markets, which will allow them to govern it in much more efficient manner. The municipality is permitted to determine if they would rather manage the whole chain in-house, which is possible to accomplish either by a joint effort of municipally owned entities or by securing a partnership with other municipalities at the regional level without involving private entities. Therefore, it indicates that it is possible to establish infrastructure capable of managing the processes of collection, sorting, treatment and selling of the products of the waste treatment such as methane, secondary raw materials, heating or electricity. The municipalities might also decide to tender only part of the value chain, for instance the collection services, or to outsource all waste management services to the private entities. Thus, the municipalities might decide to withdraw from the waste management market, limiting their responsibilities merely to monitoring business activities conducted by the firms providing the service.
In order to maximize the efficiency concerning the allocation of available resources, the municipality is required to emphasize cost-efficient solutions and create a business environment which will support innovation, while at the same time attempting to achieve the environmental goals stated in the waste management plans and national legislation (Kemp et al., 2000). Additionally, the municipalities are forced to evaluate the whole waste management system in order to assess if compatibility and conformity between various stages of the value chain are at a satisfactory level. It should be noted that productivity is not only affected by short-term aspects, such as selection of service provider or duration of the contract, but also long-term factors, such as willingness to invest substantial amounts of monetary resources to improve the overall quality of the infrastructure. The issues causing distortions of competition in the waste management market can be usually traced back to the poorly formulated waste management system, which severely limits potential cost-efficient solutions, innovations and range of available business activities for both public and private sector.

8.3. Issues deriving from organizational problems
The manner in which waste management is arranged at the municipal level often produces various conditions in the market, but also produces a different assortment of incentives for various stakeholders, which have a direct impact on the productivity of the business. The municipalities are usually forced to choose between fully vertically integrated, partially integrated or decentralized waste management systems. It should be noted that regardless of the choice, each waste management system has a series of disadvantages and advantages which are inherently linked to them. Therefore, it is extremely important to make a choice based on the thorough investigation which will take into consideration all the pros and cons associated with the selection of a particular waste management system for both public and private entities operating in the waste management market.

8.3.1. Fully vertically integrated waste management system
The collection and treatment of household waste is considered as a legal responsibility of the municipalities. Thus, the municipality is obliged to guarantee that all inhabitants of a given area will be serviced. Furthermore, the municipality is compelled to adhere to the prime cost principle, where the public entity will take into consideration only the cost of direct materials and direct labor. Thus, the highest possible fee charged by the municipalities for the waste collection service will not exceed the cost of providing the service (Kemp et al., 200). This countermeasure forbids the municipal waste collector
from demanding a disproportionate price for a service. If the municipal firm does not need to compete with additional firms in the same market and compels the waste collection provider to service all inhabitants of the community. It might appear that by allowing the municipal entities to completely dominate the waste collection market, it will solve all arising problems regarding the price of the service and its obligation to conduct the service. Nevertheless, it cannot be determined that the municipally owned entity will perform the service in the most efficient manner. In some cases, full vertical integration can be recognized as a highly effective technique, especially if private entities do not have sufficient capacity to service the market or are not inclined to make the investments necessary to establish the required infrastructure (OECD, 2014).

A fully vertically integrated waste management structure will most likely create high entry barriers which will subsequently discourage all potential competitors from entering the market and distort competition. By deciding to create a fully vertically integrated waste management system, the municipality needs to keep in mind that the costs associated with switching the system are immensely high, thus the municipality will be extremely motivated to safeguard and preserve investments conducted in current waste management system. As a result, the municipality will be compelled to rely heavily on one particular waste management solution, without the possibility to choose between alternatives. Additionally, through a decision to establish a fully vertical integrated waste management system, the municipalities might unintentionally create spill-over effects, which will influence the shape of other adjacent markets, as the municipally-owned entities will need to secure a stable flow of certain waste classes to keep the treatment facility at the maximum capacity levels. Thus, the municipality might divert certain waste streams to their treatment facility by using the exclusive rights to treat the household waste. As a consequence, it will have a direct impact on the profitability of the private entities operating in directly connected markets. The profitability of the many Icelandic firms specializing in the waste management are dependent on the recycling levy received from the Icelandic Recycling Fund. If the private entity cannot export the waste or recycle it independently, then the Icelandic Recycling Fund will not be obliged to pay out the money.

The process of acquiring the permit along with the excessive conditions necessary in order to retain the permit are often considered as extremely effective entry barriers, which prevent the entry and expansion of private firms interested in the particular
market (OECD, 2014). It is possible to obtain a variety of permits and they can range from uncomplicated transportation permits, to much more complex environmental permits which authorize the owner to operate landfills, sorting stations or treatment facilities. The main objective of introducing the permits is to guarantee that the firm will be able to achieve the environmental goals stated in the legal framework and safeguard the entire population of the country from situations where unrestricted waste treatment and disposal will have negative implications on their lives. Nevertheless, the permits themselves are not considered as an issue, but the conditions required to acquire the permits are often too complex to be fulfilled. Private entities have often complained that irrelevant requirements necessary to obtain the permit might be directly related to the fact that the municipality is responsible for issuing the permits, and simultaneously acting as a monitoring body, even if the municipalities indirectly conduct numerous business activities in the waste management market. Therefore, the municipality can control the number of entrants or prevent any attempt of expansion.

8.3.2. Partially integrated vertical waste management system

Partial vertical integration takes place whenever the municipality decides to tender certain waste management services, therefore approving the presence of private entities in the market. Authorizing the entrance of private companies to the market can be hugely beneficial as it can increase the number of innovations and subsequently generate more cost-efficient techniques of delivering the service. Nevertheless, issues concerning distorted competition can still be present, depending on the structure of the public procurement process. For instance, if the requirements needed to take part in the tender process are too complex or not clearly defined, then it can develop entry barriers which do not encourage an innovative approach. A function-based contract can have a positive effect on their willingness to innovate, as well as eliminating unnecessary entry barriers. By designing a function-based contract, the contracting party will be able to clearly define their objectives, goals and expected outcomes, instead of describing the approach necessary to complete the contract (Eigen, 2012). The function-based contracts are widely acknowledged as the type of contracts which favor the innovative approach, as the firm is able to take advantage of their own unique competency to fulfill the needs of the contracting party. Furthermore, the unique approach developed might be adopted by other firms to deal with new issues arising in relation to the waste management market.
The innovative approach presented by the firm willing to win the bidding process is usually associated with huge opportunities, but simultaneously it carries a tremendous risk which needs to be evaluated by the municipality. For instance, innovation is supposed to produce a cost-efficient method of delivering the service, but sometimes the firm will not be able to fulfill the promise and eventually might declare bankruptcy. Therefore, the municipality would be more inclined to service the area as they cannot go bankrupt. Additionally, the contract with the municipal entity can signed for longer period of time, which will reduce the costs, as opposed to signing a shorter, more expensive contract with private companies (M. Kristjánsson, personal interview, 28th February 2018). Thus, the public procurement process needs to be cautiously balanced in order to promote an innovative approach and reduce the organizational, financial and technological risks.

