

# **PILOTING AS A TOOL TO START A NEW BUSINESS AND IMPROVE PROCESSES**

Case Finncont Ltd rental business pilot

## Abstract

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Title of publication Piloting as a tool to start a new business and improve processes Case Finncont Ltd. rental business pilot		
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<p>Abstract</p> <p>The need for owning everything is decreasing, and at the same time, more options for product sharing and rental is increasing. Simultaneously, the upcoming waste legislation, increased focus on construction waste management, and calculations of missed opportunities within the EU's circular economy create an interesting opportunity to pilot container rental business in the environmental sector on a small scale.</p> <p>This research aims to study a rental business with a business experiment and gain insight into what is involved and identify the challenges and risks. The secondary aim is to describe how a new idea should be implemented and tested before large investments, monetary or human resources.</p> <p>The research is done using the action research strategy and the data for the research was gathered by applying the triangular method; internal discussions, results from the pilot, and earlier literature added with the author's professional experience. The ideas from, such as Hamari, Sjöklind, and Ukkonen (2015), Andersen &amp; Simester (2011), Schrage (2014), Lessmann, Listiani et Voss (2010), and Arnheiter &amp; Maleyeff (2005) were utilized for this research.</p> <p>This research's findings were that despite good planning, there are unseen challenges and opportunities when creating new. The courage to move on with the idea without bouncing it around and to make changes to experiment when needed are the crucial public findings of this research. The pilot helped find new processes and improve the existing ones with the Lean and Six Sigma principles. The company is now more ready to evaluate its processes and performance generally. The culture of experimenting is a set target, and further experiments will be done. Some of the findings are classified as they are crucial for the company in the future.</p> <p>Creating a rental business, a core service of product sharing, for the environmental sector can create cooperation models aimed at the construction sector, producing the highest amount of waste in the EU, to help achieve a circular economy.</p>		
Keywords Rental, Piloting, Recycling, Process improvement, Environmental		

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## 1 INTRODUCTION

As the number of people worldwide and the consumption of raw materials increases, finding new ways to consume more sustainably and increase product effectiveness is crucial. Global material resource use is expected to be twice that of 2010, while the global population is forecasted to exceed 11 billion at the end of this century. Even with the current number of people, our planet struggles to meet our food and natural resources demands and absorb the waste we generate. (European Environment Agency 2016)

Not throwing used goods away as trash, but to recycle them and creating a circular economy, is a must that even the European Commission has been working on for multiple years (European Commission 2008). The Circular economy is formed of many essential aspects as eco-design, reuse or refurbishment of old products, product sharing, waste preventing, and recycling (European Environment Agency 2016). The European union's economy loses significant potentials in raw materials currently in waste streams (European Commission 2015). In a study from Hamari, Sjöklind and Ukkonen (2015), authors note based on the studies from Albinsson & Perera (2012), Belk (2010) and Botsman & Rogers (2010) that during recent years attitudes towards consumption have shifted. As concern about climate change increases and makes the sharing economy an appealing alternative for consumers, consumers are replacing full and exclusive ownership of goods with product sharing (Hamari et al. 2015).

In their study, Hamari et al. (2015) also reviewed a study from Alsever (2013) and concluded that product sharing is an emerging phenomenon that the investors see as a new mega-trend resulting in hundreds of millions invested into related start-ups. Decreasing interest in owning everything and the idea of product sharing and rental is gaining more popularity also in the professional field as many services and tools are outsourced or rented. The changing legislation, environmental targets, and trends give an exciting opportunity and time to study new business ventures for relatively old-fashioned business, waste management and recycling. Usually, in the waste management sector, the logistics companies have owned the majority of equipment from trucks to waste bins and containers by themselves and rented them forward to their end customers. Besides heavy investments, the foresaid has caused some problems with storage capacity as logistics companies have been forced to have large storage to meet the high season demand (Haarala, 2020). During the low demand season, the excess equipment is stored, causing challenges to daily operations. EEA (European Environment Agency) highlights in its report "Circular Economy in Europe" (2016) that focusing on offering product-service systems

rather than product ownership is one of the leading business models to be supported in the future.

This thesis is done for Finncont Group Ltd that has a renewed strategy, Continuity, where products, components, raw materials, and the value within is maximized by reusing them as long as possible (Finncont 2020). This thesis will be used as a business plan for the pilot; additionally, it is a full-scale business plan if the pilot is taken to the next level.

This thesis's main objective is to study the process of starting a rental business and piloting in the environmental sector, evaluate business feasibility as a possible new full-scale venture, and analyze choke and risk points of creating new business in the pilot scale.

The second objective is to produce a clear checklist for the reader of what aspects should be noticed when starting a new business and how to avoid the most common mistakes.

Data for this study is collected from earlier studies, the pilot phase, and people participating in the pilot, author, Finncont's other personnel, and customers.

## 1.1 Circular economy and recycling

Circular economy and recycling set a solid foundation for this research and pilot. Increasing concern towards climate change, demand for better recycling, and possible legislation changes create an interesting opportunity to develop new business in product sharing and recycling. The rental business pilot products are waste containers mainly used in the construction sector, and thus, it is essential to describe also the current challenges and possibilities in that sector.

EU regulation on waste treatment is the primary driver that puts increasing pressure on member countries to transfer landfilling into recycling and re-use (Bing et al. 2015). Despite increased recycling and decreasing landfilling, as shown in Figure 1 from the Official Statistics of Finland (2020), a significant amount of disposable waste collected today could be recycled or reused in some form (European Commission 2015).

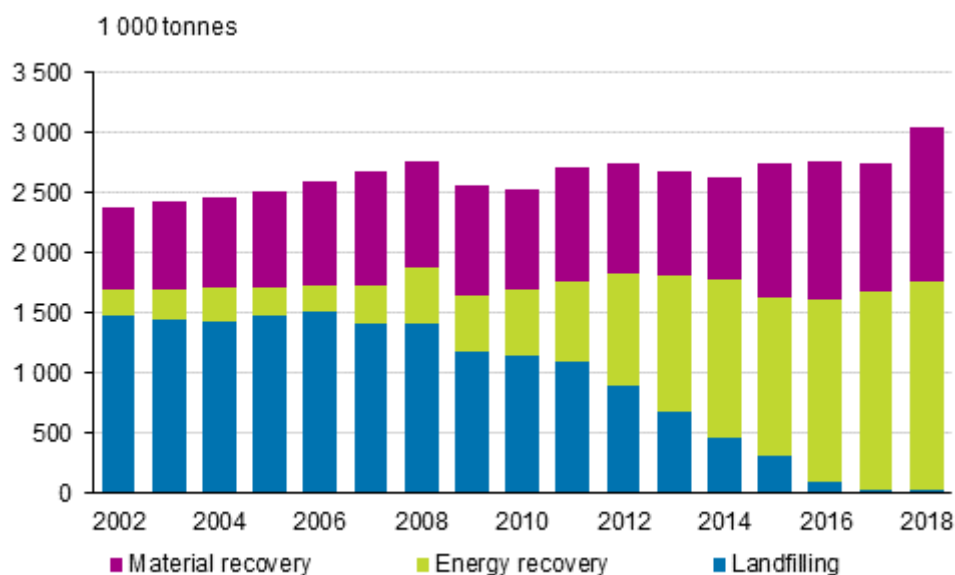


Figure 1. Municipal waste by treatment method (Official Statistics of Finland 2020)

In 2013, total waste generation in the EU was approximately 2.5 billion tons, of which 1.6 billion tons were not in recycled streams (European Commission, 2015). European waste legislation dictates that firstly waste should be prevented and then reused, recycled, recovered, and finally disposed of as presented in Figure 2 from the European Commission Waste Framework Directive (2008). The estimation is that 600 million tons of that amount could be recycled as material or reused (Eriksson et al. 2005). This loss of raw materials in a circular economy means a significant loss of resource efficiency opportunities and creating more jobs (Eriksson et al. 2005). Increasing recycling would also lower environmental impact, lower energy consumption, and lower economic costs (Eriksson et al. 2005).



Figure 2. Waste hierarchy (European Commission Waste Framework Directive 2008)

## 1.2 Circular economy in construction

Besides general opinion towards more sustainable living and increased recycling demand, the need for better recycling of construction and demolition materials is high. Especially Europe's construction sector must be more ambitious in its waste management, quality, and quantity of recycling and reuse of materials. The construction and demolition sector currently produces the largest waste streams in Europe with wastes like scrap metal and used cement or wood products. In 2016 the amount of construction and demolition waste, excluding excavated soil, was 374 million tonnes. Many of these streams from demolition and renovation sites are currently unsuitable for reuse or higher-grade recycling. (European Environment Agency 2020).

According to Tommi Tupala (2020) from Lassila & Tikanoja plc., one of the most prominent circular economy companies in Finland, the current low pricing of mixed construction waste does not support the recycling targets. Furthermore, the demand for recycled raw materials drives the market as the pricing for these materials is crucial for the competitiveness of recycling initiatives and investments (Bing et al. 2015). An increase in mixed construction waste pricing would make recycling more attractive to companies as costs are still the primary influencer in construction site waste management and recycling (Tupala 2020). Finnish Government Communications Department (2016) reported that, based on the project "Kohdennetut keinot kierrätyksen kasvuun" (KEIKKA), stronger steering instruments are needed in Finland, not just to reach EU targets, but to increase the amount of waste directed to recycling and strengthen the market of recycled materials.

An additional problem in the increase of construction site recycling is, according to Tupala (2020), knowledge and commitment. The purchasing departments of construction companies compare recycling solutions with cheaper older methods that do not meet the recycling targets. The commitment to increased recycling targets and awareness should reach all customer organization levels, from top management and construction supervisors to single construction workers.

The most effective way to reduce the waste problem in construction is to implement reuse, recycling, and reducing the construction materials in construction activities (Tam & Tam 2006). Tupala (2020) highlights the increased point of origin recycling and the increase of construction companies' awareness as the leading solutions for reaching the targets.

The increasing general demand for recycling added with more competitive pricing of recycling solutions in the future and increased awareness is most likely going result that

recycling at the point of origin increases—thus increasing the need for more physical recycling options like containers for each waste stream.

### 1.3 The structure of the document

This first chapter is an introduction chapter that introduces the background for this thesis, environmental sector, challenges, and upcoming changes in recycling using various sources as a base for the text. After the introduction, the thesis moves to the second chapter, where methodology and research questions are introduced. The third chapter concentrates on piloting and business experimenting theory and presents the most known process improvement methods. The fourth chapter gives an insight into the company's desire for rental business and the changes in buying behavior and customer needs. After introducing the "why", the thesis defines the actual pilot of Finncont Ltd., which is followed by the sixth chapter where discoveries during the pilot are presented and compared to the pilot planning phase. The seventh chapter concludes this thesis.

Chapter 1	•Introduction
Chapter 2	•Research questions and methodology
Chapter 3	•Pilot and process improvement theory
Chapter 4	•Why rental business?
Chapter 5	•Finncont pilot
Chapter 6	•Findings during the pilot
Chapter 7	•Conclusions and checklist

Figure 3. The thesis structure

## 1.4 ENVIRONMENTAL SERVICE TERMINOLOGY AND BUSINESS LINES

To a reader who is not well familiarized with the environmental service sector, it is advisable to clarify it with the main terminology, business lines, and future changes.

### **Waste**

Waste is any material by-product of human and industrial activity that has no residual value (Serpell & Alarcon 1998). Therefore, waste refers to any substance or object which the holder discards or intends or is obliged to discard (Official Statistics Finland 2020).

### **Recycling**

Recycling is collecting and processing materials that do not have any use for the producer. Instead of throwing them away as waste, materials are recycled into new products or raw materials. (The United States Environmental Protection Agency 2020)

Recycling is one of the strategies to minimize the amount of waste. According to Edwards (1999), recycling has three benefits: reducing the amount of new resources used, minimizing transport and production energy costs, and thirdly using waste, which would be lost to landfills or incineration.

### **Circular Economy**

The circular economy is a concept formed from the circularity of biological processes where raw materials and nutrients can be recycled by returning them to the environment or reintroduced to production as secondary raw material creating a closed-loop where there is no waste. (Ruggieri A., Braccini A., Poconi S., and Moscon E. 2016)

### **Renting**

The customer uses the item for a specific amount of time, usually less than one year (Willet & Penland 1975). The customer has no actual ownership of the item but has the right to use it with limitations presented in agreement. Usually, rentals require payment to be made before or during the scheduled rental period (InvestorWords 2020). The rental period's length dictates the rental fee; more extended rental periods require the customer to pay various ownership costs (Willet & Penland 1975).

### **Leasing**

When a company buys a product or asset, it gains full ownership of that asset, including the right to sell the asset at any part of the future. In leasing, the company only acquires

the right to use the asset for a specified time (Clifford & Wakeman 1985). In leasing, the product's actual ownership remains with the lessor (Willet & Penland 1975).

Differentiating leasing from the rental in which the customer can return the item at any point, leasing is usually non-cancellable during the contract period. If the customer cancels the contract during the agreed period, it may be imposed a cancellation fee to cover the remaining costs for the lessor. Secondly, the lessee is usually responsible for taxes, insurances, and other side costs of owning products. Customer (lessee) usually has a lease-buy option during the contract period, where the customer can use an option to buy the product at any point of the contract period. In this situation, the price is calculated using various methods as paid leasing fees or expected market value. (Willet & Penland 1975)

After the contract period, the lessor is obligated to take the leased product back from the customer. Still, the customer also has an option to buy the product with the anticipated resale value (residual value) after the contract. This value and leasing time form together the leasing rate with what the lessor can offer the product to its customer without making a financial loss on resale. If the residual value cannot be predicted, the lessor usually sets it to a minimum value, and therefore leasing fees need to cover the full list price of the product. (Lessmann, Listiani et Voss 2010; Willet & Penland 1975)

In short; The lessor transfers the right to use the item in exchange for payment for a certain leasing period. After the agreed period, the lessee has three options: buy the item at a lower price, return the item to the lessor, or extend the leasing period (Reviso 2020).

### **Hooklift**

Hydraulic hook-lift hoist system that has been fitted to the heavy-duty truck. The system lets the driver roll-on and roll-off containers without stepping out of the truck. This mechanism also secures the container to the truck, so no additional fastening is needed. This mechanism is fast and most common in waste logistics. (Ampliroll Hooklift Systems 2020)

### **Logistics**

Logistics is a way to make sure that a task or objective is accomplished, and all the material and people needed are in the right place at the right time (Market Business News 2020).

