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An evaluation of retail companies' logistics performance

A case study with ICA Non Food

Master's thesis in the Master´s Programme Supply Chain Management

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ABSTRACT

Consumers are getting more demanding and more price-conscious nowadays and this force the retailers to have a more responsive supply chain at the same time as keeping the costs as low as possible. Therefore, the logistics performance is getting increasingly important for a retail company that wants to be successful by responding to the consumers' demands. Measuring the logistics performance internally within the company is commonly used but it could also be beneficial to do an external comparison such as a benchmarking. By performing a benchmarking it is possible to borrow ideas from other companies and adapt them to gain competitive advantage.

One retail company that works with the improvement of their logistics performance is ICA Non Food. ICA Non Food has continuously improved their logistics performance during the last years and strives to increase their performance and competitiveness even further. To succeed with this, ICA Non Food is thrived to discover potential areas of improvement by increasing their understanding of how good their logistics performance is compared to other retail companies. Therefore, the aim of the study is to increase ICA Non Food's understanding of their current logistics performance and by this making them aware of potential areas of improvement. This was done in two steps. The first step was to understand how ICA Non Food currently is measuring and following up their logistics performance compared to the literature in order to investigate if the company is covering the critical and most relevant KPIs and aspects when managing their logistics performance. The other step was to perform a benchmarking involving six leading retail companies, including ICA Non Food, to understand how the logistics performance currently look like at ICA Non Food compared to the other benchmarked companies.

Findings indicated that ICA Non Food does all in all manage their logistics performance in a good way and as the literature recommends. However, the company has some potential areas of improvement such as increasing the employees' involvement in their logistics performance by making the logistics KPIs more accessible for them. The most important findings from the benchmarking process was that ICA Non Food is managing their inventories good since they has a competitive inventory turnover value compared to the other benchmarked companies. On the other hand, the company's total logistics costs as a percentage of sales is higher than the majority of the benchmarked companies and this KPI is therefore not as competitive as the inventory turnover. From the findings it can be concluded that ICA Non Food's higher value on total logistics costs as percentage of sales compared to the majority of the other benchmarked companies, is not due to their inventory management since they performed well with their KPI inventory turnover. Instead the value could be high due to other factors such as high outbound transportation costs that they should try to reduce.

Keywords: *ICA Non Food, logistics performance, logistics KPIs, benchmarking, retail industry, total logistics costs and inventory turnover.*

Preface

This thesis was conducted at Chalmers University of Technology in Gothenburg, Sweden during the spring 2015 as a final part of the Master Programme of Supply Chain Management. The thesis was initiated in cooperation with ICA Non Food.

Firstly, we would like to send big thanks to our supervisors Andreas Bolger, Logistic Controller and Helena Lundén, Supply Chain Manager at ICA Non Food, for all support and inspiration during the project. We would also thank all of the benchmarked companies for participation in interviews and providing answers to all our questions.

We would also like to thank Dan Andersson, our supervisor at Chalmers University of Technology for his time, inspiration and all the good input during the project process.

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1. Introduction

The introduction provides a background to the master's thesis and a short description about the company, ICA Non Food. The purpose of the report will also be presented in this chapter followed by the research questions. Finally, the limitation as well as the outline of the report will be described.

1.1 Background

Consumers are getting more demanding and more price-conscious nowadays and this force the retailers to have a more responsive supply chain at the same time as keeping the costs as low as possible (Supplychaindigital.com, 2013). Therefore, the logistics performance is getting increasingly important for a retail company that wants to be successful by responding to the consumers' demands (Fernie and Sparks, 2014). Logistics performance can be viewed as a subset of the larger notion of organizational performance and to be able to improve the organizational performance it have to be measured, since if the performance cannot be measured, it cannot be improved (Waters, 2003). Since the logistics performance is a part of the organizational performance, good values in different logistics measurement will increase the overall organizational performance (Heaver and Henriksson, 1994). Companies can measure their logistics performance by using different logistics performance measurements such as inventory turnover and customer service (Ellram, La Londe and Weber, 1999). Caplice and Sheffi (1995) do not suggest specific logistics performance measurements for companies to use since these measurements will depend on different factors which will create a unique logistical environment for each company. Examples of such factors are the company's product characteristics, management focus, marketing channel, the competitive situation (Caplice and Sheffi, 1995) and other factors like the end user, structure of the company and current business environment (Caplice and Sheffi, 1994). The most important and critical measurements that each individual organization focuses on should be categorized as the organization's Key Performance Indicators, KPIs (Parmenter, 2010).

Measuring the logistics performance internally within the company is commonly used, but it could also be beneficial to do an external comparison to have the possibility to borrow ideas from other companies and adapt them to gain competitive advantage. One way for an organization to make an external comparison is to perform a benchmarking. Benchmarking is a systematic method where organizations compare and measure themselves against the best industry practice in order to identify, understand and adapt superior practices (Besterfield et al., 2003).