8.3.3. Decentralized waste management system

A decentralized waste management system allows private entities to directly compete in the market. In a decentralized waste management system, the collection service provider becomes the lawful owner of the collected waste and might select the most profitable method of waste treatment. Therefore, the firms are more eager to participate in the tendering process for the collection of waste and develop more cost-efficient collection methods which will allow them to win the bidding process. In a decentralized waste management system, the municipality is still responsible for the performance of the municipal solid waste management, as well as ensuring that the service provider will collect the household waste, despite not conducting the service. Thus, the presence of monitoring bodies is essential to guarantee that the firms operating in the waste management will conduct the business operation in accordance with introduced waste management plans, environmental goals, and the legal framework (Nordic Competition Authorities, 2016).

A decentralized waste management system can provide the necessary incentive for the firms to be more innovative and at the same time increase their profitability. The waste management firms operating in the decentralized system are authorized to combine the collection of municipal and commercial waste, consequently increasing productivity of the process. The introduction of a decentralized system can be highly beneficial for the small and medium sized firms as they will be allowed to enter the tendering process for a particular collection area and select any given stage in the waste value chain according to their competencies.
Nevertheless, the decentralized waste management system is associated with certain risks. For instance, if the firms will be able to freely choose the area they wish to compete for, this can lead to a substantial rise in the prices of the service as the company winning the bidding process might intend to retrieve the financial resources spent to acquire the competitive advantage and secure the collection area. Subsequently, the firm might discourage potential competitors by increasing the entry barriers and gradually securing the position of the only active player in the market. Furthermore, the firm will not be obliged to follow the prime cost principle while determining price for the service.

It is extremely hard to determine which waste management system will guarantee low entry barriers for a potential investor, ensure constant competition between firms and provide the necessary incentives for innovation as every system has a variety of advantages and disadvantages. Nevertheless, it is safe to assume that each waste management system differently defines the role of private entities in the process of shaping the waste management market.

8.4. Privatization and the Re-municipalization Process

The management of the waste sector and the system of organization is directly affected by the number of public or private entities present in the market. Therefore, various governments attempt to increase the quantity of private firms by the process of reinforced privatization or enhance the importance of public entities by the re-municipalization technique.

Lately, the re-municipalization of waste management services has been mainly taking place in countries where the waste management services had been formerly privatized. It has been recognized that a variety of factors can influence the decision of the local authorities to provide public waste management services. Generally, by selecting a municipally-owned firm to deliver the waste management service allows the municipality to meticulously control the quality of service delivered, as the municipal entities need to fulfill a whole range of reporting requirements which are usually not applicable to the private firm. Additionally, the municipality can react more efficiently in case of potential issues directly related to the market or changing customer needs. Therefore, the public management models ensure that the price and quality of the service provided are satisfactory. The re-municipalization process provides various cost-benefit advantages such as the reduced cost of the tendering process. Therefore, the expiry of the private contract is considered as one of the main incentives leading to a
sudden shift towards public waste management services. The private entities mostly prioritize profit-oriented management, while business activities conducted by the public firms are often oriented towards the common good and focus also on the non-monetary aspects. The public companies also need to consider how their actions will affect the well-being of the inhabitants of country, even if they would miss an opportunity to increase their revenue. The financial crisis has substantially damaged the reputation of private entities, as previously the widely utilized privatization process did not guarantee that the performance of firms in the market will be not be significantly affected. Therefore, it led to a belief that the economic activities conducted by the public entities does not need to be inferior, compared to business operations performed by the private organizations. The trend of re-municipalization has been noticed in Germany, where the market share of municipally-owned organizations operating as the waste collection providers of municipal waste increased from 37.4 percent in 2005, to 45 percent in 2013 (Adamsen & Blagoeva, 2016).

The privatization process is characterized by access to specialized knowledge, efficiency gains deriving from the economies of scale, the introduction of new waste treatment technology, along with additional market solutions in form of innovation. Extensive purchasing power allows much bigger waste management firms to reduce the capital investment necessary to enter the market, thus lowering the price of the contract. Improved quality of service, cost-efficiency concerns, and the transfer of risks to private entities are identified as the main reasons positively influencing the decision to outsource waste management services. In some instances, the municipality might have failed to provide a satisfactory service. Instead of attempting to improve the quality of the service, the municipality would rather outsource the service and believe that the private entity will offer much better service. The private sector is often considered as more efficient, as private entities can offer at least an equivalent service at much lower costs. Competition between private firms operating in the same market motivates them reduce the costs necessary to provide the service. Additionally, the private entities are not limited by extensive administration procedures and are relatively free from political interference, thus shortening the decision-making process. Privatization processes are particularly popular in the treatment stage of the waste value chain, as the creation of the treatment facility is directly connected to high start-up costs and long-term investments. Additionally, the municipality would be obliged to ensure a constant flow of the certain classes of waste to keep the facility fully operational. The privatization
process continues to heavily influence Polish and Spanish waste management markets, where private entities steadily increase their market share (Adamsen & Blagoeva, 2016).

8.5. International trade and trade barriers

The Waste Framework Directive implies that each member state is not obliged to establish a full range of waste treatment facilities due to the proximity and self-sufficiency principle. However, at the same time, it advocates to formulate cross-border waste management networks among member states to facilitate the cross-border trade of waste and through cooperation to produce the most efficient market solutions. The effectiveness of the directive is considered a highly arguable matter, as in some instances those regulations are being used to rationalize the decision of closing the borders between members states, thus creating more issues.

The rationale for importing and exporting waste can vary significantly, depending on the country. In some instances, the country does not possess the required treatment facility or the other country has sufficient capabilities to treat the waste in much efficient manner. Iceland is forced to export waste, as the low quantities of waste generated by its inhabitants prevent the firms establishing a treatment facility, as it would be almost impossible to keep the facility fully operational throughout the whole year (G. Sverrissson, personal interview, 22nd February 2018). Therefore, it is extremely important for the entrant to acquire knowledge regarding the currently existing regulations, which have a direct impact on the international waste trade, as it is highly likely that the entrant will be required to export the waste in order to survive in the Icelandic waste management market.

The definition of waste is crucial in the context of cross-border trade, as it can vary significantly depending on the country and thus being controlled by a different set of regulations. Furthermore, different administrative procedures are followed if the waste is destined for recovery or disposal. Both the export and the import of particular classes of waste require written consent from initial dispatch, transit and destination authorities, along with written notification. The process of acquiring the notification is often extremely time-consuming and formulates a trade barrier (Nordic Competition Authorities, 2016). For instance, the notification requires all relevant information concerning the facility to which the waste is about to be imported or exported, elaborate information regarding the planned shipping route, and detailed information regarding the carriers and their representatives directly involved in the transportation process. In the case of changes to the already
delivered notification, the relevant authorities must be immediately alerted in order to obtain new notification. The process of delivering each notification is considered as relatively expensive due to the immensely long time required to formulate it. Therefore, in some instances, the quantity of administrative regulation can discourage the waste treatment in a given country, thus the firm would seek better, cost-efficient, solutions. As a result, the firm will attempt to export waste to locations with more flexible waste regulations and where costs associated with the waste treatment are much lower. These actions can lead to the formation of a so-called, “waste haven” effect, where waste is mainly exported from nations with strict waste regulations, to countries with lax waste regulations (Kellenberg, 2012). The international trade of waste can influence the infrastructure, treatment capacity and the content of the national waste management plans. In certain situations, the member states are authorized to limit the quantity of outgoing and incoming shipments of waste. The quantity of outgoing shipments of waste can be reduced if, as a result, it would violate the environmental regulations stated in the Regulation (EC) No 1013/2006 on Shipments of Waste. Alternatively, the country is permitted to limit the amount of the incoming shipments of waste categorized as recovery materials and destined for incineration treatment. Nevertheless, in order to utilize such practices, the local government must prove that due to the high amount of incoming shipments of waste, the local authorities will not be able to dispose of their national waste through the treatment methods stated in the waste management plans.