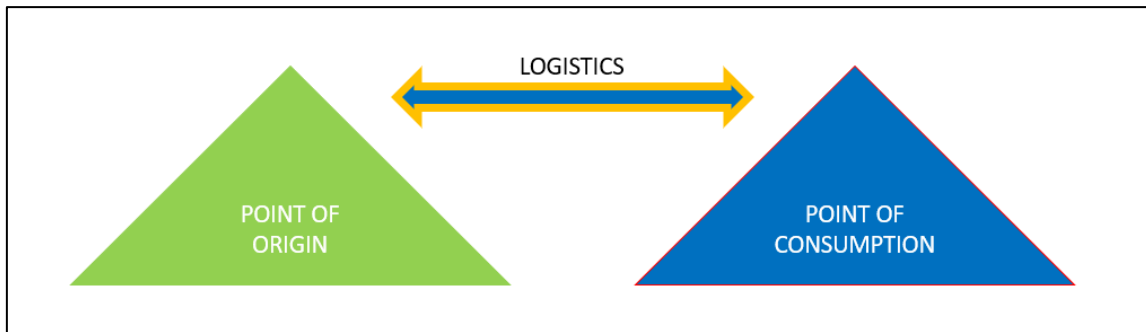


Figure 4. Logistics

Christopher M. describes logistics in his book "Logistics and Supply Chain Management":

*"Logistics is the process of strategically managing the procurement, movement and storage of materials, parts, and finished inventory (and the related information flows) through the organization and its marketing channels in such a way that current and future profitability are maximized through the cost-effective fulfillment of orders" (Christopher 2016)*

### Waste container

A waste container is collecting and logistics equipment that is driven by trucks. Containers are manufactured in various sizes and with optional accessories.



Figure 5. Waste container

Most standard accessories options are related to door mechanisms and roof or tarpaulin. Also, different kinds of metals are used depending on the designed use of that container.

### 1.4.1 Business lines

The environmental sector is a vast concept, including companies and organizations carrying out different activities to protect the environment and manage natural resources. Environmental protection includes prevention, measurement, environmental damage correction, waste management, or wastewater treatment. (Statistics Netherlands 2018)

Waste management of the environmental business sector can be divided into four major business lines that provide services to end customers (e.g., households, businesses, and municipalities). For each other and the end customer, they create added value to the value-chain of circular economy (Figure 6). Inter-organizational cooperation is needed to increase sustainability and achieve a circular economy (Ruggieri et al. 2016).

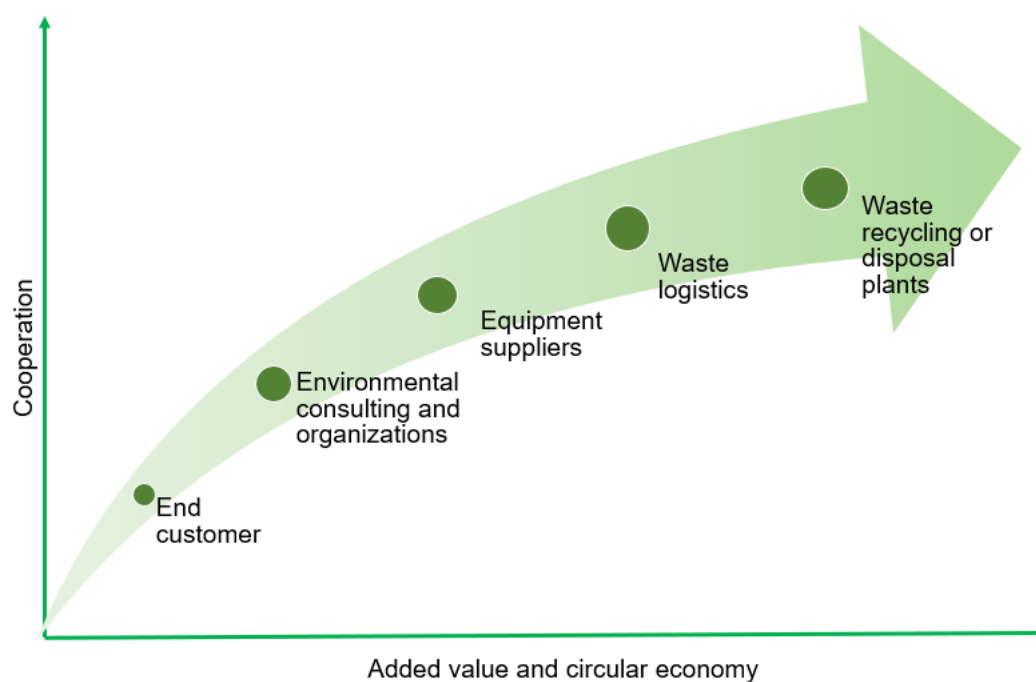


Figure 6. Environmental services

Environmental consulting companies and organizations help customers develop processes to minimize environmental impact and costs and increase awareness and knowledge. Supporting services are equipment suppliers who supply waste collecting trucks, bins, containers, and other professional equipment to facilitate better recycling. Waste logistic companies mainly concentrate on the logistics of the waste from end customers to processing and disposal plants responsible for processing the materials.

## **Consultants**

Consultants conduct environmental assessments to identify and minimize risks resulting in legal action or fines, ensure compliance with current laws, and preserve health and safety (Partner Engineering and Science 2019).

In the waste and recycling sector, consultants can be utilized to research and develop more efficient or cost-efficient methods for waste management.

## **Equipment sales and manufacturing**

The companies that supply waste collectors and processing plants with bins, trucks, containers, and other professional equipment related to the recycling and environmental sector.

## **Waste logistics**

The companies that collect waste and recycled materials, for example, from homes, businesses, industries, or construction sites. These companies mainly focus on logistics and rely on cooperation with other companies in waste recycling. Some logistics companies pre-process materials to increase the recyclability of the materials and, therefore, profitability.

Waste logistics and how it is arranged is affected by external factors such as regulation, energy, and fuel prices, dynamic costs, and varying interests of the whole value chain, customers, collection companies, and municipalities (Bing et al. 2015).

Waste management as a system can be divided into two major parts, firstly a regional waste management system dealing with larger strategic decisions as investments for recovery facilities. And secondly, a more hands-on part dealing with tactical and operational decisions such as transport routes and waste flow allocation. (Ghiani et al. 2014)

## **waste processing**

Private, municipal, or public companies that recycle materials or use them as fuel. These companies usually sell the plant capacity for waste collectors as they aim to operate profitably by turning, i.e., mixed construction waste into valuable raw materials.

### **1.4.2 Business environment analysis**

The rental business pilot's primary market is Finland, so analyzing different external factors affecting the market through PESTLE analysis can give the reader more understanding of the primary market.

**Political:**

The Finnish government is moving forward with new waste legislation. No matter the result and form, these new laws and legislation will change the business environment for many companies as some may lose part of their current business and are forced to look for other opportunities. On the other hand, changing legislation and the business environment gives an excellent opportunity to create a new business or alter an existing one and gain more market share.

Therefore, the political environment is somewhat unstable regarding legislation, but otherwise, Finland is politically one of the most secure and least corrupt countries.

**Economic:**

Finland has relatively high taxation and labor costs. This means that environmental services are not cheap for any customer sector, private or companies. Finding new ways to provide services to environmental companies can decrease pricing challenges and offer affordable recycling solutions for customers, such as construction sites.

**Social:**

Finland is one of the forerunners in recycling and circular economy. The general mood towards the increase of recycling is positive, and thus the environmental sector and recycling generally have a positive outlook. This should mean that increased methods to service customers better would have a good outcome.

**Technological:**

Finland is one of the most technologically advanced countries globally (World Population Review, 2020). People in Finland have almost limitless ways to gain information with the widely available internet. People are technologically aware mainly and are used to operate daily tasks with mobile phones.

**Legal:**

The waste legislation is currently in the preparation phase and under straight forward discussion between private and municipal waste and recycling companies. Both sides seem to have different views on how household waste logistics should be arranged; free competition or arranged by municipal companies. This uncertainty in legislation causes some companies to have unclear long-term planning.

Generally, new legislation demands more recycling and mitigation of material usage in energy production. Finland is currently lagging behind the EU's targets, and therefore strict national legislations are probable to be presented.

**Environmental:**

In general, Finland's society is very supportive of environmental protection and positive towards better recycling. Companies and municipalities are looking for more cost-efficient and nature-friendly options to support their operations and image. Government control in recycling is relatively strict compared to some other European countries. Penalties and fines for environmental crimes are high. Finnish society and economic culture support piloting in the environmental sector.

## 2 RESEARCH QUESTIONS AND METHODOLOGY

This research focuses on the business experiment as a project where the main goal is to evaluate a possible new business for Finncont Group Ltd and identify process choke-points. The secondary aim is to create guidelines for starting a new business and avoid the most common mistakes for Finncont Group Ltd and readers from other organizations. This research will start from the theoretical phase, move on to the actual piloting phase, and finally present its findings. Finally, this research will present a clear checklist of what should be considered when starting a new business.

### 2.1 Methodology

This data for this research has been gathered applying the triangular method: first, by internal discussions during the spring of 2020. Second, results gained during and, if possible, after the piloting phase during the autumn of 2020 and third, from earlier literature about piloting and business experiments and personal experience from the author. The research will be done by using the action research strategy. The author will actively be part of the development and piloting phase.

### 2.2 Research questions

Author and the company Finncont Ltd are piloting a rental business for hook lift containers used by logistics and waste companies. The main research questions of this thesis are:

1. What is a rental business in the environmental sector?
2. What processes are involved in the rental business?

This thesis will additionally provide answers to the following additional questions:

- a) What are the main reasons and obstacles for a new idea to be forgotten or fading away, and how can this be avoided?
- b) What should be taken into notice when defining a new business pilot?
- c) What are the main discoveries during the pilot phase that were not seen in the designing phase, and how could these findings improve the full-scale business?
- d) What kind of bottlenecks or process chokepoints do we have?
- e) What did we learn, and what should we do differently if we would do it again?

While this research is done for Finncont Group that works in the recycling and circular economy business, this research aims to produce a clear idea of how to evolve ideas into a new business with piloting.

### 3 PILOT AND PROCESS IMPROVEMENT THEORY

A pilot, or business experiment, should be an easily replicable test of the business hypothesis that does not answer all the questions presented. Instead, pilots are not meant to see if something "works", but more to produce information and insight about the idea on a small scale and fast. This information and insight can be utilized to adjust, cancel, or expand the idea to the next level. A business experiment is a place where to be wrong, rather than in full scale. (Schrage 2014)

Many papers are researching the dilemma of starting a new experiment. Many of them have a common point of the experiment needed to be fast and straightforward. In his book "The Innovator's hypothesis" (2014), Schrage underlines that the launching of a new business should be: Simple, fast, cheap, smart, lean, and important. Anderson and Simester write in their article "A step-by-step guide to smart business" in Harvard Business Review (2011) that successful experimenting has seven rules:

- 1) Focus on individuals and think short term.
- 2) Keep it simple.
- 3) Start with a proof-of-concept test
- 4) When the result comes in, slice the data
- 5) Try out-of-the-box thinking
- 6) Measure everything that matters.
- 7) Look for natural experiments.

Pilots differentiate from the actual full-scale operation. Pilots should have a clear start (kickoff) and end (delivery) date when the project is carried out (Schrage 2014). Without a clear project timeline, the pilot can shift from a test to something that "has always been done". Additionally, the pilot should be so small that "pulling the plug" would not harm your business in any way (Schrage 2014). This means that companies could have difficulties ending a pilot that has been invested too much time or money, and ending it would cause significant losses or damage to the company's image. The pilot should also be so simple and clearly instructed that anyone from the organization could take over the project with a minimal introduction (Schrage 2014).

When starting a business experiment, avoiding obstacles is one of the most crucial challenges. Obstacles can come from external origins, such as legislation concerning pricing, or internal origins, such as organizational culture. Internal obstacles are often larger than

external ones. Companies that have made decisions based on intuition and quickly or look badly at failures may have difficulties shifting to experimenting culture. (Andersen & Simester 2011)

It is advisable to have a control group in a business experiment to compare the experimenting group. This way, results can be studied better. One of the most common mistakes is to neglect control groups and roll out tests to the entire customer base, internal or external. With control groups, challenges may emerge concerning the separation of groups as actions with one group should not spill over to the other. If the separation between groups cannot be done easily, one possible solution is to vary the pilot over time. (Andersen & Simester 2011)

The second crucial challenge of experiments is feedback. Experiment without a way to evaluate feedback is uninformative. An experimenting company should be able to observe how customers respond to the experiment, whether the feedback is behavioral, such as purchases and actions, or perceptual such as customer feedback or market research. (Andersen & Simester 2011)

To be informative, the pilot should be carried out with thought and care. A too vague or big pilot cannot produce exact information about the idea. It is crucial to keep in mind that experiments are actions that go beyond words; Schrage underlines in his book "The innovator's Hypothesis" (2014) with a statement that good experiments are more useful and valuable than just good ideas. From a good experiment or pilot, the company and people can learn and manage future expectations better than just from ideas (Schrage 2014). Setting realistic result expectations is also a crucial part that 95% of companies fail to do (Andersen & Simester 2011).

A relatively common misbelief is that only successful experiments are useful. The aim should not be to produce a perfect test that results in only positive outcomes; instead, the goal is to learn and make better decisions in the future. If the set hypothesis of the pilot proves to be right, it gives vital insight. If the results differ from the hypothesis, it still gives insight but just in another way. This could be described as a no-lose, win-win situation. Without the experience gained from experimenting, decisions are generally made based on someone's gut feeling. One of the most informative experiments is an unsuccessful experiment. An unsuccessful experiment says that someone's gut feeling, with what the experiment was based on, was indeed wrong. This can save a significant amount of money or time later as mistakes are spotted during the small-scale experiment. (Andersen & Simester 2011; Schrage 2014).

Piloting aims to improve profitability via publicly visible parts of the company, as new products and services, or publicly invisible parts such as more efficient and leaner processes or production lines. Anderson & Simester (2011) describes the journey of increasing profitability with a culture of experimentation as challenging because creating this culture requires work to be done to overcome internal political and organizational obstacles in the company. They add that organizational acceptance that many of the experiments will fail is crucial for this culture shift.

Both Schrage (2014) and Andersen & Simester (2011) indicate that the key to successful experimenting is quickness and repetition. By repeating small scale tests repeatedly that gives insight to the subject, the outcome can be significantly better than running one more extensive test. By dividing the experiment into small parts, it is easier to understand what causes what.

### 3.1 Process improvement methods

In literature, it is a common outcome that experimenting increases general process effectiveness in business. The most recognizable and used process improvement models are Lean Management and Six Sigma, while later, the combination of these two "Lean Six" has been adopted by companies looking for the best aspects of each model (Arnheiter & Maleyeff 2005).

#### **Lean Management**

The lean management system was created according to Arnheiter and Maleyeff (2005) based on the study by Inman (1999) from Toyota production system (TPS) pioneered by engineer Taiichi Ohno and Shigeo Shingo. Instead of large-batch production, where faulty products are discovered usually at the very end of the production line, Lean management relies on processes of small batch sizes and where everything is "make-to-order", filling the next need in line. Lean management aims to pursue perfection and minimize waste (physical or more abstract like time). (Arnheiter & Maleyeff 2005)

Lean management is a constant improvement journey, and the final goal is perfection (Arnheiter & Maleyeff 2005). As Arnheiter and Maleyeff (2005) quote a study from Womack and Jones (1996), "a journey to perfection is never-ending".