One retail company that works with the improvement of their logistics performance is ICA Non Food. The logistics KPIs that ICA Non Food is focusing on are inventory turnover, total logistics costs and service ratio. ICA Non Food has continuously improved their logistics performance during the last years and strives to increase their performance and competitiveness even further. To succeed with this, ICA Non Food is thrived to discover potential areas of improvement by increasing their understanding of how good their logistics performance is compared to other retail companies[1].

1.2 ICA Non Food

ICA Non Food is a part of ICA Group that has around 2 300 stores, both own and retail owned in five geographical markets. This makes ICA Group to one of the leading retail companies in the Nordic Region with their core business in grocery retail. ICA Group's operations are divided into six different segments, ICA Sweden, ICA Norway, ICA Baltic, ICA Bank, ICA Real Estate and Portfolio Companies that are wholly or partly owned (Icagruppen.se, 2015).

ICA Non Food is included in ICA Sweden and is working with purchasing, design and sales of non-food goods. ICA Non Food has six product categories; Home, Kitchen, Seasonal, Media, Clothes &

[1] Andreas Bolger (Logistic Controller, ICA Non Food) Interviewed January 14, 2015.

Shoes and Toys & Leisure. ICA Non Food's headquarters is placed in Gothenburg, Sweden with around 190 employees. ICA Non Food runs the sales of the non-food goods in Maxi ICA Stormarknad and is therefore selling their products directly to the consumers. They have their own staff for their goods in these stores but are using Maxi ICA Stormaknad's cashiers and are therefore sharing the costs for this with them. ICA Non Food also runs wholesale trade for ICA Kvantum, ICA Supermarket and ICA Nära since these stores also can buy products from other suppliers than ICA Non Food. In this case, ICA Non Food's revenues come from the stores and not directly from the consumers. ICA Non Food is also supplying products to ICA Group's operations in Norway and the Baltic States (Omica.ica.se, 2015).

1.3 Purpose and research questions

The aim of this report is to increase ICA Non Food's understanding of their current logistics performance and by this making them aware of potential areas of improvement.

Logistics is a big part of ICA Non Food's business due to the high amount of resources their logistic requires which is a result of the high amount of goods they are managing. ICA Non Food has continuously improved their logistics performance the last years and is now striving to increase their performance and competitiveness even further. To do this, the company wants to discover potential areas of improvement by increasing their understanding of how they are managing their logistics performance.

To be able to answer the aim of this report, two underlying research questions are defined. These will be presented below and short arguments why these have been chosen and why they are important will be explained after each question.

1. How is ICA Non Food currently measuring and following up their logistics performance and are they doing as the literature recommends?

To answer this question, a literature study of how it is recommended for companies to evaluate their logistics performance, i.e. what should companies consider when measuring and following up their logistics performance depending on the company's context will be performed. The definition of logistics performance, the selection of which KPIs to use when benchmarking logistics performance and the KPIs definitions including how they should be measured will be presented. The KPIs to use when benchmarking the logistics performance will be influenced by the company's context which will be taken into consideration in this study.

After the literature study, it will be possible to understand how ICA Non Food currently is measuring and following up their logistics performance compared to the literature to investigate if ICA Non Food is covering the critical and relevant KPIs and aspects when managing their logistics performance.

The next step after comparing ICA Non Food's KPIs with the literature is to compare ICA Non Food's logistics performance with other retail companies. This will be done by performing a benchmarking which leads to the second research question.

2. How does the logistics performance currently look like at ICA Non Food compared to other retail companies?

A general benchmarking process will first be presented in order to know how to perform a benchmarking study between ICA Non Food and other retail companies. After this, the benchmarking process will be performed. The KPIs that will be benchmarked in this report are inventory turnover and total logistics costs which are the KPIs that ICA Non Food are focusing on. By comparing these two KPIs, ICA Non Food will increase their understanding of how their main KPI values are compared to other retail companies. To be able to benchmark the KPIs, the underlying factors of these values will be considered since these can differ between companies. The benchmarking study will also be performed to understand which strategy the companies are focusing on in order to understand why

their KPI values look like they do. This will increase the understanding of why the KPI values differ between different companies depending on how they are measuring their KPIs, which strategy they have and their context.

All companies are not using the same KPIs due to their different strategies and it will therefore also be investigated which KPIs the other companies are focusing on, why these are important for the company and how these are related to their strategy. This will then be compared between the companies to understand the relation between the KPIs companies selects and the strategies they have.

Together with the results from the benchmarking process and secondary data such as market surveys, ICA Non Food's and the other companies' logistics performance will be evaluated and compared to make ICA Non Food aware of what they are good at and what they can improve to increase their logistics performance. By doing this benchmarking, the other benchmarked retail companies' logistics performance will also be analysed.