8.6. Public Procurements

Competition has been widely acknowledged as a stimulant necessary to increase innovation in the marketplace, as it obliges private firms to reduce costs in order to gain a competitive advantage. An investigation conducted by Aghion et al., (2005) has thoughtfully described an existing relationship between innovation and competition in terms of delivering the product and concluded that competition motivates companies in direct competition to innovate but, at the same time, less progressive firms are not sufficiently encouraged to be more innovative. An additional study performed by Cubbin et al., (1987) has determined that roughly three quarters of a 22 percent cost reduction from a bidding process can be traced back to the technical efficiency improvements. Therefore, it is important to keep in mind that innovation can also originate from the ability of the firm to perform identical actions as their competitors, but in a different and more efficient manner, instead of developing a brand-new product. As a result, an effective and efficient tendering process can reduce the contracting costs
incurred by public entities and promote the presence and expansion of small and medium-sized firms.

The practice of setting up a public procurement process should start with a meticulous analysis of how to fulfill the need. Subsequently, public procurement should enter the planning stage, where local authorities will determine the evaluation criteria. After the completion of the planning phase, it needs to be properly publicized and advertised in order to attract a large number of competitors. The advertisement and publication processes should be conducted accordingly to the procurement regulations. Throughout the procurement process the local authority will assess the submitted proposals. Finally, the contract period will start, where the local authority will be required to monitor all operations conducted by the firm which won the bidding process.

Figure 3. The public tendering processes (Nordic Competition Authorities, 2016)

In Iceland, the regulatory framework for the public procurement process attempts to secure an unbiased competitive environment where all firms interested in participating in the bidding process will have an opportunity to compete on equal terms. Current public procurement rules have been formulated based on European Directive 2004/18/EC on the coordination of procedures for the award of public works contracts, public supply contracts and public service contracts.

Competition policy should generally provide a competitive environment which will automatically promote competition in the market. Therefore, it is extremely important to ensure that procurement will be tendered in a manner which will encourage competition. Nevertheless, this statement needs to be balanced against the objective of achieving efficient results. In many cases the public procurement tenders tends to favor much bigger firms which can benefit from the economies of scale, simultaneously discouraging the smaller and medium sized firms from entering the bidding process and
also the contract length being for longer periods of time, reducing the competition in the market. Therefore, it is crucial to consider all possible short and long-term effects which will have a direct impact on the competitive market structure.

In some instances, municipal decisions might be heavily influenced by the belief that the environmental objectives stated in the waste management plans and national legislation require direct political governance, and that some environmental objectives are incompatible with the requirements necessary to provide a competitive business environment. As a result, the local government might assume that continuous public control is essential in order to monitor the performance of the waste management market and reevaluate if the firm complies with the environmental goals. Obviously, this reasoning fails to take into consideration market forces and subsequently do not provide sufficient incentives for the firm’s operating in the waste management market to achieve the environmental goals by reorganizing their business activities.

The process of outsourcing services by public tender will generally limit direct control over the service. Therefore, the municipality will be able to control the quality of service solely through an agreement signed with the provider of the service. Lack of direct control is often perceived as a risk by the municipalities and generally discourages them from outsourcing the service to the private entity. Additionally, it is widely believed that public procurement processes tend to rarely produce satisfactory outcomes and merely award cost-efficient solutions. Thus, the municipality might promote in-house solutions over the public tendering process. Nevertheless, it is important to acknowledge that market solutions provided by the private entities can ultimately lead to more cost-efficient alternatives and introduce more innovative techniques of delivering the service, which will positively influence the environment.

While formulating an agreement, the contracting authority must accurately evaluate the length of the contract in relation to the size of the investment and the time necessary to fulfill the service and fully utilize the economies of scale, so the firm will maximize the profits and focus entirely on the quality of service. If the length of the contract is too short, compared to the necessary investment costs, then the municipality will automatically reduce the number of firms entering the bidding process. On the other hand, if the duration of the contract is too long, it might lead to a situation where planned improvements of waste management system needs to be delayed, since the tendered agreement cannot be adjusted until the current agreement is no longer valid. Therefore, it is immensely challenging to formulate a contract. The process is often
extremely time-consuming and might be delayed due to continuous appeals coming directly from firms which failed to win the bidding process. Additionally, the municipality must bear in mind the costs associated with the contract management and the possibility of being involved in a legal dispute with the private entity. Therefore, the tender procedure might further complicate and prolong the process of procuring services, which can generate sufficient incentives to stop using the tendering process. In order to encourage the municipalities to use the public procurement procedures, it is important to reduce the transaction costs through offering assistance in form of knowledge and guidance, which will ultimately allow them to overcome the barriers associated with the complexity of the tender process.

In Iceland, almost all municipalities chose to outsource their waste collection services. Individually, the capital city of Reykjavik is not willing to contract their waste collection services, as they have established a municipally owned entity, which is exclusively responsible for these tasks. Nevertheless, municipalities often attempt to formulate the contract in such way that the private entities will not be able to gain full control of the waste treatment process and utilize the most convenient treatment method or simply export the waste abroad. It should be noted that almost all Icelandic treatment facilities are owned and operated by the municipalities or municipally-owned entities and by disposing of the waste, the municipality can claim back the recycling levy from the Icelandic Recycling Fund, which can substantially increase their overall revenue.

In the case of Iceland, it is extremely important to take into consideration the large distances between individual municipalities, thus determining the appropriate geographical area for tendering waste collection services will increase the efficiency of the public procurement procedures. Additionally, it will allow a larger number of smaller companies to participate in the bidding process, as the investment costs will be significantly lower and the firms will receive an incentive to be more innovative and develop more cost-efficient market solutions. Often relatively small quantities of individual classes of waste generated in the Icelandic waste management market compel the bigger firms to establish a subsidiary solely responsible for collection of that particular type of waste, closely cooperating with the parent company. Therefore, the contracting party will be able to simplify the public procurement procedures as the service will be provided by the parent company, along with their subsidiary, rather than two independent waste collection firms. Local firms such as Gámaþjónustan and Hringrás chose to establish a separate business entity which will operate as a subsidiary.
and specialize in the collection of hazardous waste. It can be directly associated with the desire to simultaneously offer the service for the collection of several waste fractions to the potential clients. For instance, out of the all waste generated within the premises of National University Hospital of Iceland hazardous waste constitutes only 10 percent (H. Steingrimsdóttir, personal interview, 25\textsuperscript{th} October 2017). Therefore, collection of such small class of waste is often unprofitable solely for the firm specializing in the hazardous waste collection.