Another crucial part of Lean Management is reducing variability in every aspect of the operation, including variability in demand, manufacturing, and suppliers. Manufacturing variability reduction concentrates not only on product characteristics like dimension but also on time used for the single parts of the process. The goal is to reduce production

downtime or increase operators' skill level and decrease the total time consumed. Standardized work procedures are one of the main tools in Lean Management. Supplier variability improvement concentrates on improving supplier quality and delivery times, which can be achieved by deepening the partnership and cooperation. (Arnheiter & Maleyeff 2005).

According to Arnheiter and Maleyeff (2005), a common misbelief is that Lean Management is only meant for manufacturing. They underline that even created in a manufacturing environment, Lean observes every part of the process as a service to someone and finally to a customer; thus, Lean Management can be utilized in any business where customers exist. In short, Lean Management was created to increase the flow velocity of the product or service by eliminating all of the excess activities.

### **Six Sigma**

The Six Sigma -model was created by Motorola Company in 1987 and is widely used in the production industry. It concentrates on decreasing the number of defective products in manufacturing complex products. Six Sigma has since evolved into a broader long-term business strategy that embraces the mitigation of faulty products and services as everyone in the organization is responsible for quality. Today Six Sigma is not just about the quality but also more generally increases organization output value by increasing availability, reliability, delivery performance, and after-market services. In short, Six Sigma was created to ensure the quality of the final product by eliminating opportunities for defects. (Arnheiter & Maleyeff 2005)

### **Lean Six**

By merging the two earlier said process improvement methods, companies could use what Arnheiter & Maleyeff (2005) describe as "Lean Six". This method would take out the best part of each; Six Sigma's production quality and elimination of excess activities from Lean Management. Arnheiter and Maleyeff write that Lean Six organization would take three values from each method, from Lean Management;

- Seek to maximize the value-added content of all operations.
- Ensure incentive systems that result in global (throughout) optimization instead of local optimization.
- The Decision-making process is based on the impact on the customer.

And from Six Sigma, this model would include:

- Decisions are based on scientific studies, not ad hoc studies.

- Promotion of methodologies that minimize the variation of quality.
- Design and implementation of education and training systems.

#### 4 WHY RENTAL BUSINESS?

Companies operating in the environmental sector have preferred to buy and own their equipment like trucks, containers, and waste bins. This has meant that waste logistics companies have tens, hundreds, or even thousands of waste containers and a relatively high amount of capital tied to them. As waste containers are needed most during the warmer months as construction sites operate entirely, this investment generates income mostly during the high season. For environmental companies, this has meant inefficient usage of owned containers and investments. Average container costs from 2 500 to 3 500 euros, and thus the logistics company can find them having even hundreds of thousands of euros tied to non-profitable assets during the wintertime.

*"Owning containers is always balancing between availability and not being able to serve our customers. Also, the challenge is that storage yards are overfilled during the wintertime. Our high season is from April to October" (Haarala 2020)*

Leasing has emerged as a popular method to acquire products and assets as companies are not willing to instantly invest large amounts of money but rather divide costs into more extended periods (Lessmann et al. 2010). Leasing has an interest and other costs to cover the risks for the lessor. However, companies using leasing have usually invested the money saved from direct purchase to other productive projects or crucial maintenance. Smaller companies may also struggle to obtain loans from banks and find it easier to agree on a contract with a leasing company (Lessmann et al. 2010).

Occasionally in the environmental sector, leasing can be seen mostly by older entrepreneurs almost as an insult, being a sign that the company would not have money to buy the needed equipment directly. The author has experienced this personally numerous times during the 12 years of work in this sector. This attitude is changing as leasing is not seen anymore only as an option for companies that are not doing so well, but as an option where companies can predict business better (Lessmann et al. 2010). For smaller companies, leasing is a foreseeable way to invest and re-rent products profitably. For example, if the company pays monthly leasing of 80 euros per container for 36 months, they could re-rent that same container to the end customer with 120 euros and profit from the deal. After the leasing contract, that container has a low residual value, usually between 1-10%, and after paying that, the company owns that container.

Renting equipment has been relatively rare within environmental service companies because they have preferred exclusive ownership or leasing. Harsh competition in the logistics market also means that companies cannot set high customer prices to fund

investments or depreciate equipment quickly. Someone will always offer low pricing to get that contract. Containers and renting them are not the primary revenue stream for logistic companies, but the container's daily rent is one major factor in customer decision making. To meet customer needs, logistics companies are forced to prepare for the high season. For the logistics company, rental containers' benefits would be mainly flexibility, a pay-to-use model, and free space from the storage yard.

The following chart underlines the main differences in each of the three main ways of owning and using products (owning, leasing and rental). Each of the methods has its benefits and drawbacks. Full ownership means that the owner can decide, within legal limitations, for what and how the product is used. This, on the other hand, means that the products must be paid straight away when the purchase is made without any payment plans. Between owning and rental is a lease-purchase agreement (LPA), which could be considered buying the product in smaller parts. In this form of owning, the leased product's actual ownership is with the financing company until the product is paid fully. This method is usually used in larger investments, such as trucks or other professional equipment. Companies also use LPA when buying large amounts of cheaper products; without LPA, the initial investment could be high because of the large number. With LPA, the seller sells the products to a financing company that sends monthly payments for the user. LPAs usually have residual value for the products, starting from 1% of the product's original value. For example, if the container is sold to a financing company for 3 000 euros, the residual value would be 30 euros. After the LPA contract period, the user can buy full ownership of the product with that residual value. LPA is a way to free capital from large investments for other use, but it has drawbacks also for the customer. Financing companies take an interest, and other fixed costs like invoicing fees can accumulate to significant sums. It is also notable that financing companies demand that the user insures the product, for example, against theft. The newest and most emerging way to use professional equipment is rental, where the user only pays for the actual usage and does not have any risks of owning the product. This also reaches the risk of service costs and fixes that can potentially be expensive in technical equipment. For rental company renting business can be highly profitable if products require minimal maintenance and contracts are made with care.

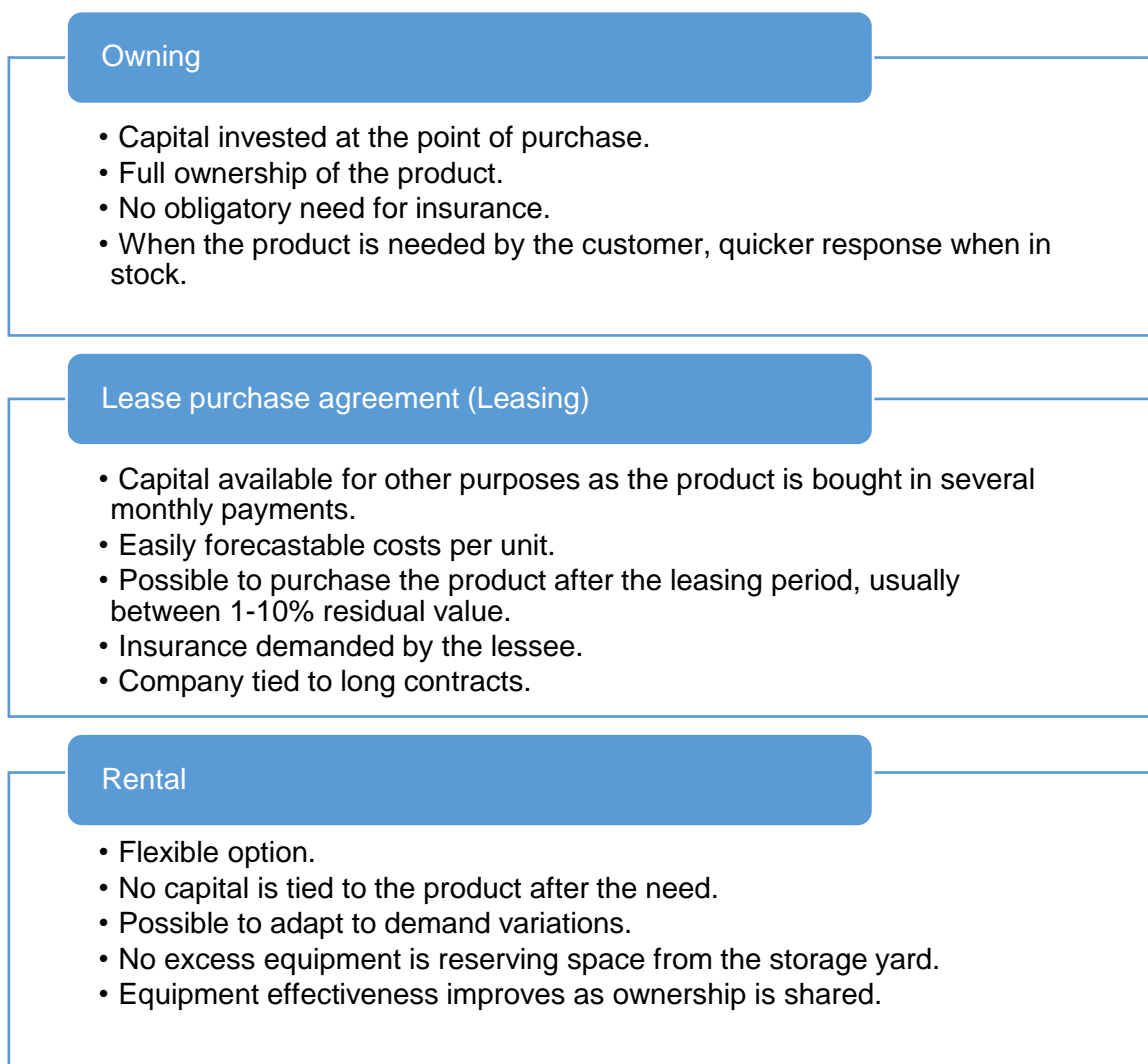


Figure 7. differences in ownership

The main reasons for starting a rental business pilot are firstly to learn new business and its processes in pilot-scale rather than full scale. Secondly, to meet the changing customer needs described earlier in this part and thirdly to generate business growth. The rental business pilot is a natural experiment for Finncont as it has imported, manufactured, and sold environmental equipment for many years. As presented in the Improvement Venn Diagram (Figure 8), all these earlier said three aspects are strong influencers in the rental business pilot.

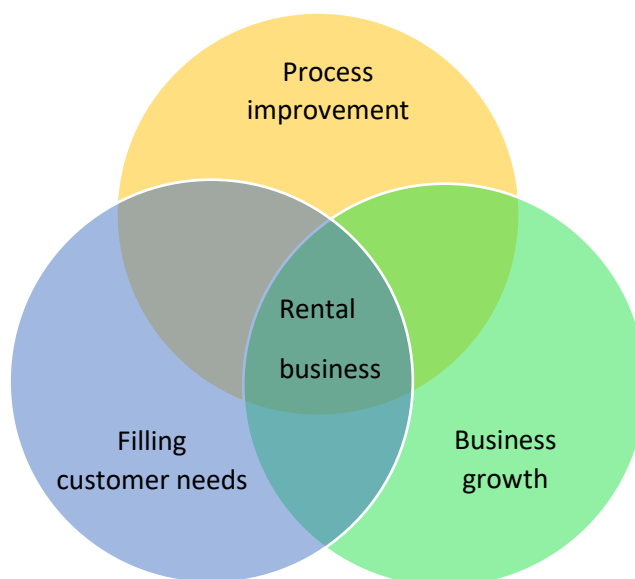


Figure 8. Venn's Improvement Diagram

Learning new business and alternative processes is crucial for the company to understand new possibilities and improve its efficiency. Experimenting with alternative processes in action gives valuable insight into current processes from different perspectives that could be challenging to evaluate without experimentation. The gained experience helps to review and create processes with process improvement tools like Lean Management or Six Sigma.

Changing customer needs is linked to changing buying and usage habits and legislation changes, as described earlier in this part. Meeting this evolving market allows a natural and interesting opportunity to generate business growth and increase market share. By experimenting new business in action, it is possible to increase profitability by streamlining processes and generate more value for the company and customers as well.

Studying car or tool rental would not apply to this thesis as renting would not be the main business for Finncont as it is for most tool or car rental companies. Tools are rented mainly to fill a predicted and specific need in construction sites, such as cutting concrete. Rented tools are also usually more expensive professional tools, and as they only fill a specific need in the construction site, acquiring all the tools needed would mean for the construction company significant initial investments. On the other hand, car rental is often short period rental and happens mostly in other locations than typically renting person lives. This container rental pilot situates somewhere between these two regarding the expected rental period and causes of rental. Containers are not meant directly as tools for a

construction site, but more to be part of it. The average rental period is expected to be between a few weeks to a month on average, which also sits between the car and tool rental. The business's nature is slightly different; It should be noted that for Finncont rental business is an additional service to serve clients better as for car or tool rental companies renting is the core business.

An excellent example of professional-level equipment rental is Volvo Truck Rental, which offers logistic companies rental trucks to meet quick demand changes or as a backup truck for broken trucks. Volvo mainly concentrates on truck sales, and therefore rental is an additional service to serve their existing and new customers better. This is similar to Finncont's idea of a rental business. According to Volvo Truck Rental team leader Jonny Österholm, Volvo started a rental business in 2012 and, in his own opinion, most likely to meet customer needs as logistic contracts were shortening. Earlier contracts were longer, but the shortening of contracts caused logistic companies some risks as there is no guaranteed use for the truck after a short time contract. Approximately 60 percent of rental contracts have a duration of three months or more. (Österholm 2020).

The screenshot shows the Volvo kuorma-autot SUOMI website. The header includes the Volvo logo, the text "Volvo kuorma-autot SUOMI", and a search bar. Below the header is a navigation menu with categories: KULJETUSTARPEET, KUORMA-AUTOT, PALVELUT, JÄLLEENMYYJÄHAKU, UUTISET, YRITYSTIETOJA, and OTA YHTEYTTÄ. The main content area features a search form titled "AJONEUVOHAKU" with the following fields:

- Noutopvm. (Pickup date): 22.8.2020
- Palautuspvm. (Return date): 22.8.2020
- Noutopaikka (Pickup location): Vantaa
- Ajoneuvotyyppi (Vehicle type): Maansiirtoauto

A blue "Haku" button is located at the bottom right of the search form.

Figure 9. Volvo Truck Rental

Finncont Group's target with this pilot is to offer own customers, like logistic and waste companies, an easy way to maintain sufficient storage of owned containers and answer the high demand with Finncont rental container without the need for investing in an owned container when there is no clearly visible more extended usage in sight. Österholm says that renting is an easy option for Volvo's clients as there is no need to invest heavily with no clear future in sight. Also, the predictable costs of rental products make pricing easy for

the renting company as they know exactly how much they should charge to cover the costs (Österholm 2020).

Renting can also open opportunities to direct sales as new or previously lost customers first rent products. With a positive experience, they want an offer when they are in a position where owning a product is an option again. (Österholm 2020)

The rental business has some drawbacks also. The main issues are related to the products' condition when returned or, as Österholm says, teaching customers to use them correctly. Some customers may have used quite older models, and they struggle to use modern equipment. Not having the experience and knowledge of modern accessories can cause a bad customer experience, as the customers do not know how to use them correctly (Österholm 2020). In container rental, the main risk predicted is thefts or the condition of the containers when returned.

The most significant business risk for Finncont estimated beforehand are rental effectiveness (low demand). Lower demand than expected causes insufficient rental income and profitability because of fixed costs. In a situation where containers need to be sold, it should be relatively easy as the demand for used containers is high. Finncont wants to listen to its customers and offer them new solutions. Good resale value decreases financial risks substantially. Better customer-focused thinking is one of the future goals set. The company has received some inquiries about the rental business in the past. Finncont's pilot is a customer-centric experiment where the company can learn from challenges and mistakes before going full scale.

#### 4.1 Process differences between sales, leasing and renting

Sales and delivery processes differentiate slightly between renting and regular sales or leasing. The following chart (figure 10) presents the differences between each of the sales processes.



Figure 10. Process differences

Each of the processes starts in a relatively similar way; after the first contact with the customer, the credit rating is checked. There are guidelines within the company that how different ratings are handled. If the credit rating is above a specific limit, there are no restrictions to proceed with the sales process. If the credit rating is below the set limits, options are not to offer the customer any products or offer products with a downpayment.

The rental process is the most straightforward of these. Either there are rental containers available or not. If not available, the customer's need can not be filled with the rental, and storage containers are offered. One of the earliest processes in the direct sale or leasing process is to map out the customer's needs. With this, the aim is to see if containers in storage could fill the need. If the customer accepts the basic model, the processes move directly to sending the proposal and sending the order confirmation if the deal is made. If the customer needs a more customized solution, the pricing for that solution must be calculated by the factory. This process point usually lasts a couple of days after what the proposal can be sent to the customer.

In direct sales and leasing, the containers are checked when they arrive from the factory. With this inspection, the product is compared to the order. The primary purpose is to guarantee that the delivered container fills the requirements and has all selected accessories. In rental sales, the inspections happen before and after each rental contract. The rental inspection is described later in the text.

The leasing model differentiates from rental and direct sales processes as there is a financing company involved as a third party. The financing company agrees or denies the leasing contract based on several different factors, such as payment history or the leasing size compared to the customer company's size. If the financing company accepts the leasing contract, the salesperson forms a contract with all the required information. As in rental or direct sales, the company sends the customer invoices. In leasing, the invoice is sent to the financing company what then charges monthly leasing fees according to the contract.

## 4.2 Market potential

The market potential for the container rental business is quite challenging to predict and calculate. The main questions or concerns are related to the actual customer need, pricing, and rental effectiveness (how many months annually the container is rented).

In theory, the market potential is high. There are several thousands of hook lift containers in Finland. For example, the biggest circular economy company in Finland, Lassila & Tikanoja Plc, a significant operator in the capital region Vaihtolava.com Ltd, and the second-

largest circular economy company operating nationwide Remeo Ltd have a combined number of about 6 000 containers. These are just the more prominent operators, and they all own their containers without few exceptions. Small to medium-sized companies struggle more with storage space and meeting the high demand than these larger companies. Estimation is that this business could increase from a pilot size of 10 containers to an actual business of around 200 containers.

### 4.3 Competition in the market

#### 4.3.1 Sales

Besides of Finncont Group, three major companies sell new hook lift containers. Competition in this business is challenging and price-oriented. These three competitors have a combined turnover of approximately 17 million euros. The actual amount of container sales is challenging to evaluate, as companies can also have other income sources. Compared to Finncont's income from containers, this amount indicates that a significant market share increase is possible. To clarify, Finncont does not want to reveal annual income from containers publicly. The following numbers are collected from the Suomen Asiakastieto Oy website in October of 2020.

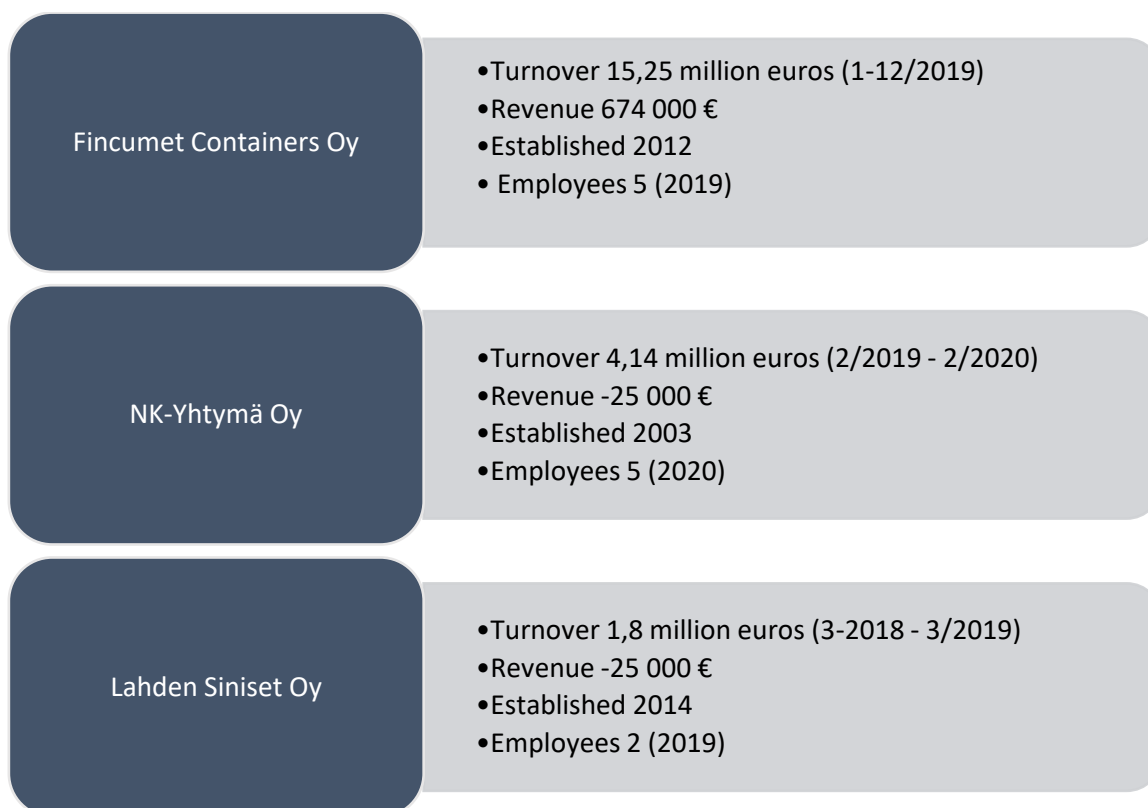


Figure 11. Competitors of container sales in Finland

### 4.3.2 Rental

Hooklift container rental business should be divided into different parts; firstly, the companies that rent containers to logistic and waste companies and secondly companies that rent containers to end users like construction or property management companies.

Finncont aims this pilot to logistic and waste companies, as there is little to no competition in that market. By renting containers to end customers and construction sites, Finncont would damage its own main customers' business, which is not a desirable situation. However, possible cooperation models could be studied and designed with different organizations in a way where containers are rented straight to end customers without harming customer relations with logistics and waste companies.

The second part of the market is the companies that rent containers to end-users (i.e., construction sites, condominium spring cleaning, facility services, industries). This part of the market is heavily saturated, as there are hundreds of companies renting containers to end-customers. Additionally, container rental to end customers is usually linked to waste logistics, creating a comprehensive service.

## 5 FINNCONT PILOT

Finncont decided to pilot rental business with containers as the company is looking for new customers and growth in the container sales market as Finncont is currently in challenger's role. The pilot is meant primarily to give the company information about the rental business in general. However, additional information will be acquired about whether the product or service is viable and points out any unexpected issues (Bythestart Ltd 2020). Generating calculations and assumptions in Excel is advisable, but the pilot gives real information on whether there is a market or not (Bythestart Ltd 2020). The real value of piloting is insight; Finncont's pilot aims to gain insight into the rental business's external and internal processes. Insight is one of the main benefits of piloting; a small-scale pilot gives information on what is involved in the piloted subject (Bythestart Ltd 2020; Schrage 2014). The gained insight can be utilized to review and develop processes with process improvement tools. An additional target is to evaluate the rental business as a possible new business line for Finncont Ltd.

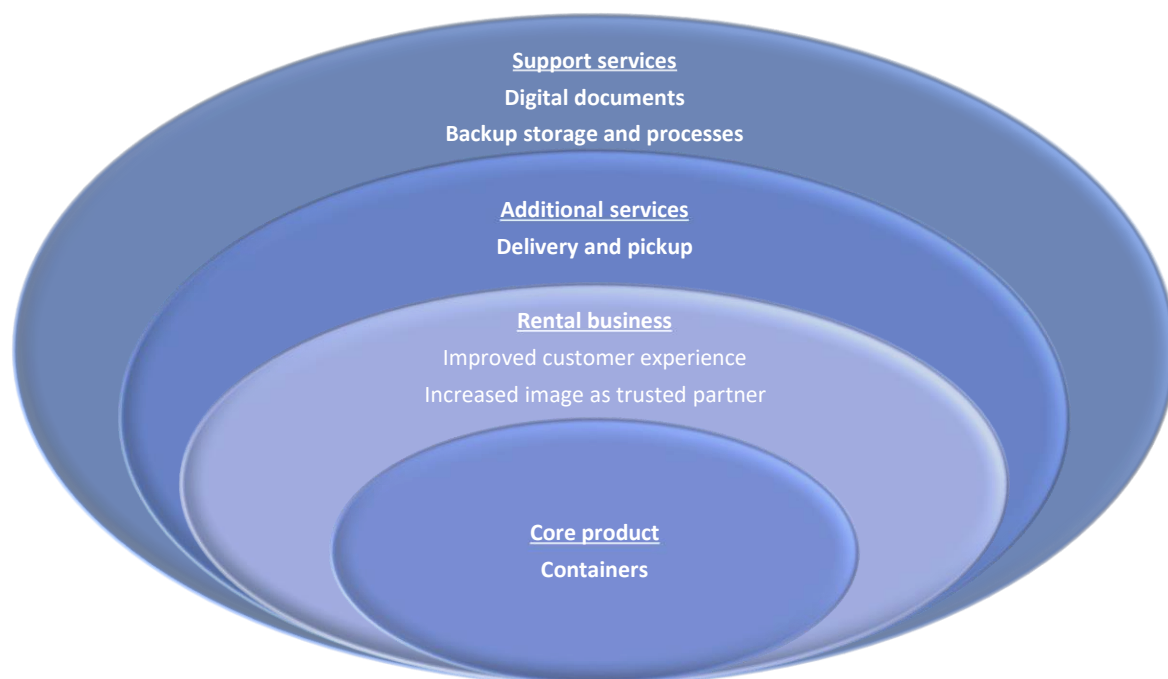


Figure 7. Pilot business map

Finncont took one of the simplest products available, created simple processes, and made relatively simple calculations. This type of pilot was natural and straightforward for Finncont as all core parts of the pilot already exist. As Anderson & Simester (2011) explain in their article "A step-by-step guide to smart business", keeping the experiment so simple that it could be run with existing resources is crucial. For the pilot, the question is more to combine the parts and execute them.

## 5.1 From a good idea to execution

The rental business's interest has been there for a while as part of the new company strategy. The pilot outlines were clear, but the idea and goal seemed to be too broad; too many products, product lines, processes, and even people. There was no actual rental business experience inside the company, making it challenging to proceed with the idea. This caused stagnation as the idea was bounced around, and new ideas kept coming into the mix.

As Schrage said in his book "The innovator's Hypothesis" (2014), ideas distract companies and cause the company to create more ideas or refine the idea without being taken into physical testing. The second common mistake that Schrage (2014) points out is that organizations are not looking to test or implement quickly; it wants to study and analyze them first. This was clearly the case with Finncont, as the idea was not small enough to be tested. Definitions and targets were initially vague; the aim was to see if this type of business would "work".

In Finncont's renewed pilot project group meeting, attendees collectively agreed that the best solution is to move on with the simplest product and maybe the most natural of all the options at the table, as described in part 3 based on studies from Schrage (2014) and Anderson & Simester (2011). An additional bonus was that even if the pilot would turn out to be a bust, the selected products have high resale value even when used. This decision minimizes the financial risks involved in the pilot. Relatively low investment of ten containers and the creation of light processes made it possible to quickly move forward with the pilot. The goal of the scaled-down pilot was to learn and gain insight.

While this pilot certainly has some uncertainty concerning market size, pricing, customer needs and processes, the pilot provides unarguably more information about the idea and processes in action. When creating new, struggle to manage uncertainty reveals deeper insights into the idea (Schrage, 2014). While making different calculations and projections in Excel, theoretical calculations can never compare to actual real-life piloting.

The pilot was meant to be quick to implement without creating excessive processes or calculations. The final aim is to experiment processes and a possible market for this service with set pricing and ROI (return on investment).

## 5.2 Pilot

Following is presented what the Finncont pilot was based on. Different pilot segments are described for the reader concisely.

### 5.2.1 People

As Schrage said (2014), it is crucial to keep the number of people participating low when experimenting. Our pilot team consists of six people with diverse expertise and backgrounds, with what the pilot should produce improvement ideas and notes from all main processes. The pilot project group is:

Jan Reiners – Author and pilot owner.

Minna Mäkelä – Finncont Group marketing director and former lead buyer.

Mikko Kärkkäinen – Finncont Ympäristötuotteet Ltd CEO acting as a supervisor.

Janne Rask and Antti Laitinen – Storage staff responsible for containers.

Riitta Auvinen – Responsible for invoicing.

### 5.2.2 Customers

Customers for the pilot and possible full-scale operation are projected to be waste management, municipal, and logistics companies. These companies offer their services, including container rentals, to end customers. This makes these companies interesting for Finncont as they usually buy or lease containers.

Company and sales have divided customers into three different groups for this pilot:

Tier 1 – First group of customers that the company has a good relationship with and is most likely to be interested in based on the pre-evaluation of sales.

Tier 2 – Secondary customer group that the company has a good relationship with but is not so likely to be interested in pre-evaluation of sales.

Tier 3 – Tertiary group of customers that are mostly new customers for the company.

### 5.2.3 Customer outside of the scope

End customers like construction companies or industrial customers are out of scope, at least in the piloting phase, because of "hygiene" in the market. Finncont does not want to upset its clients by taking their customers' customers or limiting their business opportunities.

Further studies and researches for different cooperation models are advisable. With cooperation models with different organizations, it would be possible to increase sales, market

share, and help customers achieve recycling targets. As Ruggieri et al. (2016) said, cooperation is a key to achieve a circular economy.