While formulating a tendering process it is immensely important that the municipality meticulously evaluates its needs and the current condition of the market. In order to increase the efficiency of the public procurement procedure the municipality is obliged to gain access to a detailed statistics and data related to the waste management market. Therefore, the municipality will be able to accurately assess the quantity of waste generated and the requirements necessary to participate in the bidding process and avoid the situation where the waste collection provider will not be able to fulfill the contract. Additionally, the municipality should gather data and statistics throughout the duration of the contract period. Following this procedure will significantly help to assess the efficiency of the contract by gaining access to a detailed list of costs incurred by the municipality while formulating the procurement process and allow it to produce more efficient tenders in the future.

8.7. Conclusions

The municipalities are placed in a very central and influential position with regard to establishing and governing waste management markets. The municipality is often free to decide the level of its own participation in the waste management markets. As a result of these choices, municipalities are able to prevent private entities from entering the market or increase the competition and facilitate the introduction of new innovative solutions. It is extremely important for the municipalities to conduct thorough analysis before selecting the most suitable waste management system and deciding on how the waste management services will be performed. Therefore, the municipality is forced to regularly assess the impact of their decision in a short-term and long-term context. Furthermore, the municipality needs to take into the consideration additional markets which might be affected by their decisions and not only the market within the geographical area of their authority. The municipality should choose the variant which will increase the competition and which will negatively affect the competition the least. Nevertheless, it should be noted that the municipalities do not possess unlimited
resources and the process of evaluating a new waste management system might require knowledge and substantial resources, which often act as a barrier, effectively preventing the municipality from taking into consideration certain waste management systems. Therefore, private entities should attempt to help municipalities by giving them access to the result of investigations concerning their evaluation of the management systems.
9. Competitive Neutrality in the waste management market

This chapter presents an overview of the concept of competitive neutrality and evaluate how its introduction can create a competitive business environment, which will encourage more innovative market solutions. Additionally, it will analyze any potential issues which will hinder the introduction of a competitive neutrality policy and might decrease its effectiveness. Finally, the author will present real-life cases which have occurred in the Icelandic waste management sector and advocate for implementation of the competitive neutrality policy.

9.1. Definition of the Competitive Neutrality

Competitive neutrality has been defined as state within the host market where the position of the business entity is not heavily affected by any form of unjust competitive advantages or disadvantages (OECD, 2012). Competitive neutrality should be applied to increase the competition levels by providing the same operating conditions for any business activities, regardless of the public or private nature of the firm. Both public and private sector suppliers should be able to experience identical administrative, legal, regulatory and financial arrangements. Competitive neutrality eliminates all disadvantages and advantages resulting from the public or private nature of the firm and focuses entirely on the quality of the products and services delivered to the customer. Thus, the organization has an opportunity to select the firm based on their preferences and not external factors which will severely limit possible options. Additionally, the firm operating can divert more resources into research and development, in order to achieve a competitive advantage through the use of more innovative methods. If the public entity lacks competitive neutrality, it can lead to abuse of the net competitive advantage, because as a government business it is free to set prices which do not reflect their entire resource costs. As a result, this can have economic ramifications in respect to resource allocations. If the prices of products or services are much lower, compared to their full cost, then the demand will be exaggerated, and more resources will be transferred to the public entity than can be authorized. Subsequently, resources will be taken from other sectors of the economy, which could be used in more productive manner. Alternatively, if the prices set by the public entity surpass their full resource costs, then the user of the products or services will have fewer resources to be devoted to more productive practices. In both cases, the economy cannot properly function or grow to its fullest potential.
9.2. Various types of competitive neutrality problems

The most challenging factor for competitive neutrality is to evaluate the extent to which the private and public entities’ advantages distort the competition level. Many advantages and disadvantages might be extremely hard to quantify, so an accurate evaluation of net competitive advantage cannot be considered as the most efficient method. Nevertheless, the recognition and elimination of the main competitive advantages and disadvantages (for example, different tax treatments, guarantees on debts, reporting and regulatory requirements) that are responsible for distorted competition levels is still necessary.

The source of competitive neutrality needs to be addressed. If the distortion is arising in the competition level between both parties and are a result of a deliberate decision by local authorities to support public entities, then advocacy would be perceived as the most efficient method. The competition agency should be entitled to warn the policy maker about the consequences of these actions and how they will affect the competitive landscape. This approach can be utilized to raise a public awareness regarding the issue. As an alternative, if the distortions in the competitive landscape derive from the unintended repercussions of other government regulations, then transparency policies and particular competitive neutrality policies could be more productive. The competition law can assist in the process of addressing competitive neutrality issues.

Any public entities which have sufficient size to shape the market should fall within the scope of competition policies and should not be protected by any special laws. These competition policies can promote a competitively neutral environment; however they can only address specific issues only after they have occurred, not prevent the issues from happening.

Competitive neutrality often addresses the problem of utilizing artificial competitive advantages by public businesses when competing with private entities. However it is extremely hard to find a universal definition of a public business activity. Thus, the identification of various types of public business activities included in competitive neutrality policies can be challenging. Competitive neutrality should take into account, if all levels government, (for instance, local, regional and national) should covered by a competitive neutrality policy. It is safe to assume, that large national and regional public entities can cause larger distortions in the competitive landscape and therefore appear as threat to private businesses. In the case of the local public business it is much more
challenging to evaluate the impact of their presence on the competition levels. Furthermore, some local businesses operate in a business environment avoided by other private firms, due to relatively low profits or the small size of the market. Small municipalities are sometimes obliged to set up a public business entity in order to operate in key industries due to lack of potential investors. Competitive neutrality policy should evaluate if, in such scenarios, the firm would fall within the scope of the policy or not. Initially, the local authorities should evaluate the commercial nature of activity. In order to be included in the competitive neutrality policy, the firm must be formed in accordance with basic commercial standards and display characteristics typical for a commercial entity. The policy should be able to distinguish between profit and non-profit businesses. In the case of the latter, the competitive neutrality policy should not include it (OECD, 2012).

To maximize profits coming directly from the usage of competitive neutrality policy, there must be competitors in the market. Local authorities should not adopt any legislation prohibiting competition, as then adopting a competitive neutrality policy will not bring any benefits. Finally, the government should conduct a cost/benefit analysis in order to evaluate if, after the implementation of the competitive neutrality policy, the policy benefits are greater than costs. After completing the analysis, the government should focus on the removal of any competitive advantages. It is important to take into consideration that the advantage of the firm can derive from various factors, such as management, regulations, or the process of pricing their services or products. All of these advantages need to be addressed by the government if it is willing to implement a competitive neutrality policy.

Lack of competitive neutrality can severely limit the efficiency of competitive tendering. In a bidding process, a publicly owned company is often in a much better position compared to the private entity, as it is capable of providing its services below the prices of their competitors, due to a lower cost of capital. This is because a public entity cannot face the threat of insolvency and the ability to transfer general tax funds to cover any revenue shortfall (OECD, 2012). These practices can effectively prevent any private firms with much greater expertise from entering the bidding process.

Design of the tenders often allows the firm to evaluate if entering the bidding process will be profitable for the company. For instance, the length of contract should revolve around the concept of recovery of sunk costs. If length is too short then the sunk costs
need to be recovered much quicker, thus increasing prices. In case if the contract is too long, then some profits coming directly from the competition are absent, thus it will take much more time for the entrant to achieve minimum efficient scale as less contracts will be tendered through given period of time (OECD, 2012).