#### 5.2.4 Contracts and legal aspects.

Contracts are often seen as necessary legal documents designed by lawyers that burden a smooth business flow, even if they protect firms against risks, losing money, or worst-case scenario litigation. Contracts are usually seen as just a safeguard for companies where most of the risks are assigned to the other party. Besides the hard elements of contracts resulting from profit maximization and cost-saving, there is also a softer approach in a changing modern market where risks are shared, and long-term cooperation is searched. Softer elements emphasize collaboration and flexibility. (Nysten-Haarala et al. 2010)

When renting a product used heavily as waste containers, it is crucial for both parties that contracts are made properly with relatively hard, or at least clear, conditions. Without any written contract or vaguely described circumstances, there could be disagreements whether the damage and wear during the rental period were caused by normal use or misuse. If the wear is under normal usage like minor dents and scratches, the service provider covers the fixing costs. If damages are caused by misuse or accident, the renting customer covers the costs of repairs. A softer approach can be utilized to ensure long-term cooperation with the desired customer, but liabilities must be appropriately covered. The company uses an electronic signing service from a third party for the piloting phase, as described later in part 5.3.

#### 5.2.5 Condition inspections

A big part of the rental business is the risk of damages and liabilities. This business does not differ from car rentals as much could be thought of. The customer rents a product in a certain condition, uses it and returns it when no longer needed. If the condition before the rental period is not documented properly, possible fixing or cleaning costs would be challenging to charge from the customer. Alternatively, the customer could be accused of damages that were there already caused by an earlier customer. Thus, documentation of conditions before and after the use serves both sides.

### 5.2.6 Services and fixing

After the rental period, containers need to be checked, cleaned, and, if needed, fixed. The main issue is to ensure work safety; possible damages to the hook, railings, and locking are checked and fixed if damages are found during the inspection.

### 5.2.7 Product definition

Pilot project group describes the offered product as:

- Short-term – Customer collects and returns the product after a short period when the products are no longer needed—a rental period of under a few months.
- Season term – Customer rents the product for season, like summer or spring season.
- Long term – Customer rents the product for a more extended period or with an open end.

### 5.2.8 Budget

Finncont's pilot is a smaller scale experiment with ten containers valued just over 30 000 euros. This amount is never lost totally as the products purchased with this amount will have good resale value even after the pilot. Marginal investment can result in high-value information about processes and possibilities that would be expensive to find later. As Schrage (2014) says, the economics of experimentation are your friend.

### 5.2.9 Fleet management

The likely need for a separate fleet management system was identified in the planning phase, and a search for a suitable service provider was started during the summer. Fleet management mainly follows rented units' physical location, service costs, and rental effectiveness. Finncont selected a third-party SaaS (Software as a Service) provider after meetings with three service providers. Finncont wants to evaluate the benefits of fleet management and tracking services on a small scale. If service is useful to the company, further experiments are possible on a larger scale and other products.

### 5.2.10 Calculations

Every experiment should have a clear idea of the outcome. It is essential to understand that meeting those numbers is not a failure, but part of the experiment and the possibility of learning new and understanding selected business.

Theoretical calculations about viable businesses were made to gain an understanding of different situations around the pilot. Calculations inspected different rental rates, effectiveness, residual values, and other aspects. With these calculations, it was possible to set, in theory, profitable pricing. It is easier to evaluate during the pilot with well-made calculations, that were the assumptions made beforehand accurate or not.

The calculations made for this thesis pilot are made with just ten containers. The aim is to gain business knowledge and understand the risks and processes involved before a possible full-size operation. The point of this pilot is to test business with low costs and risks. Starting a full-sized operation would be an investment of approximately one million euros.

### 5.2.11 Marketing

As this pilot is meant to be relatively small scale and with selected customers, there is no need for excessive public advertising in professional publications like magazines, LinkedIn, Facebook, or websites. Additionally, the low amount of rentable containers limits the need for marketing. The pilot's primary purpose is not to acquire a high number of rental deals. The author, as named pilot phase salesperson, will contact selected customers by phone. If customers in Tier 1 are not interested at this point, calls will be made for the secondary group of customers.

In addition to marketing calls, email marketing will be done for targeted customers by using existing customer data. Marketing of rental pilot will also be made daily inbound customer calls while they inquire or order other products.

### 5.2.12 Pricing

Pricing of the piloted service is based on assumptions made beforehand about the rental rate (What percentage of time is the container rented) and residual value. These two aspects greatly affect the rental fee, as Lessmann et al. (2010) and Willet & Penland (1975) described.

If rental effectiveness is higher than estimated, pricing could be too low. On the other hand, lower effectiveness than estimated might indicate too high pricing, wrong location, or any other reason that should be investigated better. Residual value means the

estimated resale value of the product after the time it is planned to be in rental service (Willet & Penland, 1975). If the residual value is lower than estimated, for example, because of high wear and tear, rental fees should cover more of the planned income. It should be noticed that too high or low pricing can give false information in the piloting phase. If possible, divide pilot customers into a few different groups where different pricing mechanisms could be tested.

### 5.2.13 Timeline

A pilot should be fast and agile, as Schrage (2014) said. However, this is a relative concept as businesses work differently. In the waste management business, end customers may need equipment from a couple of days to a few weeks. But our clients, logistic and waste processing companies, need our service in theory from a few weeks to months. Usually, waste containers in heavy use have a life span of about five years; thus, this experiment lasting for a couple of months is "fast" in this market.

A pilot kick-off meeting was held in March of 2020, where it was decided that the company will move on with the rental pilot. From that meeting, the renewed pilot project group started defining the project and the core product. During the pilot planning phase, the Covid19 situation escalated and caused some delays as the company concentrated on everyday business. During the spring and early summer, the project group produced contracts with an attorney, marketing materials, expected calculations of the pilot, and finally presented the pilot to the company board of directors, where the final approval was received.

Activity	4/20	5/20	6/20	7/20	8/20	9/20	10/20	11/20	12/20
<u>Phase 1. Planning</u>									
• <u>Kick-off meeting</u>	█								
• <u>Designing the pilot</u>		█	█						
• <u>Orders and delivery</u>			█	█	█				
• <u>Creation of materials</u>		█	█	█	█				
<u>Phase 2. Piloting</u>									
• <u>Marketing to customers</u>				█	█	█	█	█	
• <u>Rental deals</u>							█	█	█
• <u>Rental processes refining</u>						█	█	█	█
<u>Phase 3. Conclusions</u>									
• <u>Analyzing the pilot</u>							█	█	
• <u>Writing a report</u>								█	█
• <u>Presentation of findings</u>									█

Figure 12. Timeline of the pilot.

### 5.3 Pilot processes

The pilot process map was designed during the spring of 2020, where the project group created a circular process map. This map acts as a simple guide for attending people to ensure the flow of the process.

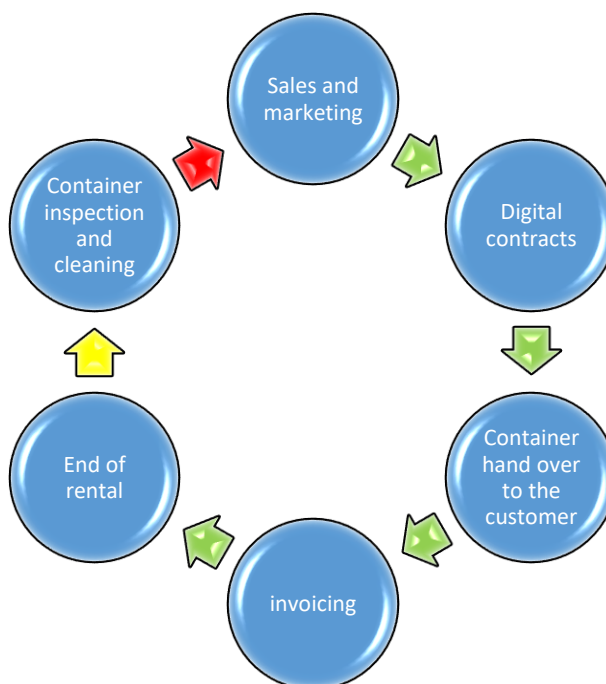


Figure 13. Rental business process map

## **Sales and marketing**

The author is mainly responsible for sales. Additionally, another salesperson has received an introduction to the sales process if he gets inquiries about rentals.

Marketing is done by company marketing personnel. Marketing materials include brochures and email marketing letters in addition to professional photographs of containers.

## **Digital contracts**

Contracts are designed to be made electronically to save time, ensure legal aspects of contracts, and limit the whole process's possible choke points. With Visma Solution Oy's service Visma sign, contracts are sent and approved electronically. The renting company sends an email containing a link to a web service where the customer can read terms and conditions and signs the deal electronically using private online banking credentials (Visma sign, 2020). After the signing, the selling company receives information about the signed contract, and the actual product delivery can be started.

Digital contracts remove the need for physical identification from a driver's license or passport and sending contract papers via post services. Leasing Purchase Agreements have shown that customers are relatively slow to approve and especially return paper contracts, which causes excess work to both sides. The service's main benefit is speed; with electronic agreements, deals can be finalized within minutes compared to other methods.

## **Container hand over to the customer**

Container hand over to the customer is carried out by warehouse staff. One crucial part of the handover is the container's inspection to ensure both parties' legal safety. The handover is done together with the customer, as the intention is to check the container with the customer by using the inspection form (Figure 14).

Sivu 1(2)

**Container hand over and return**

Customer: \_\_\_\_\_ ERP order nr.: \_\_\_\_\_

Product: \_\_\_\_\_ Serial nr.: \_\_\_\_\_

---

**HAND OVER**

Date: \_\_\_\_\_ Finncont contact: \_\_\_\_\_

Customer's representative: \_\_\_\_\_

Contacts: \_\_\_\_\_



	OK	Comments
Visual check .....	<input type="checkbox"/>	<input type="checkbox"/>
Cleaniness.....	<input type="checkbox"/>	<input type="checkbox"/>
Scratches and holes.....	<input type="checkbox"/>	<input type="checkbox"/>
Container form.....	<input type="checkbox"/>	<input type="checkbox"/>

Other comments / clarification:

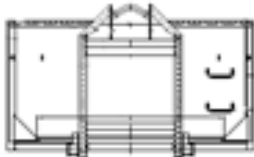
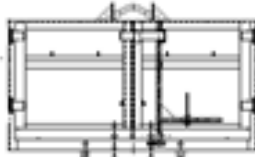
\_\_\_\_\_

\_\_\_\_\_

**Signatures**

Customer \_\_\_\_\_

Finncont Ympäristötuotteet Oy \_\_\_\_\_

Figure 14. Rental inspection form

## **Invoicing**

Invoicing is done with the current ERP system. While the current system is not meant for rental business, it was seen as a suitable and sufficient method with few changes compared to current sales processes. The currently used system has an optional rental business tool, but the costs of opening that service was too high for a pilot size experiment.

## **End of rental**

When the customer informs sales that the container is no longer needed, sales inform other staff about when the container is returned. After the return inspection, the container is marked available, and the final invoice is sent to the customer.

## **Container inspection and cleaning**

After the customer has returned the container, the storage staff inspects the container using the same form as in hand over. The main aspects of inspection are the cleanliness and physical condition of the container. If there is waste in the container, against the general terms and contract, the staff organizes a pick up for the waste. The physical condition inspection concentrates on aspects and parts concerning work safety. If the container is slightly damaged or scratched, the staff decides whether to fix the container or to approve it as it is. The company has skilled mechanics who can fix even severe damage in containers as holes or deformations. If the container had waste in it or there were damages caused by misuse, the costs of these are charged from the customer according to the general terms.

## 6 FINDINGS DURING THE PILOT

The pilot's findings and process improvements are presented in this chapter. Findings during the pilot were saved in a diary fashion during the pilot and later collected and analyzed.

### 6.1 Timeline

After the board of directors' final approval, the Covid19 situation evolved globally and domestically to a point where the economy was slowing down, and there was some uncertainty. In June, national restrictions were lifted, and the project group ordered the products for the pilot. Because of the Estonian container factory's challenges due to the Covid19, the products were received at the end of August. The pilot's difficult start was unfortunate, but the decision was made to continue the pilot as the company saw the opportunity to learn about the business and fine-tune the processes involved.

### 6.2 Marketing and customers

At the start of September, the first marketing email was sent to selected customers before phone calls to increase customer interest. Comparing the general marketing letter efficiency and rental business pilot marketing letter indicated that rental is interesting. General container marketing letters have an opening rate of 20 to 25 percent, and the rental pilot had an opening rate of approximately 23 percent.

During the daily inbound customer calls, the rental pilot was also marketed when they inquired or ordered other company products. Discussions with the customers during September and October supported the formed picture of the pilot's unfortunate timing as most of the clients said there is no need at that point. However, the idea was hailed as an excellent one. The main reason for this unsuccessful start of the project was, according to customers, the Covid19 situation. Relatively few new construction sites started during the pandemic, and most of the events planned for summer were canceled, and routine condominium voluntary works have been postponed until further notice. The resulted situation was where logistics and waste companies had a surplus of containers.

The first marketing letter had a slight error in it pointed out by one customer. One of the rental products did not have dimensions in the marketing letter and caused misunderstandings among customers about pricing. This error was corrected in later marketing materials by adopting better processes concerning group approval.

After the first contacts, the decision was made at the start of October to expand marketing to a secondary customer database. Firstly, marketing was done with a direct email marketing letter, and the company sent approximately 500 marketing emails to a selected wider customer group. This marketing letter was renewed in mid-October with lower pricing to gain more interest.

First rental contracts were agreed upon in the following week of the second marketing letter. Discussions with customers indicated that even most new constructions had been postponed, late October is high season for yard and storage works. The timing seems to be a bit later than usual, most likely due to Covid19 and postponing these voluntary condominium works.

As described in the third part of this thesis, it is advisable to have a control group to what the experimenting group can be compared in a business experiment. (Anderson & Simester 2011). The first group did not result in any rental deals, probably due to higher pricing. After the earlier said decrease in pricing and secondary marketing email, there was an increased interest in renting.

In the future, more concentration must be given to marketing material texts and focus groups. When marketing products to professionals, information can be much more general compared to B2C marketing, because professionals are more likely to understand terminology better. Also, more detailed planning and execution of marketing could be done in possible further pilots.

For the reader to start a new business of their own, the outcome of this could be that, if possible, test out the market with different marketing styles and pricing styles. Test results should tell what style gets the best reception to be used in broader marketing. Piloting means hard marketing, no matter if internal or external. According to Schrage (2014), experimenting new can cause internal resistance in the organization as some feel that new does not fit into the company's image or external from legal aspects, competitors, or even from the customers. Battling these resistance factors with marketing and discussions is crucial. There was little to none of the internal resistance in this pilot as the company was willing and looked for a rental experiment.

### 6.3 Pricing

Pricing selected beforehand based on calculations proved to be too high for the offseason. The decision was made to lower the pricing to gain more data. Lower pricing can give more data, but this data may differ from reality. Calculations and experiments of different scenarios, pricing models, and customer groups are needed to find the best solution.

## 6.4 Feedback

As Andersen & Simester (2011) said, behavioral or perceptual feedback is crucial for an informative experiment. The feedback, internal and external, was saved by the author in a separate project file. The gained feedback was used to give recommendations in later parts concerning processes and conclusions (parts 6.7, 6.7.1, 7, 8, and 8.1).