It has been noted that public entities are often the main beneficiary of various important regulatory advantages, such as, facilitated access to land use, and lacking or having a shortened registration process, along with other excessive protection measures from newcomers.

For instance, in order to be able to conduct business activities in the Icelandic waste management market, both public and private businesses are required to obtain particular permits. The Environment Agency of Iceland is responsible for monitoring the waste management market at the national level. Supervision of the market at the municipal or regional level is performed by ten local health boards, which need to report directly to the Environment Agency of Iceland. Members of the local health boards are generally selected by the municipalities, which are also directly involved in a number of business operations involved in the waste management market (G. Ingvarsson, personal interview, 27th October 2017). Thus, it can cause issues concerning the supervision of business activities performed by the municipally-owned entities, even if the Environment Agency is still monitoring the market. The Icelandic Competition Authority has obtained informal complaints that the conditions necessary for public entities to obtain the permits are not as severe as those experienced by private firms. Nevertheless, the local authorities can often face the danger of putting unnecessary restrictions on public entities to compensate for the lack of a competitive neutrality policy. As a result, distorted competition levels are still present, as other parties are put in a more favorable position.

9.3. Origin of competitive neutrality issues in the waste management market

Issues that are related to competitive neutrality in waste management appear to derive from three different sources.

Firstly, the local authorities have several duties in waste management. For instance, municipalities are in charge of developing regional or local waste management plans, along with authorizing important certificates and licenses. Simultaneously, publicly owned firms are free to compete with private entities in the waste collection market. Furthermore, local authorities hold the rights to incinerators and additional waste treatment plants.
Secondly, local authorities have the benefit of exclusive property rights to particular waste classes, provided by the legal framework of a given country. In some instances, municipalities can categorize the waste in accordance with their own favorable treatment. Privileged access to waste streams allows publicly owned entities to influence the market prices and the profit margin of different segments of the market where they do not operate by controlling supply and demand, as well as increasing entry barriers for the possible entrants.

Thirdly, publicly owned undertakings may enjoy additional excessive advantages or disadvantages which often cannot be experienced by the private entities (OECD, 2012). Subsequent advantages can be associated, for instance, with exemption from taxes or different tax treatments and immunity from certain regulatory requirements. The disadvantages might be related to less flexible employment conditions compared to the private sector, restrictions to access to certain classes of customers, centralized superannuation, industrial relations policies or delays in the decision-making process due to a high number of ministerial interventions.

9.3.1. Various roles of municipalities

The level of involvement by municipalities in the various functions of the market is much higher compared to private entities, as publicly owned firms often act as organizers, regulators or providers of certain services. Often competitors cannot develop an effective strategy against action taken by the public entities as the practices allowed by municipalities are not clearly defined. Additionally, in some instances, it is almost impossible to determine which classes of waste can be exclusively treated by the municipalities and how the process of treatment should be conducted. Public entities are in a privileged position as they are allowed to benefit from the use of waste tariffs and local regulations in order to increase the quantity of waste being recycled or incinerated (OECD, 2014).

Public entities are entitled to determine the class of the waste and decide if the waste will be categorized as recyclable. Subsequently, the waste cannot be treated by other firms operating in the market as they do not have exclusive rights for the treatment of given classes of waste, which are in the possession of the municipalities. Such issues derive from a poorly structured legal framework as it fails to limit the extent of exclusive rights provided to the public sector. Additionally, due to vaguely written laws, firms cannot truly determine the situations where the law should work in their favor. In many instances, the publicly owned enterprises wrongfully believe that they enjoy
exclusive rights to certain waste classes, however private firms fail to assess if such statements are correct or not.

Different interpretations of the law can have a devastating effect on the companies operating in two or more municipalities as they will be compelled to operate in a completely different business environment. As a result, the risks associated with the treatment of the waste will be much higher as the company will not be able to handle a particular category of waste, which is reserved for the municipalities, even if they are allowed to treat it in another territory within the same country.

It might appear as a really challenging task to keep the competition undistorted if large numbers of the regulations constructed by government favor the public sector. Additionally, the government often expects to receive feedback from the municipalities regarding potential changes, which can be made to improve the regulations and will not negatively affect the business performance of the public entities. For instance, municipalities are responsible for the development of the waste management plans and rarely allow private entities to influence the final shape of those plans.

Any large-scale investment made by the municipalities can influence the current shape of the market and determine the future trends which privately owned organizations will need to follow in order to keep their current market position. By deciding to transfer substantial financial resources to build an incinerator, the municipalities send a clear message to other competitors that upcoming practices will revolve around of the concept of keeping the incinerator fully operational. In order to achieve this objective, the incinerator will require a huge and stable quantity of combustible waste to decrease the high operating costs. If the quantity of waste delivered to the incinerator will not keep the incinerator at full capacity, then the operating costs will further increase.

Additionally, certain types of waste have a higher caloric value which will allow them to produce more heat or electricity along with higher revenue, which will lead to securing a return on investment much faster. Thus, municipalities will be more inclined to secure exclusive rights to waste with higher caloric value or put pressure on the waste collection firms to deliver a specific type of waste to the incinerator. It can be achieved either by the introduction of certain incentives for the waste collection companies or increasing the barriers necessary to dispose of the waste by different techniques than incineration. Alternatively, the process of waste collection can be carried out by the municipalities through introducing certain laws or regulations which will not allow the private entity to collect the waste for a particular area of the country. Nevertheless, it
will have a direct effect on the number of public procurements as well as competition levels (Nordic Competition Authorities, 2016).

Numerous business activities and strategies adopted by the municipalities often define the shape of the whole waste management market and determine if there are any distortions in the competition levels. Thus, it is extremely important that the local authorities will focus on providing market solutions which will help to develop and maintain a well-functioning market. Potential profits coming directly from the implemented polices should be evaluated from the perspective of well-being of the whole market as well as individual companies. In practice this might be extremely difficult to accomplish so the municipalities should help to define the boundaries between various roles assigned to them by the government and therefore keep separate costs and assets between accounts directly related to noncommercial and commercial operations (OECD, 2014).

9.3.2. Privileged access to waste streams

In terms of the collection of household waste, municipalities are responsible for providing the service, however the law also permits them to choose if the service will be carried out solely by themselves, in cooperation with another municipality, or contracted out to a private entity.

In some instance, firms owned by municipalities might offer their services to industrial and commercial organizations aside from already provided municipal waste services. Thus, the municipally owned businesses start to operate across a much broader continuum than initially assumed, as their operations might range from predominantly municipal to generally commercial. Boundaries between commercial and non-commercial activities start to vanish and the well-being of the organization begins to depend more on the revenue gained from commercial activities. Subsequently, through the desire to provide the whole assortment of waste management services, the municipal firms will need to increase their turnover in markets with much higher competition levels (OECD, 2014).