## 6.5 Products

During the pilot, there were inquiries about a vast range of products during the phone calls. A divided container with two separate sections was the most sought additional solution. This type of container is a relatively basic product but was not seen before the pilot as interesting enough. Another sought product was a standard height container with a roof. The roof container in this pilot was too large and hence limited the interest. Analysis and expectation of customer need formed before the piloting phase proved to be slightly wrong. With better customer interviews before the pilot, this could have been corrected. For future projects, it is advisable to interview customers more to gain an understanding of their needs.

The outcome for the reader outside of this pilot; think before the pilot how the organization could reply to customer needs presented better. Could the need be fulfilled by altering the pilot or expanding the pilot to new products?

## 6.6 Processes

One of this pilot's main goals was to learn from current processes and, if possible, create new ones or streamline existing ones. Many of the processes were reviewed with Lean and Six Sigma principles to streamline the company's overall performance. The rental pilot proved highly informative as it showed some process choke points caused by overlapping work. The found choke points were discovered by observations and discussions with the staff and customers. As George et al. describe in their book (2005), observations cannot be replaced by documentation. For the person responsible for process description and changes, it is advisable to walk the processes and discuss with staff to understand the daily operations (George et al. 2005).

### **Sales and marketing**

The sales process (sales order in ERP, digital contracts, information to storage) did not have significant and unexpected process choke points any other than caused by the existing ERP functions. As said earlier, it was not reasonable for the pilot project to search for

other ERP solutions that already was used because of the high pricing of the additional feature. The current ERP system is not meant for the rental business, and it caused some challenges in rental contract creation. These challenges were seen beforehand and accepted as part of the pilot, so this definition was validated.

For future pilots or businesses, a better and more suitable ERP system for renting is advisable. Tailored or existing suitable ERP solutions decrease, in the spirit of constant improvement, variables on many levels decreasing the time consumed, and the probability of errors.

### **Digital contracts**

The actual need for digital contracts is questionable as the customers are usually well-known customers for the company with earlier history. Clients preferred the method where general terms and conditions were sent in an email as attachments added with rental deal information. Approval from the client was required. Approval via email is binding due to the Pacta Sunt Servanda -principle (agreements must be kept) what is a cornerstone of modern contract laws. This is a principle by which treaties and contracts are binding upon the parties, and obligations must be performed in good faith (Legal Response International 2012).

Email created included information of agreed matters such as:

- Rental period
- Rental price
- Amount of products and specifications
- Delivery terms
- General terms and conditions.

Using a digital contract is a faster method than a paper contract and, on the other hand, safer than email confirmation. Renting needs may occur quickly. While the digital contract is a relatively fast method, using it can cause delays in contract agreements, and the challenge of contract management is still existing. Finding an acceptable balance with customer requirements and internal processes instead of pursuing zero variation with the cost of process effectiveness and, therefore, waste of unnecessary resources is advisable (Pepper & Spedding 2010).

As described in section 3.1., one aspect of Lean Management and process improvement is delivery time. Adopting a legally acceptable method that causes minimum delays on order-to-delivery time is the most efficient one.

### **Container hand over to the customer**

The handover to the customer and the inspection were relatively straightforward when the customer picked up the container. In a situation where the containers are delivered to the customer, there were some challenges concerning the inspection. It was not plausible to outsource this inspection to a delivering third party as this process would not be according to the standards of Finncont. Outsourcing the inspection would also cost money and have a high risk of not being done correctly.

Before the piloting phase, the decision was that the inspection form is done manually, as digital solutions would cost too much. During the pilot phase, the designed inspection form was a chokepoint that consumed too much time and was at risk of process failures as lost documents or forgotten steps. This chokepoint was indicated by the warehouse staff and confirmed when the author “walked the process through”, as George et al. advised in their book *The Lean Six Sigma Toolbook* (2005). The agreement was made with the fleet management system provider to create a digital inspection form that can be used as a mobile app, allowing storage workers to fill out the form in the mobile app and insert pictures of the containers. This change was highly appreciated as it made the process more streamlined and secure.

By changing the form to a digital version, the organization could adopt principles from Lean and Six Sigma. As Arnheiter and Maleyeff (2005) said, decreasing total flow time is part of Lean Management. Decreased flow time could be achieved using digital forms as the information would transfer digitally and be stored and available more efficiently. Arnheiter and Maleyeff also described that Six Sigma concentrates on improving product quality, resulting from improved inspection data and accessibility.

For the reader, this could be summarized that while creating processes, the created method might feel satisfactory and simple, but it might have chokepoints that cause excess work or risks in the real world. The pilot's point is to reveal these chokepoints on a small scale to be improved before possible upscaling. Walking through the processes from others' points of view, customer's or co-worker's, can result in discoveries that generate added value to the whole value chain.

## **Fleet management**

As described in the planning phase, Finncont agreed on a Fleet management system. Fleet management is mainly used to follow rented units' physical location, service costs, and rental efficiency.

The fleet management system had an unexpected and unplanned function taken into use after one test run. The calendar function was used to increase information throughout the company of existing and upcoming rentals. The calendar function also helped sales as it was more clearly visible when particular containers are coming back to storage.

For the reader, the advice is to think outside of the box and pilot inside the pilot. Look continuously at alternative methods and test them quickly. Small changes can result in even game-changing discoveries.

## **Invoicing**

The invoicing process of rental containers was relatively easy as the ERP-system created invoices automatically based on the contracts made by the salesperson. The only challenge emerged concerning cases where the containers were delivered to the customer. The initial idea was to send invoices after the rental period. However, in some situations, the delivery costs were high and therefore needed to be invoiced after the delivery. Instant invoicing of delivery also mitigates the risk of forgetting to invoice the fees, as the delivery costs and rental fees cannot be placed in the same place due to restrictions of current ERP.

## **End of rental**

This process was quick and agile from the customer and sales point of view. The customer informs sales that they would like to return the container. Sales inform storage staff that the container is coming back at the agreed date. At the start of the pilot, information to storage staff was given with an email. This proved to have a risk of being forgotten or missed by the staff.

In this process, the only improvement was to switch to a fully digital fleet management system where information from sales to warehouse transfers in the fleet management system's calendar function. The calendar worked together with a mobile app; when the agreed return date was near, the mobile app gave the storage staff a notification about the incoming rental container. By incorporating a digital service that shows all the agreed end dates on one page, the warehouse could prepare better for returning products. Quicker

processes in container return and inspection enabled quicker turnaround of the containers meaning that the products were available for new rental sooner.

### **Container inspection and cleaning**

The return inspection, together with the customer, was useful in theory but challenging to organize as customers cannot give an exact time of return, or the warehouse staff is reserved for another task. The need for physical inspection, together with the customer, was replaced by reporting to the customer afterward. The initial manual form and later, digital form were used. The process where the inspections are made together with the customer was altered. The container is inspected later by the staff at a suitable time, and the form is sent to customer contact later on. This method ensures the legal safety of both parties and improves the transparency of the operation towards customers.

This change to a fully electronic form was made to adopt Lean and Six Sigma principles of quality improvement as the company wants to be a reliable and safe supplier to its customers.

#### **6.6.1 Process improvement possibilities**

As described in the third part of this thesis, "Pilot and process improvement theory", business experiments can improve processes or indicate improvement points in the organization. There were three clear distinctive parts in the rental business pilot: supplier performance, internal processes, and external processes.

#### **Supplier performance**

The experience gained before the pilot indicates that the supplier reliability and performance could be increased to gain more reliable delivery dates of new products by deepening the cooperation. If the pilot is taken to the next level and more products are in rotation, more reliable and accurate factory delivery estimations are needed. In the current situation, where delivery dates are rough estimates, the rental fleet management could be challenging and ultimately impact customer experience.

This part of the operation could be studied and possibly improved with Lean management principles. Both sides, Finncont and the supplier, could benefit from a more detailed delivery process that minimizes the information given by person to person. More digital solutions and order tracking could be studied more.

### **Internal processes**

Internal processes in this part are the processes that happen “behind the curtains” but impact profitability, such as container inspection and cleaning or creating the rental contract. These processes had room for improvement as the early handover process to the next process was done manually, meaning that the next process holder needed to be informed about it. As Arnheiter and Maleyeff (2005) said, the goal of Lean Management is to reduce production downtime or to decrease the total time consumed. By adopting Lean principles and studying the possibility of a suitable ERP system with automated information, the whole organization could work more efficiently. Rashid and Ahmad (2013) summarise that Lean management is a method that ensures that all activities are performed without interruption, thus increasing performance. Increased performance and reduced excess work would mean better profitability and better customer experience.

### **External processes**

The visible processes to the customer influence customer experience, such as container inspection and contract signing. Changes to these external processes were made, mostly through the digital fleet management system that allowed shorter turnaround times and more reliable inspections. The changes based on Lean and Six Sigma principles; the aim was to minimize variables and wasted time. The acquired fleet management system allowed more detailed and quicker inspections as all staff knew where the container is or arriving. The need for calls or WhatsApp messages was reduced significantly.

## **6.7 Possible cooperation models**

The rental business market's hygiene is crucial as Finncont supplies the containers to logistics companies, and renting the containers directly to end customers could be seen as a negative aspect from the said logistics companies limiting their business opportunities. On the other hand, creating inter-organizational models could increase construction sites' recycling and create value for the circular economy chain.

Finncont supplies recycling equipment and is actually the first contact point for the end customers to waste management and recycling. Its products are an essential part of the circular economy chain, but the logistics and processing companies offer the actual service. Concentrating on the early part of the chain, end customer and logistics, could be feasible and relatively easy to manage.

## 7 CONCLUSIONS

As we need to rethink how we consume and find ways to minimize the environmental impact of our actions, new business models are needed in every sector. A rental business is a business model that aims to fill changing customer needs and create value for the customer in a way where the customer does not have to own everything by themselves. The rental business is a core service of the emerging mega-trend of product sharing, and most likely, the need for such services is increasing. Finding a way to increase recycling with good resource and raw material effectiveness is a must, especially in the construction sector that already uses containers in high numbers. The most probable solution for this is to increase mixed waste taxation making the recycling options more attractive. In a situation where the taxation is increased and new solutions for recycled materials emerge, the point of origin recycling would most likely be more attractive to even smaller construction companies. Currently, the narrow pricing gap between mixed waste and recycled materials does not support recycling, especially for smaller companies working in smaller construction sites generating a relatively little amount of waste during construction time. The widening pricing gap added with tightening regulation would most likely increase the need for collection equipment as containers as the construction companies would be more willing to collect more materials separately. Offering a product-service system in the environmental sector shows an example for the rest of the world. The rental business is, in short, a way to manage resources better and increase product effectiveness.

Starting a new business can be difficult as the idea tends to scatter or grow too big. As said, too many products, too big targets, or too big project groups can cause stagnation and even fade the idea away as new ideas keep coming. Splitting the idea into smaller testable parts allows gaining information more easily. No matter how long the experiment is pushed around in meetings, even a few actual repetitions can give more information than hours of thinking based on gut feelings. Despite the small scale and being a pilot, legal aspects as a contract and liabilities should not be overlooked. The legal aspects such as the contract and terms of the pilot should be taken seriously; no matter the scale of what the company does, it is always the company that is responsible. The best way to mitigate risks is to create rock-solid contracts and check insurances. A small experiment with overlooked legal aspects can prove to be expensive.

Creating and planning processes is crucial but not essential to launching the experiment. One of the best findings in a pilot is exploring a new or alternative and, most crucially, a better way to do different processes. The processes involved are mainly internal and have a high potential to form as time-consuming, causing wasted time and resources. In

business piloting it is, or at least should be, acceptable to fail or find better ways to do things. When defining a new business or pilot, there has to be room for uncertainty. No matter how vigorously planned, the project is going to have surprises in it. Instead of trying to avoid challenges, embrace them as an opportunity to evolve. When piloting, an effort to seek new ideas and points of view by “walking the processes” can result in surprising discoveries. As George et al. write in their book “The Lean Six Sigma Pocket Toolbook” (p. 45, 2005), “Most of the value in a team’s work lies in the ideas and insight generated during the project”. The gained insight during the pilot into the business and processes involved enables further and more precise experimenting. Rental processes showed choke-points that slowed down the rental process and thus lost money as wasted time. Slow processes cause unnecessary costs and degrade the customer experience.

One of the experiment's main goals was to learn from the subject, as described earlier in this thesis. In Finncont’s experiment, the timing of the launch was pushed forward due to Covid19. All the delays caused by the pandemic resulted in the pilot to be started after the high demand season. The later than expected start of the experiment and executed marketing calls gave information about decreased container usage from end customers. Many projects were postponed or even canceled, forcing relatively quick changes as only after weeks of marketing, the decision was made to lower pricing significantly to gain data. This decision proved to be the right one as, after the second round of marketing calls, rental agreements were made. One discovery from the experiment was that pricing should be higher in higher demand season and remarkably lower during the off-season. Rental business profitably is strongly dependent on the rental rate.

From Finncont’s perspective, the pilot was informative and gained significant insight into the rental business. Costs of the operation were predicted on a sufficient level. As the possible full-scale operation is larger, the fixed costs are not so high per unit as on a small scale. However, on the other hand, bigger facilities could be needed, and therefore fixed costs would increase significantly. The market's theoretical size is still a theoretical assumption as the pilot was relatively short and launched during the Covid19. The main discoveries were that the idea is interesting for customers, and some company processes should be streamlined to improve operational efficiency in daily operations, even outside the rental business. Adopting LEAN, Six Sigma, or LEAN Six Sigma to this part of Finncont should be studied more to understand possible cost-savings and better performance.

A more suitable ERP system that reliability transfers customer data and informs the next process point is advisable. The problem concerning the ERP system was predicted and

confirmed. The contract signing process was remarkably slower than expected, even with the digital signing. The acceptable balance with legal aspects and business flow should be tested and evaluated more. The main chokepoints were container handover and delivery inspection and data flow from sales to warehouse staff. The problems in both were solved with the implementation of digital fleet management software. Additionally, discussions with suppliers need to be done to ensure more precise factory delivery dates for additional containers before possible larger-sized operations, as delays can cause a bad customer experience.

As Anderson & Simester (2011) said, the goal is not to conduct perfect experiments but to make better decisions. The company gained insight into the rental business and its processes, but because of the abnormal year caused by Covid19 and the delayed start of the pilot, there is yet not enough knowledge of the real market size and customer interest to decide about upscaling. More studies about the market size are needed to understand the potential of this business.

Additionally, Lean and Six Sigma principles could be tested using more digital solutions to decrease the amount of time used and, therefore, excess work.

In conclusion, the pilot answered many of the questions presented, especially about the processes. The company learned that many of the pilot's processes could be implemented in the regular business. Some of the regular business processes should be re-evaluated and, if possible, redesigned with digital solutions. The pilot brought extra value to the company even beyond the pilot, as the company is now more ready to experiment and re-evaluate its effectiveness with process improvement tools.

## 7.1 Checklist

The author and the company learned a significant amount about the rental business and starting a new business. The following checklist clarifies and summarizes these findings and presents them in an understandable and easily citable fashion.