Municipal entities may attempt to take advantage of the exclusive rights and privileges enjoyed in the municipal waste management market and influence the business environment of other, more competitive, markets. Additionally, municipally owned firms will pursue a bigger market share in the commercial waste market in their local territory or pursue competition with private entities for public procurements for municipal waste in other regions of the country. The lack of high standards of
transparency concerning cost allocation between operations conducted in markets, characterized by the high number of private competitors and markets exclusively reserved solely for municipal entities can lead to cross-subsidization practices. In some instances, municipally owned organizations provide supplementary services besides regular waste management services. The municipal entities can price these additional services according to a system which does not necessarily reflect its full costs. In accordance with article 23 of the Waste Management Act, if either a private or a public entity has gained control over a landfill or incinerator, then they are required to cover incurred costs by introducing a service fees. At this point such facilities are operated mostly by public entities. The amount charged by the municipality should be established, based on the factors that directly affect the overall cost of the service. A municipality is authorized to charge a fixed amount of money to each household using the service provided by the municipal entity. Nevertheless, the fees charged by the municipalities in relation to waste management will not surpass the costs of providing the service, but they can be much lower. Municipal undertakings can often afford such practices due to their exclusive position in certain markets, as well as substantial compensation provided by the government for completing certain public services obligations. These services can be added to each other to form bundled offers which often cannot be matched by offers proposed by private companies. Thus, the cross-subsidization practice should be perceived as an unfair advantage which can lead to violation of competition law by prolific usage of predatory pricing. Even if all conditions necessary for accusing the firm of predatory pricing practices are not met, much lower pricing of the service originating from inappropriate advantages, such as cross-subsidization can negatively affect the competitive neutrality.

In order to avoid such a scenario, the costs and assets should be kept separate between commercial and non-commercial accounts for municipal entities. Adopting this policy will ensure a higher transparency level among municipally owned organizations. Public service providers often do not take into consideration numerous factors which allow them to gain competitive advantage or disadvantage compared to the private sector in terms of financial and non-financial costs. Monitoring bodies should ensure that all these costs will be taken into account when municipal entities price their services and remuneration for public service obligations will be estimated on the basis of clear objectives, targets or return rates.
The Icelandic Competition Act contains a rule which is to ensure that funds generated from business operations, conducted in a market where the firm enjoys exclusive rights, are not utilized to subsidize the business activities that are performed in competitive markets. In accordance to the following article from the Competition Act, the Icelandic Competition Authority requires the separation of accounts in the most possible transparent manner and according to all legal requirements directly associated with accounting. Nevertheless, these rules are not being applied in cases concerning waste management, due to the presence of special legislation regulating waste management activities.

9.3.3. Excessive advantages of publicly owned organizations
Public or private entities may experience different tax treatment due to diverse legal forms or ownership structures. This practice is applied to a diverse range of indirect and direct tax regimes, such as value added tax (VAT), income taxes, property taxes and registration taxes. It can be extremely difficult for competitive neutrality and policymakers to assess if tax exemptions experienced by the public entities influence the number and structure of commercial activities and investments conducted by municipally owned firms. To evaluate whether the firms are experiencing tax-based advantages or disadvantages is only possible if there is a clear reference group consisting of current or possible competitors.

For example, Icelandic municipalities and municipally owned entities are not under any obligation to pay income taxes from generated revenues. Additionally, municipalities and municipal entities do not collect value added tax (VAT) for services. As a result, such practices can endanger competitive neutrality, especially if municipal entities are in direct competition with privately owned firms (OECD, 2012).

Municipally owned companies can enjoy unique financial advantages in comparison to private entities. In order to fund their business operations, municipal entities can utilize municipal resources or pursue financial aid from financial markets. The origins of financial assistance can be traced back to capital markets, credit institutions owned by governments, commercial banks, or public funds. Due to the ownership structure, municipal entities can receive financing with much greater ease. This is because the financial risks associated with lending the financial resources are practically absent, as municipally owned firms, in many instances, cannot declare bankruptcy. As a result, due to undue advantage, municipal companies have access to a large and cheap source of financial aid which will allow them to gain a better market position in comparison to
private companies.

It is important to emphasize that municipal entities should strive to attain a commercial rate of return in competitive markets so as not to distort competition levels. A lack of required rate of return by municipally owned firms might lead to a situation where private companies will not be able to achieve cost advantages, generate enough profit and subsequently lose interest in operating in a certain market.

9.4. Real-Life Cases

9.4.1. Exploitation of dominant market position (SORPA case)

An Icelandic private entity operating in the waste management market has complained to the Icelandic Competitive Authority that the current discount structure provided by inter-municipal firm, SORPA, has infringed the competitive law as SORPA was clearly abusing their dominant position in the market as discounts were based on a non-objective scale. The case investigated the waste products that were used by sorting and waste transfer stations. The Icelandic Competitive Authority had meticulously evaluated the nature of the sorting stations. SORPA had enjoyed 65-75 percent market share in terms of waste sorting and processing. Furthermore, SORPA had a monopoly in the market for waste disposal. The area analyzed by this case was limited to the Greater Reykjavik Area in Iceland. SORPA had a transparent price list, which contained all possible discounts. The discounts were calculated based on the overall number of transactions conducted by the client with SORPA over a certain pre-established period of time.

Every person and firm performing a transaction with SORPA in relation to the waste transfer or sorting stations has received the same discount. However, the discount system did not apply to the municipalities present in the Greater Reykjavik Area. These municipalities would always enjoy much higher discounts compared to regular clients without the necessity of calculating the total number of transactions conducted with SORPA. Additionally, the private entity argued that such unjust treatment could result from the fact that municipalities were considered as lawful owners of SORPA (Icelandic Competitive Authority, 2012).

The Icelandic Competition Authority has evaluated if the number of business transactions conducted between municipalities and SORPA allows for such practices. The Icelandic Competition Authority has concluded that such actions violate the Icelandic Act on Competition and as a result SORPA will be forced to pay an administrative fine consisting of 45 million ISK. Additionally, the Icelandic
Competition Authority advised SORPA to reevaluate their current price list and create a brand-new price directory with much more transparency, a clear objective and applicable to all of SORPA’s clients. SORPA did not agree with the verdict and appealed to the competition appeals committee, and afterwards took the matter to court. The verdict was not changed and the decision regarding the fine was upheld by the District Court of Reykjavik and the competition appeals committee. The case recently went to the Icelandic Supreme Court and final verdict has not been reached yet.

9.4.2. Case concerning Icelandic blue bins

An Icelandic private entity operating in the waste collection market has issued an official complaint to the Icelandic Competition Authority concerning the City of Reykjavik’s practice of establishing a cardboard and paper waste collection and recycling service in a competitive market recognized as Blue Bins (Icelandic Competitive Authority, 2014).

The private entity stated that the strategy of entering the competitive market by the public entity can have devastating effects on the competition levels as the municipality enjoys undue advantages deriving from their size and large tax revenue in comparison with the private sector and thus it will violate the Icelandic Competition Act. Furthermore, the price of the blue bin service was perceived as too low, as the municipality did not include all costs directly associated with the service. As a result, it has been stated that the municipality is pursuing the practice of predatory pricing.

Nevertheless, in accordance with article 3 of the Waste Management Act, the waste was categorized by its origin instead of its form. Waste coming from the household, such as paper, plastics, glass, food scraps or cardboard is still classified as household waste. In accordance with the same article, commercial waste is determined as waste deriving from the production, service or commerce processes. Furthermore, municipal waste is defined as waste from households and comparable waste originating from other sources. The role of municipalities is regulated by article 8 of the Waste Management Act and it states that every single municipality is responsible for the process of collection and treatment of the household waste within their areas of jurisdiction. In other words, the collection of household waste is stipulated by law as an exclusive right reserved to the municipalities.

The Icelandic Competition Authority has decided that it did not have the right to intervene and force the municipality to stop offering the blue bin service as paper and cardboard are classified as the household waste, which should be exclusively collected
and treated by the municipalities. Nevertheless, the Icelandic Competition Authority has established that particular factors might suggest that over a longer period of time the blue bin service will have a harmful effect on the competition levels in the waste management market.

9.5. Conclusions

Due to numerous undue advantages, such as the exclusive access to certain types of waste, the municipalities have the power to alter the structure of waste management market, as well as choose possible treatment method used to dispose of the waste. The biggest challenge for the local authorities is to determine the most suitable method to manipulate competition levels in order to enhance the number of innovations in the market, prioritize the recovery of the materials and reduce the impact made on the surrounding environment. Problems directly related to competitive neutrality can subsequently have destructive effects on the competition and market mechanisms. Nevertheless, it should be emphasized that the presence of municipal entities in the waste management market itself does not create an issue. Furthermore, it should be noted that not all dissimilarities between public or private firms operating in the same markets should be perceived as issues of competitive neutrality. It is completely normal that various organizations have a range of strengths and weaknesses, mostly deriving from the adopted competitive strategies or internal structure of the company. Issues related to poorly-structured competitive neutrality in mixed markets cannot be solved so easily by limiting the access of the public firms to the market or privatizing them. Local authorities should avoid a scenario where no firm will be able to enjoy a competitive advantage, since a competitive advantage enhances the dynamic competitive process. A dynamic competitive process creates a business environment where the most productive firms are rewarded for their efficiency, as they subsequently increase market share and generate bigger profits in exchange for increasing the quality of delivered services or products. At the same time, ineffective companies are forced to re-evaluate their business strategy or the firm will gradually lose the market share and eventually will need to withdraw from the market. Nevertheless, the absence of competitive neutrality can also have negative effects on competitive dynamics and subsequently affect the whole market in terms of the quality of service or product, the number of introduced innovations or its impact on the environment. The waste management market has a lot of potential to grow bigger and become a constant source of innovation, however, issues directly associated with insufficient competitive neutrality can effectively slow down its
growth.
The municipalities often are responsible for multiple tasks throughout all stages of waste treatment, as they can act as service providers, organizers, regulators, or administrators. Through various roles, the municipality is able to shape the whole waste management market, so the position of municipally owned entities would be far superior compared to private firms. Even so, the municipal firms already have an undue advantage in the form of exclusive rights to collect, handle and treat household waste. This type of problem can influence the competition levels in the market and force private firms to exit the market. In order to avoid this scenario, the local authorities should use legislative tools to minimize the distortions in competition. Municipal entities should keep separate accounts directly related to financial resources from the business activities performed in the market where they enjoy exclusive rights, and business activities in mixed market. Not introducing such a policy can lead to more frequent use of cross-subsidization practices in violation of the Competition Act. Additionally, the local authorities might look at the different tax treatment or credit benefits enjoyed by each sector. It should be noted that by eliminating the sources of the distorted competition level does not ensure that the competitive environment will be identical for both parties, as some advantages or disadvantages are automatically assigned to the particular legal form or type of the ownership. The objective should be to minimize the negative effect of certain advantages or disadvantages related directly to the particular sector on the competitive neutrality but not eliminate all of them to provide identical competitive environment for private and public entities.
10. Discussion

This study has attempted to examine the characteristics of the Icelandic waste management industry and identify if current structure of the market promotes competition and innovation among local firms from both public and private sector and ultimately has the potential to attract foreign companies. Based on all interviews conducted with stakeholders directly affected by the performance of the waste management market and people employed by the waste management companies in both public and private sectors it is possible to conclude that absence of the large non-domestic has a direct impact on the current shape of the Icelandic waste management market. Due to lack of the pressure coming directly from competitors many domestic firms are not forced to produce more innovative market solutions as they are satisfied with their current market positions (M. Kristjánsson, personal interview, 28th February 2018). The main method of increasing the revenues appears to be the diversification of the portfolio as the local waste management firms chose to increase the number of business activities by delivering additional services, such as street cleaning or snow removal (Marketing Manager at Íslenska Gámafélagið, personal interview, 14th February 2018). Majority of the interviewees believed that entrance of a large non-domestic waste management provider can act as a sufficient incentive to encourage more cost-efficient market solutions among local companies and ultimately lead to development of the market.

After entering the Icelandic waste management market, the foreign company would be obliged to collaborate with local firm in order to make use of the preestablished infrastructure. In return the domestic companies will benefit from gaining access to the expertise of the entrant, which ultimately will allow to devise more efficient tools to tackle various waste management issues and produce better market solutions.

The extent of the involvement of public sector in the waste management market can differ significantly between nations. The local authorities often deliberately choose to neglect the competitive policies in order to achieve specific environmental objectives stipulated in the national environmental legislations (OECD, 2014). Thus, in many cases the presence of the private entities in the waste management market is severely limited due to the fact that it would be much harder for the municipalities to monitor and control their business operations compared to the municipal undertakings. As result, generally private sector businesses will be more interested in entering foreign markets where the public sector undertakings will not be able to enjoy artificial cost advantages.
and where the competition between the private and public sectors is mainly driven by the desire to increase quality of the service or ability to produce the most cost-efficient market solution. Therefore, it is highly unlikely for the foreign private entities to enter the market where the waste market value chain is mainly governed by the public sector, as the municipalities will be authorized to limit the number of business activities conducted by the private entity, control the waste streams delivered to the private organization by utilizing exclusive rights to certain waste fractions and ultimately prevent the entrant from increasing its market share. The waste management is characterized by relatively high entry barriers as the entrant must be prepared to invest substantial amount of the money in order to secure necessary equipment which will fulfill all applicable environmental regulations (OECD, 2014). While analyzing the potential entry markets the foreign firms would always deliberately examine the current waste management system and assess if the local government has provided a business environment which will allow the entrant to grow and gradually capture bigger market share. According to the Icelandic waste management system both private and public sectors are allowed to participate in the market and jointly create the whole waste market value chain (M. Kristjánsson, personal interview, 28th February 2018). Nevertheless, some actions of the private entities are still restricted by the legal framework. Public sector can enjoy the exclusive rights to the collection and treatment of particular waste fractions, such as household waste. Additionally, the municipality of Reykjavik chose to establish a separately municipal undertaking responsible for the collection of the waste generated within corresponding geographical area. Therefore, prior to the entering the Icelandic waste management market the foreign firm will be forced to accept the fact that large quantities of the waste produced in the largest municipality in Iceland would not be collected and treated by them due the current structure of legal framework. Despite the desire to look for the foreign markets where privatization is more common the entrant can’t avoid interaction with the public sector. In order to acquire the contract to service particular geographical area within the country firm must participate in the tendering process, which is mainly organized by the municipalities. Thus, even if the private businesses define the customers as the end-users but ultimately the municipality will be responsible for the review of quality of service delivered to their citizens. Subsequently the municipalities will decide if they wish to look for alternatives or continue the collaboration with the private entity.
After completing the process of analyzing the current political and economic situation in Iceland and the current situation in the waste management market, it is possible to conclude that the size of the market, lack of investment in heavy infrastructure and the strong market positions of the potential competitors can be considered as factors which prevent large non-domestic waste management providers from entering the market. Yet it is still possible that an entrant might be inclined to enter the Icelandic waste management market. Among previously investigated entry modes, it appears that acquisition would be considered as the most suitable tool which will allow the foreign firm to enter the market. This decision can be mainly motivated by the desire to acquire the business network of the domestic firm and its knowledge regarding the local waste management market, as well as factors which have a direct impact on its current position (Chang & Rosenzweig, 2001; Meyer & Estrin, 2001). Intermediary entry modes usually require the entrant to gradually increase its expenditures in order to slowly capture larger market share. Due to rapidly changing the business environment, the foreign firm might not be inclined to wait for a prolonged period of time, especially if the market is mainly controlled by two private entities and other much smaller firms do not have a chance to secure a contract with bigger municipalities. On the other hand, any attempt to establish a business from the ground up can be extremely expensive as the entrant will be compelled to make substantial investments into improving the overall infrastructure within the country and develop the market. Naturally it will be extremely beneficial for the local government but not necessarily for the entrant, as the low quantity of waste generated by the local citizens can force the foreign business entity to exit the market. The entrance of a foreign company does not need to be beneficial for the domestic firms as it will result in dividing of the market share and increasing the effort necessary to win a public procurement but in a longer term it can reinvigorate the market. It is impossible to fully determine if in the near future a large non-domestic provider will attempt to enter the market, but the local government should provide a business environment which will encourage innovation among currently existing local firms operating in the waste management market.
11. Recommendations