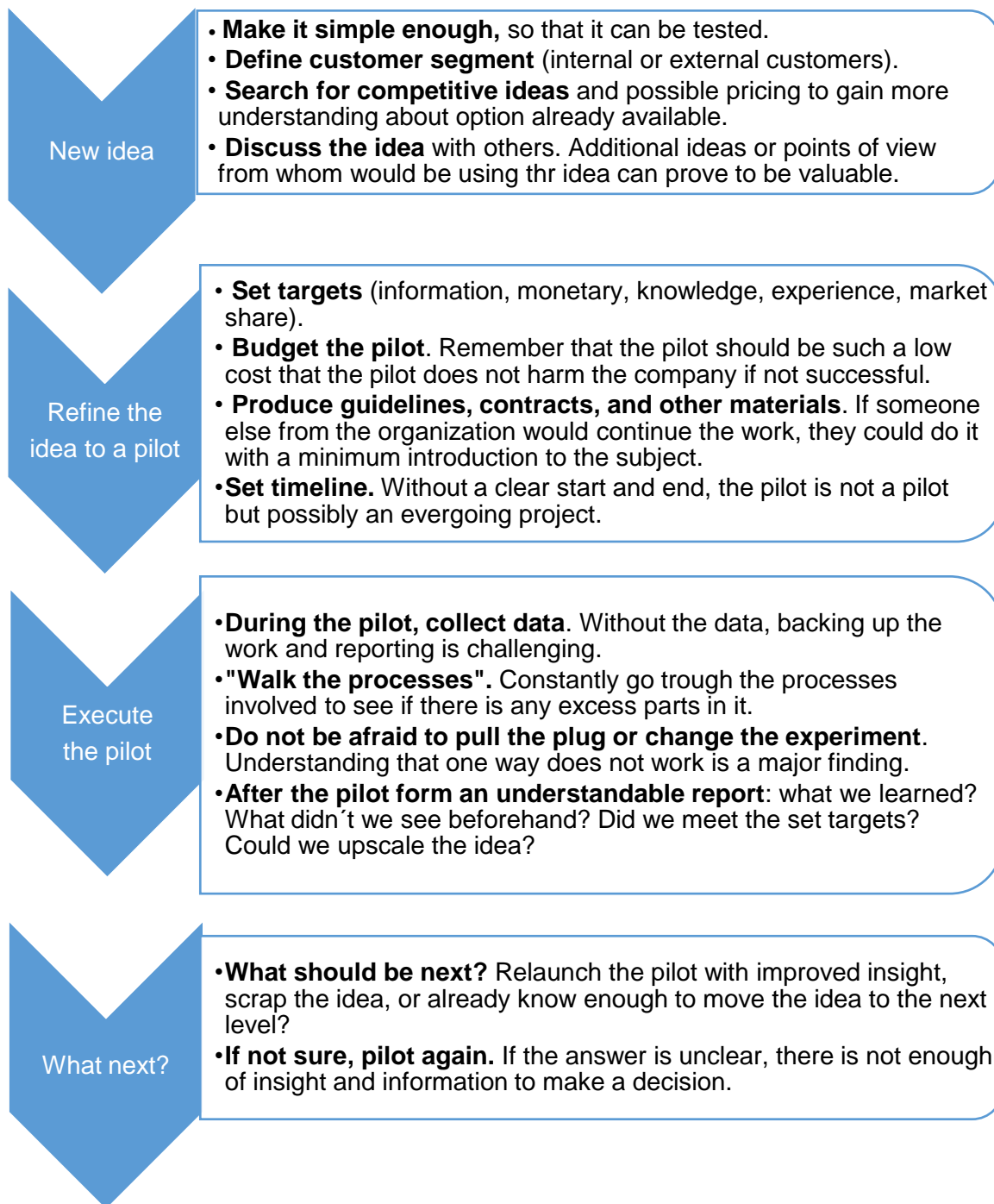


Figure 16. Checklist for creating a business pilot

### Things to keep in mind

- Even the pilot is meant to be fast and agile, do not skip over contracts and liabilities. A small pilot can become an expensive one. If liabilities are not appropriately addressed with contracts and something happens, the company might be losing a lot of money or even worse.
- When piloting, do not be afraid to take corrective measures during the pilot or re-launch the pilot. If something does not work straight away, it does not mean that the idea is terrible. Approach the dilemma from a different angle and try again.
- Document and collect data! Without data and documentation, the final report is hard to produce.
- Write a conclusion of the pilot in short, so other people can quickly learn assumptions beforehand, what was learned, and the outcome.
- Keep the most crucial question in mind during the pilot: "What did we learn from this?". Did it save the company money or time? Did it bring new customers? Did it make work safer, and so on?

### 7.2 Research limitations / implications

Rental business and piloting should be studied more, and as Anderson & Simester explained (2011) with more customer groups. More experiments with pricing could be done before going full scale—for example, market rental products to one group with price A and other groups with pricing B. By the end of the experiment, exact data of feasibility and sales should be available for other business decisions as causality should be clear. Pricing is just one of the testable parts of the business and is presented as an example.

More studies could also be done in general about starting a new business during a global pandemic, researching how initial business idea should be altered or what kind of measures companies can take in non-foreseeable situations.

This research is limited by the challenging timing of the pilot and the size of it. The results need more studies and additional experimenting to ensure findings.

### 7.3 Practical implications

The findings support Finncont Ltd in the rental business's decision-making and other companies looking for new business ventures. This thesis's findings should help companies

avoid the most common mistakes beforehand and thus generate more successful business experiments and pilots.

#### 7.4 Originality and value

Business experimenting and the environmental sector are relatively well research subjects as separate. Most of the researches concentrate on the theoretical aspect of experimenting or the environmental sector's exact aspect. This paper approached these subjects from a relatively new perspective, rental and product sharing in the environmental sector, and presented a clear list of challenges and notable matters of starting a new business. The reader's real value is that they can avoid making the same mistakes or find better ways to execute their experiment with this paper. This paper also gives Finncont Ltd value, as the company can use this paper for later projects.

## LIST OF REFERENCES

Alsever, J., 2013. The “megatrend” that swallowed Silicon Valley. CNN Money [Accessed 25<sup>th</sup> of October 2020]. Available at: <http://tech.fortune.cnn.com/2012/10/03/themega-trend-that-swallowed-silicon-valley/>

Ampliroll Hooklift Systems. 6 advantages of using a hook lift truck as your work truck [Accessed 8<sup>th</sup> of June 2020]. Available at: <https://amplirollusa.com/blog/6-advantages-of-using-a-hooklift-truck-as-your-work-truck/>

Anderson E. T. and Simester D. Issue of March 2011 [Accessed 30<sup>th</sup> of September 2020]. A step-by-step guide to smart business. Harvard Business Review. Available at: <https://alexduchak.com/s/A-Step-by-Step-Guide-to-Smart-Business-Experiments.pdf>

Arnheiter E. and Maleyeff J. 2005. The integration of lean management and Six Sigma. The TQM Magazine, Vol. 17 No. 1, pp. 5-18. Emerald Group Publishing Limited. Available at: <http://files.ferraz8.webnode.com/200000074-267a127737/Artigo%2010.pdf>

Bing, X., Bloemhof, J.M., Ramos, T.R.P., Barbosa-Povoa, A.P., Wong, C.Y., and van der Vorst, J.G.A.J. 2015. Research Challenges in Municipal Solid Waste Logistics Management [Accessed 25<sup>th</sup> of October 2020]. Waste Management: International Journal of Integrated Waste Management Science and Technology. Available at: <http://eprints.whiterose.ac.uk/92222/3/Bing%20et%20al.%202015%20Research%20Challenges.pdf>

Busch Systems Resource Center. What is recycling and how does it work [Accessed 8<sup>th</sup> of June 2020]. Available at: <https://www.buschsystems.com/resource-center/knowledgeBase/glossary/what-is-recycling-and-how-does-it-work>

Bythestart Limited. The power of the “Pilot” – 3 reasons why you should test your new business before launch. [Accessed 20<sup>th</sup> of August 2020]. Available at: <https://www.bytestart.co.uk/pilot-test-new-business.html>

Christopher M., 2016. Logistics and Supply Chain Management. Pearson Education Limited. Available at: [http://digilib.stiem.ac.id:8080/jspui/bitstream/123456789/85/1/0273681761\\_Logistics%20and%20Supply%20Chain%20Management.pdf](http://digilib.stiem.ac.id:8080/jspui/bitstream/123456789/85/1/0273681761_Logistics%20and%20Supply%20Chain%20Management.pdf)

Edwards B. 1999. Sustainable architecture: European directives and building design. 2nd ed. Oxford: Architectural Press.

Eriksson, O., Carlsson Reich, M., Frostell, B., Björklund, A., Assefa, G., Sundqvist, J. O., Granath, J., Baky, A. and Thyselius, L., 2005. Municipal solid waste management from a systems perspective, *Journal of Cleaner Production*, 13(3), 241-252.

European Commission. Directive 2008/98/EC on waste (Waste Framework Directive). Accessed 27<sup>th</sup> of September 2020]. Available at:  
<https://ec.europa.eu/environment/waste/framework/>

European Commission. Proposal for a DIRECTIVE OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL amending Directive 2008/98/EC on waste COM/2015/0595 final - 2015/0275 (COD) [Accessed 23<sup>rd</sup> of June 2020}. Available at: [https://eur-lex.europa.eu/resource.html?uri=cellar:c2b5929d-999e-11e5-b3b7-01aa75ed71a1.0018.02/DOC\\_1&format=PDF](https://eur-lex.europa.eu/resource.html?uri=cellar:c2b5929d-999e-11e5-b3b7-01aa75ed71a1.0018.02/DOC_1&format=PDF)

European Environment Agency. 18<sup>th</sup> of January 2016. Circular Economy in Europe – Developing the knowledge base. [Accessed 27.8.2020]. Available at:  
[https://www.eea.europa.eu/publications/circular-economy-in-europe/at\\_download/file](https://www.eea.europa.eu/publications/circular-economy-in-europe/at_download/file)

European Environment Agency. 16<sup>th</sup> of January 2020. Practices in the construction sector key to increasing material reuse, high quality recycling. [Accessed 25<sup>th</sup> of August 2020]. Available at: <https://www.eea.europa.eu/highlights/improving-circular-economy-practices-in>

Finncont Group. Company [Accessed 23<sup>rd</sup> of June 2020]. Available at:  
<https://www.finncont.com/en/company/our-vision>

Finncont Group. Our vision [Accessed 23<sup>rd</sup> of June 2020]. Available at:  
<https://www.finncont.com/en/company/our-vision>

George M., Rowlands D., Price M., and Maxey J. 2005. The Lean Six Sigma Pocket Toolbook – A quick reference guide to nearly 100 tools for improving process quality, speed, and complexity. The McGraw-Hill Companies. (pp. 46, 54 )Available at:  
[https://www.academia.edu/download/61867319/Lean\\_six\\_sigma\\_pocket\\_toolboxepub\\_version20200122-5432-py21rf.pdf](https://www.academia.edu/download/61867319/Lean_six_sigma_pocket_toolboxepub_version20200122-5432-py21rf.pdf)

Ghiani, G., Laganà, D., Manni, E., Musmanno, R., and Vigo, D., 2014. Operations research in solid waste management: A survey of strategic and tactical issues, *Computers & Operations Research*, 44, 22-32.

Government Communications Department. 2016. Report: Strong guidance needed to increase recycling [Accessed 5<sup>th</sup> of November 2020]. Available at:

<https://valtioneuvosto.fi/en/-/10616/kierratyksen-lisaaminen-edellyttaa-vahvaa-ohjausta?inheritRedirect=false>

Hamari J., Sjöklint M., Ukkonen A. 2015. The Sharing Economy: Why People Participate in Collaborative Consumption. *Journal of the Association for Information Science and Technology* – September 2016. Available at: [https://people.uta.fi/~kljuham/2016-hamari\\_at\\_al-the\\_sharing\\_economy.pdf](https://people.uta.fi/~kljuham/2016-hamari_at_al-the_sharing_economy.pdf)

Interview of Moondo Kuljetus Oy / Mika Haarala 12<sup>th</sup> of June 2020

Investor Words. Rental definition [Accessed 30<sup>th</sup> of July 2020]. Available at: <http://www.investorwords.com/7698/rental.html>

KTAR News. 2015. Renting, not owning, a growing trend among millennials [Accessed 29<sup>th</sup> of June 2020]. Available at: <https://ktar.com/story/469051/renting-not-owning-a-growing-trend-among-millennials/>

Legal Response International. 2012. Pacta sunt servanda and exception of non-performance [Accessed 21<sup>st</sup> of October 2020]. Available at: <https://legalresponse.org/legaladvice/pacta-sunt-servanda-and-exception-of-non-performance/>

Lessmann S., Listiani M., and Voss S. 2010. Decision support in car leasing: a forecasting model for residual value estimation. ICIS 2010 Proceedings, paper 17. International Conference on Information Systems (ICIS). Available at: [http://www.academia.edu/download/50962825/Decision\\_Support\\_in\\_Car\\_Leasing\\_a\\_Foreca20161219-6948-ifba1i.pdf](http://www.academia.edu/download/50962825/Decision_Support_in_Car_Leasing_a_Foreca20161219-6948-ifba1i.pdf)

Market Business News. What is Logistics? Definition and Meaning [Accessed 23<sup>rd</sup> of June 2020]. Available at: <https://marketbusinessnews.com/financial-glossary/logistics-definition-meaning/>

Nystén-Haarala S., Lee N, and Lehto J. 2010. Flexibility in contract terms and contracting processes. *International Journal of Managing Project in Business* [Accessed 11<sup>th</sup> of October 2020]. Available at: [https://www.researchgate.net/profile/Nari\\_Lee2/publication/228623533\\_Flexibility\\_in\\_contract\\_terms\\_and\\_contracting\\_processes/links/00463533c10218f818000000.pdf](https://www.researchgate.net/profile/Nari_Lee2/publication/228623533_Flexibility_in_contract_terms_and_contracting_processes/links/00463533c10218f818000000.pdf)

Näslund D. 2008. Lean, six sigma and lean sigma: fads or real process improvement methods? *Business Process Management Journal*, Vol. 14 No. 3, 2008, pp. 269-287. Available at: <http://www.academia.edu/download/27570331/34060--jitandlean--assignment.pdf>

- Official Statistics of Finland (OSF). Waste statistics [e-publication].  
ISSN=2323-5314. 2018. Helsinki: Statistics Finland [referred: 8.6.2020].  
Available at: [http://www.stat.fi/til/jate/2018/jate\\_2018\\_2020-01-15\\_tie\\_001\\_en.html](http://www.stat.fi/til/jate/2018/jate_2018_2020-01-15_tie_001_en.html)
- Partner Engineering and Science Inc. 8th of May 2019. What is an environmental consultant [Accessed 30th of July 2020]. Available at:  
<https://www.partneresi.com/resources/blog/what-is-an-environmental-consultant>
- Pepper M.P.J and Spedding T.A. 2010. The evolution of lean six sigma. *International Journal of Quality & Reliability Management*, Vol. 27 No. 2, 2010, pp. 138-155. Emerald Group Publishing Limited. Available at:  
<http://www.academia.edu/download/34439873/1837484.pdf>
- Rashid O. and Ahmad N. 2013. Business Process Improvement Methodologies: An Overview. *Journal of Information Systems Research and Innovation*. Available at:  
[https://seminar.utmspace.edu.my/Jisri/download/Vol5/Pub6\\_Business\\_Process\\_Improvement\\_Methodologies.pdf](https://seminar.utmspace.edu.my/Jisri/download/Vol5/Pub6_Business_Process_Improvement_Methodologies.pdf)
- Reviso cloud accounting Ltd. What is leasing [Accessed 30th of July 2020]. Available at:  
<https://www.reviso.com/accountingsoftware/accounting-words/leasing/>
- Ruggieri A., Braccini A., Poponi S. and Moscon E. 2016. The meta-Model of Inter-Organisational Cooperation for the Transition to a Circular Economy. *MDPI journals*. Available at:  
<https://www.mdpi.com/2071-1050/8/11/1153/pdf>
- Schrage, M. 2014. *The Innovator's Hypothesis* (The MIT Press) (pp. 9-10, 24, 25, 33, 35, 39, 45, 48). The MIT Press. Kindle Edition.
- Serpell A, Alarcon LF. 1998. Construction process improvement methodology for construction projects. *International Journal of Project Management* 16(4):215–21. Available at:  
[https://www.researchgate.net/publication/222207494\\_Construction\\_process\\_improvement\\_methodology\\_for\\_construction\\_projects](https://www.researchgate.net/publication/222207494_Construction_process_improvement_methodology_for_construction_projects)
- Smith C. and Wakeman L. 1985. Papers and Proceedings of the Forty-Third Annual Meeting American Finance Association December. *The Journal of Finance*, Vol. 40, No. 3. Available at:  
[https://eclass.aueb.gr/modules/document/file.php/LOXR116/04%20Leasing/Articles/Smith\\_and\\_Wakeman\\_%2885%29\\_Jof.pdf](https://eclass.aueb.gr/modules/document/file.php/LOXR116/04%20Leasing/Articles/Smith_and_Wakeman_%2885%29_Jof.pdf)

Statistics Netherlands. 2018. Importance of environmental sector increasing [Accessed 27<sup>th</sup> of October 2020]. Available at: <https://www.cbs.nl/en-gb/news/2018/46/importance-of-environmental-sector-increasing>

Suomen Asiakastieto Oy. 2020. Financial statements and key ratios [Accessed 27<sup>th</sup> of October 2020]. Available at: <https://www.asiakastieto.fi/sopimusasiakas/kotimaa?lang=EN>

Tam V.W.Y., Tam C.M. 2006. A review on the viable technology for construction waste recycling. Resources, Conservation and Recycling 47. Available at: <http://www.dl.edi-info.ir/A%20Review%20On%20The%20Viable%20Technology%20For%20Construction%20Waste%20Recycling.pdf>

The United States Environmental Protection Agency. Recycling Basics [Accessed 23<sup>rd</sup> of June 2020]. Available at: <https://www.epa.gov/recycle/recycling-basics>

Visma Solutions Oy. 2020. Visma sign digital signature [Accessed 15<sup>th</sup> of October 2020]. Available at: <https://vismasign.com/digital-signature/>

Willett G. and Penland R. 1975. The economics of owning, leasing, renting or custom-hiring selected farm machines in Arizona. College of Agriculture, University of Arizona. Available at: <https://repository.arizona.edu/bitstream/handle/10150/602129/TB224.pdf?sequence=1>

World Population Review. 2020. Most Technologically Advanced Countries 2020 [Accessed 29<sup>th</sup> of June 2020]. Available at: <https://worldpopulationreview.com/country-rankings/most-technologically-advanced-countries>

## APPENDICES

- 1) Finncont Group
- 2) Interview with Jonny Österholm, Teal Leader. Volvo Truck Rental
- 3) Interview with Tommi Tupala, Sales Manager, Lassila & Tikanoja Plc
- 4) Diary

## **Appendix 1 - Finncont Group**

Finncont Group is a Finnish privately owned company that designs and manufactures and imports long-lasting and environmentally responsible solutions for waste and property management and industry sectors. Finncont Group is also one of Europe's largest contract manufacturers and offers top product development expertise in Finncont Design Studio®. Finncont was established in 1974. Finncont is a global company and employs over 160 people in Finland and Sweden. (Finncont Group 2020)

### **Finncont Group Vision and values**

Finncont's promise, Continuity, reflects the essence of a circular economy where products, components, raw materials, and the value within is maximized by reusing them again and again for as long as possible. Finncont aims to fulfill this promise in all actions. Finncont wants waste to continue its life as new raw materials, and that future generations will not have to make too big concessions because of our mistakes, and that its clients can continue their businesses environmentally responsibly. Therefore, Finncont develops its expertise constantly and, together with clients, finds solutions for today's and tomorrow's problems. (Finncont Group, 2020)

### **Finncont Group Business lines**

Finncont Group designs, manufacture, and imports a variety of products for different business sectors.

### **Environmental Products**

Reliable and safe environmental and waste management products covering the whole range from household waste bins, containers, waste packaging units for trucks, and containment bunds (Finncont 2020).

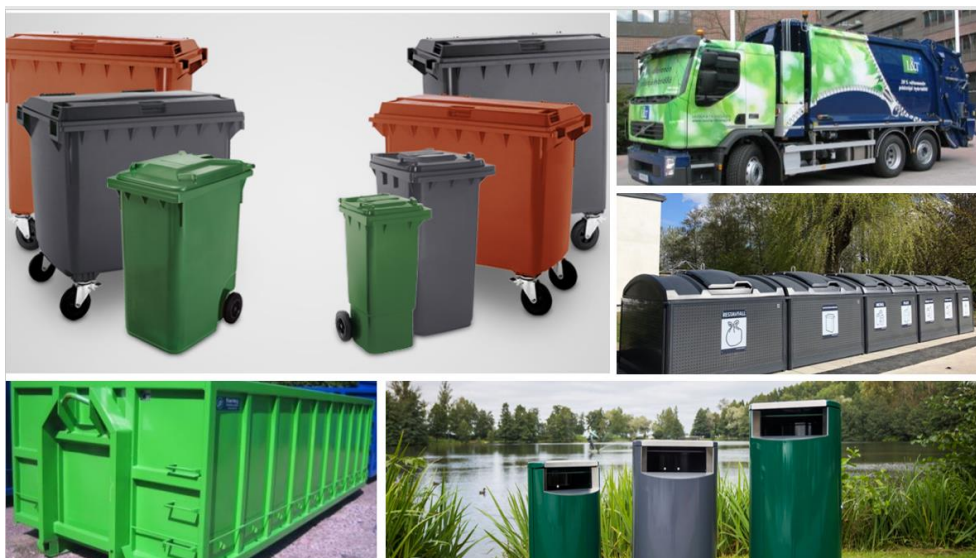


Figure 16. Finncont environmental solutions

### **Chemical & Food Industry**

For the chemical and food industry, the company design process, transport, and storage IBC containers. The focus is on safety and the high demands of the industries and raw materials they use in these products. (Finncont 2020).



Figure 17. Finncont industry

### **Contract Manufacturing**

The company offers optimized solutions from plastic and metal offer infinite possibilities and cost-effective production, even in small batches.



Figure 18. Finncont contract manufacturing

### **Finncont Design Studio**

Finncont Design Studio offers long-standing Finnish top expertise in product development. The company composes, designs, and executes unique, cost-effective, and structurally optimized product solutions and the tools to manufacture them. (Finncont 2020)

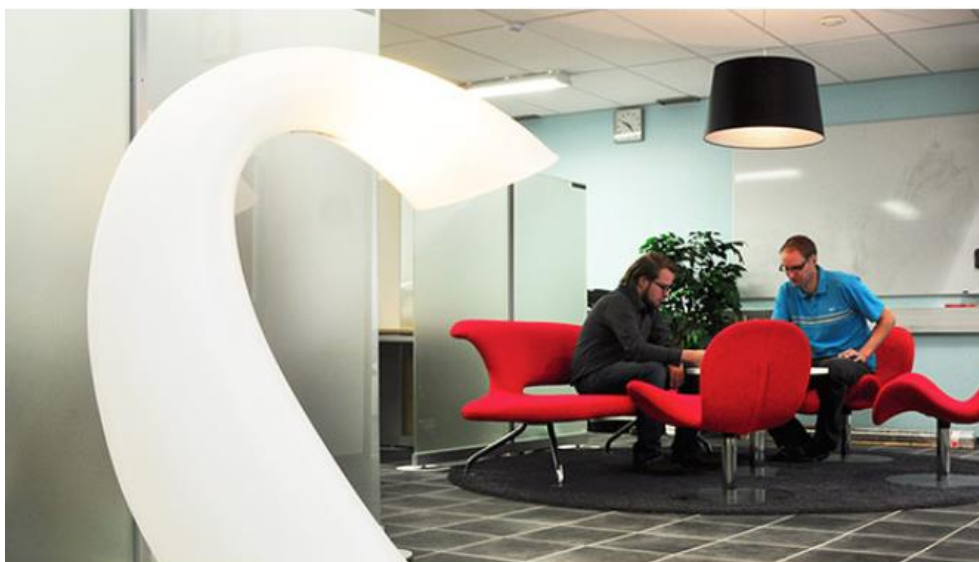


Figure 19. Finncont Design Studio

## **Appendix 2 - Interview with Volvo Truck Rental**

23.9.2020 phone/email

Jonny Österholm, Team Leader

### **Question 1:**

#### **Author:**

What was the main reason for Volvo to start a rental business? (deepen customer relationships, growth, etc.)

#### **Österholm:**

Volvo started a rental business in 2012 when I was not yet working with Volvo. My guess is that contracts in logistics were changing. Earlier contract duration was several years, and trucks were acquired for that specific contract. Currently, contracts are relatively short, and there is no guarantee if the acquired truck has suitable use after the mentioned short-time contract. (For example, during COVID19, even bus companies are renting trucks for short time use as they do not have usage for a truck that is only one year old. And if they would sell it, most likely it would be unprofitable.)

### **Question 2:**

#### **Author:**

How have the customers received this service?

#### **Österholm:**

Clients likely appreciate the service's easiness and the fact that everything is included, except the driver and fuel. Also, freshly started companies prefer renting as it is easy to calculate how much money they should get per kilometer as they know for sure how much that same kilometer costs for them.

### **Question 3:**

#### **Author:**

Has the rental business increased truck sales via new customer contacts?

**Österholm:**

Yes, we have many customers who did not own new Volvo trucks, but we have managed to offer them new trucks with the rental.

**Question 4:**

**Author:**

Is the average rental period how long?

**Österholm:**

60% of our contracts are three months or more.

**Question 5:**

**Author:**

What have been the biggest challenges in the rental business? (Damages, the general condition of rental equipment, other unpredicted issues)

**Österholm:**

The hardest part is teaching our customers to drive with modern generation trucks because there has been a significant development. For example, a customer could ask why the rental truck's consumption is so high? Our first question is that in what position is the VEB (Volvo Engine Brake) lever. Is it on automatic mode? Customers can say that "no, it is not, because it is horrible to drive with auto-setting". Our answer to that comment is that the truck does not roll when you release the gas pedal with the manual mode, but instead engine brake is applied. And when you need to accelerate again, you burn more fuel.

### **Appendix 3 - Interview with Lassila & Tikanoja Plc**

5.11.2020 phone/email

Tommi Tupala, sales manager, construction services

#### **Question 1**

**Author:**

What have been the most significant challenges in improving construction sites' recycling?

**Tupala:**

Commitment from the customer's management and to get the commitment through the whole organization. The purchasing department does not know how to compare recycling and "older methods"; instead, they still compare separate services and waste fees.

#### **Question 2:**

**Author:**

What are the most significant influencers for the customers in construction site waste management and recycling?

**Tupala:**

Costs are still the primary influencer, but luckily the national targets in construction waste recycling already guide how companies operate and their targets, especially the bigger companies.

#### **Question 3**

**Author:**

What is, in your opinion, the best way to increase the construction recycling rate?

**Tupala:**

Increase point of origin recycling and increase the staff's awareness and understanding with information and training. Additionally, the pricing of mixed construction waste should be increased to such a high level that recycling would also be more attractive to smaller construction companies.

**Question 4****Author:**

What kind of impact does cooperation have in reaching the recycling targets? Between L&T and its clients and additionally between L&T and other organizations.

**Tupala:**

Cooperation is vital, and it demands resources and know-how from both sides and involvement from all customer's organization levels. Successful cooperation demands knowledge leadership, training, and incentives for the construction sites for good results.

#### **Appendix 4 - Diary**

Wednesday 1<sup>st</sup> of July – Decision from the company board of directors. Pilot green light, order containers.

Thursday 2<sup>nd</sup> of July – Order from supplier made for 8 pcs of containers. The summer holiday season prolongs delivery time to the end of august -> Pilot to be started at the start of September.

Monday 3<sup>rd</sup> of august –Preliminary discussion about next steps:

- Photographs of containers.
- Final marketing material.
- Rental form finalization

Wednesday 12<sup>th</sup> of august – Introduction of the rental process and invoicing in ERP agreed via Teams agreed with the supplier to the 3<sup>rd</sup> of September.

Thursday 13<sup>th</sup> of august – Meeting with the container team concerning new customers, container checks, filing, etc.

Wednesday 19<sup>th</sup> of August – Meeting with a company that provides GPS tracking for containers.

Friday 21<sup>st</sup> of August – Idea to start a WhatsApp group for rental business.

Friday 21<sup>st</sup> of August – Interview of Tommy Österholm. Team Leader of Volvo Truck Rental.

Wednesday 26<sup>th</sup> of august – Meeting with the service provider about GPS tracking and fleet management for containers.

Thursday 27<sup>th</sup> of august – Demo accounts for fleet management received. Testing with service to map out how the service would back our business.

Tuesday 1<sup>st</sup> of September – Pilot processes reviewed in an internal meeting.

Wednesday 2<sup>nd</sup> of September – Attending in Finnish Environmental Industries (YTP) webinar “Responsibility supporting circular economy”. Many of the presentations discuss construction wastes and future possibilities.

Monday 21<sup>st</sup> of September – Final meeting with the selected fleet management service provider for the pilot.

Tuesday 22nd of September – Internal meeting with IT services about possibilities of the selected fleet management.

Saturday 26th of September – Meeting with Finnish Transport and Logistics SKAL. Discussion about the customer needs, pricing.

Tuesday 29th of September – Marketing email letter sent to approximately 500 customers to reach a broader customer base.

Tuesday 29th of September – Meeting with selected SaaS provider.

The first week of October – Sales phone calls

14th of October – Secondary marketing email send with corrected information

16th of October – slight changes to contract processes

22nd of October – Changes to the inspection process, team meeting.

23rd of October – More questions were received about roof containers.

5<sup>th</sup> of November – Interview with Tommi Tupala. The sales manager of Lassila & Tikanoja Plc.