The main problems occurring in the Icelandic waste management mainly revolve around the regulatory and structural issues. Lack of adapting market solutions is often advocated by the desire to not violate the competitive regulations or for plain economic reasons. Therefore, the benefits coming directly from market solutions in terms of competition are often neglected. Furthermore, unclear roles of the public sector along with high involvement in the waste management industry contribute to the absence of competitive neutrality and low efficiency of market solutions. Lack of innovation and competition can ultimately lead to a situation where the local government will be forced to constantly invest substantial monetary resources in order to catch up with the neighboring countries, fulfill the EU requirements stated in the corresponding regulations and provide a satisfactory quality service for their local citizens. Therefore, it is in the best interest of the local government and the local society to establish a business environment which will support innovation and competition. Nevertheless, even without substantial changes made in the regulatory framework the local government still can increase the competition by emphasizing the importance of the prolific use of the public procurements, enhancing the value of each separate stage present in the value chain, and providing sufficient tools to increase the dialogue between the public and private sector.

Lack of the adequate resources along with unwillingness to adapt the innovative solutions can substantially decrease the efficiency of the procurement procedures. Therefore, procurement division must receive sufficient funding which will allow them to properly assess the consequences of utilizing various tender designs, in terms of the well-being of the market or willingness to attract bigger number of firms, and ultimately produce more efficient tenders. Every waste management procurement should be perceived as an outcome of exhaustive process which would take into the consideration such factors as market conditions, environmental goals or industrial scale and scope. Procurement divisions must to be properly encouraged to search for brand-new and innovative public procurement procedures which will mainly emphasize the importance of innovation and efficiency, while at the same time no violating any applicable legislations stipulated by the local government. Therefore, Icelandic local authorities should encourage networking between municipalities in order to share the expertise and experiences regarding the design of the public procurement. As a result, the municipalities would be more efficient in terms of the deciding the scope and size of
waste management contract according to the needs of a particular municipality. Moreover, the municipalities won’t be able to increase the efficiency of the tendering process without utilizing sufficient tools which will enable them to establish a continuous form of dialogue with the firms operating in markets directly affected by the design of the public procurement. Therefore, it will allow the municipalities to acquire the knowledge regarding various factors or incentives which determine the overall attractiveness of a particular procurement.

Furthermore, in order to identify the most efficient methods to accomplish the goals stated in the national regulations whilst developing or altering waste markets it would be highly beneficial for the municipalities to organize regular meetings with various stakeholders directly affected by the performance of following waste management markets. Stakeholders from both private and public sector should be allowed to participate at an early stage of the development of waste management plans which will have a direct impact on the shape of the waste management markets. Following strategy is efficiently utilized in the Icelandic Recycling Fund, where the board the consists of both private and public stakeholders. Nevertheless, it should be also adopted by other regional and local waste councils as it may be extremely profitable for the future development of waste markets. Throughout collaborative effort it would be possible to facilitate the process of the allocation of responsibilities between both private and public actors delivering the waste management services and make it more transparent. Additionally, all stakeholders will be able to assess the usefulness and practicality of the use of various tools during the process of dealing with newly emerging waste issues in more efficient manner as the problems will be analyzed from different perspectives. Ultimately it should be taken into consideration that in order to increase the overall dynamic efficiency of the market, the local government must recognize that this cannot be done without partially sacrificing currently existing static efficiencies. Therefore, this can result in increased costs of waste treatment in the short term, but in the long term will eventually improve the overall welfare of the country.
Appendix I

Interview Framework

1. How would you describe your company’s current market position?
2. How would you describe your company’s growth strategy?
3. What are the main strengths and weaknesses of your company?
4. How would you describe current company’s technology, equipment and machinery in use?
5. How has the Waste Management industry in Iceland changed in the recent years in regard to regulation, trends, and expectations?
6. How would you describe your employees’ skills and knowledge?
7. By your opinion what are the main problems of Icelandic waste management sector?
8. Do you think that your company can compete with companies from other EU countries?
9. By your opinion would adoption of the newest EU regulations have influence on Icelandic waste management industry and how?
10. How can Icelandic government increase competition?
11. How can technology be used as an entry strategy and influence overall strategy of the firm in the market?
12. Are the business models and offerings provided by current players strong, innovative and sustaining innovations?
13. Are the largest Icelandic Waste Management companies threatened by foreign / international changes?
14. Do you think that the current entry barriers are too high or too low?
15. How would you describe current the market segmentation?
16. Does the current market encourage competition or cooperation between firms?
17. Does the current form of public procurement promote competition?
18. What are the trends and opportunities in Icelandic waste management market?
Appendix II

List of participants

Anonymous Executive Director at the Efnamóttakan

Anonymous Marketing Manager at Ísłęnska Gámáfélagið

Daði Jóhannesson, Director at the Hringrás

Guðlaugur Sverrisson, Project Manager at the Icelandic Recycling Fund

Guðmundur B. Ingvarsson, Advisor in the Department for Sustainability at the Environment Agency of Iceland

Hulda Steingrímsdóttir, Environmental Manager at the National University Hospital of Iceland

Ingþór Karlsson, Plant Manager at the Suðurnes Incinerator Authority

Magnús Þór Kristjánsson, Lawyer at the Icelandic Competition Authority

Ragna Inga Halldórsdóttir, Head of the Department of Environment and Educational Affairs at SORPA
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