1.4 Limitations

One limitation of this report is that the report does not cover ICA Non Food's operations in Norway and the Baltic States. Instead the report will focus on ICA Non Food's sales in Sweden to Maxi ICA Stormarknad, ICA Kvantum, ICA Supermarket and ICA Nära and the sales from Maxi ICA Stormarknad. Due to this, there will be no conclusion about ICA Non Food´s logistics performance outside Sweden.

Another limitation that this report will have is that the KPI values that are going to be benchmarked between ICA Non Food and other retail companies will be two of ICA Non Food's current logistics KPIs. The KPIs that will be benchmarked are; inventory turnover and total logistics costs. The KPI service ratio will however not be benchmarked against other retail companies but it will be analysed without using specific values. The main reason for choosing to benchmark the inventory turnover and total logistics costs values is due to the time limit of the interviews with the benchmarked companies and of the study. The people that are interviewed are busy and therefore a too long interview with them is not a choice. Therefore a priority list of which logistics KPIs that were most important for ICA Non Food were done and these two logistics KPIs that were presented above were chosen. The reason for using ICA Non Food's KPIs and no other logistics KPIs is because a lot of information regarding these KPIs can be found due to the access to ICA Non Food's database and this makes it easier to compare ICA Non Food's logistics performance with other companies.

Other KPIs that the different benchmarked companies are using and focusing on will be analysed to be able to know what the different companies most important KPIs are and how these are related to their strategies. These KPI values will not be compared with each other, the KPIs will instead be used to understand the relations between the KPIs companies are focusing on and their strategy.

1.5 Report Outline

Introduction- This chapter has presented the background to the initiation of the master's thesis and ICA Non Food. Furthermore, the purpose and research questions as well as the limitations of the report were presented.

Literature Review- In this chapter, the theoretical background relevant for the master thesis will be presented including explanations of the four different concepts, logistics performance, KPIs, positioning and benchmarking.

Methodology- The chapter will describe how the research for this study is conducted in order to achieve the purpose of the master's thesis. The data collection methods will also be discussed in this chapter. Finally, the chapter ends with a section where the data accuracy is studied and the analysis process of the study is presented.

Empirical data- This chapter will present all the data that have been gathered throughout the study. Both secondary data from different market surveys and primary data from the interviews with ICA Non Food and the other benchmarked companies will be presented in this chapter.

Analysis- This chapter is divided into three parts. The first part is analysing how ICA Non Food is managing their KPIs compared to the literature and the second part is analysing how the company is measuring their KPIs compared to the literature. The third part of the analysis is analysing how the logistics performance looks like in the retail industry by using secondary data from different market surveys and primary data from the interviews with ICA Non Food and the other retail companies.

Conclusion – This chapter is concluding the report by answering the main purpose of this study which is to increase ICA Non Food's understanding of their current logistics performance and by this making them aware of potential areas of improvements. This chapter is divided into two parts where each part is answering one research question.

Discussion- This chapter will except for discussing the conclusion, include recommendations relating to further research within the area.

2. Literature Review

This chapter is divided into four parts. The first part presents a general description of logistics performance and how companies should measure and follow up their logistics performance. Literature regarding Key Performance Indicators (KPIs) is presented in the second part in order to create a better understanding of the definition of KPIs and how companies should develop and use their KPIs. How the literature recommends measuring the inventory turnover and total logistics costs will also be described in part two. The third part of this chapter is "positioning based on market- and logistics strategy" and the part presents how companies KPIs are linked to their market strategy and how this will influence their logistics performance. The last part of this chapter is about benchmarking. In this part, the purpose of benchmarking and different types of benchmarking will be presented. Finally, the benchmarking process and which KPIs to select when performing a benchmarking will be presented in order increase the understanding of how to proceed when doing a benchmarking.

2.1 Logistics performance

The role of logistics in business has increased in both scope and strategic importance over the last decade. Logistics is a set of complex activities which require a collection of metrics in order to measure the performance. Logistics strategy is today influencing a lot of core business processes such as customer selection, product design and partnership/alliance building (Caplice and Sheffi, 1995). Finding a solution of how to manage logistics successfully could be a struggle for companies since there is no best practice due to the fact that companies act in different contexts affecting the each solutions suitability. The specific context each company acts in differs depending on the industry the company acts in, the products the company offers, the customers they serve, the suppliers they cooperate with and their position as well as role in the supply chain. Due to the fact that the context affect, it is important for companies to consider their specific conditions and critical success factors when creating their logistics strategy, instead of adapting a solution suitable for someone else (Fisher, 1997).

The definition of logistics performance can be viewed as a subset of the larger notion of organizational performance that is related to logistics. The logistics performance is therefore influencing the overall organizational performance and due to this it is a pressing need for companies to evaluate their logistics performance measurements (Heaver and Henriksson, 1994). Companies should evaluate their logistics performance both at the individual performance metrics level and system wide level to maintain relevance as well as effectiveness (Caplice and Sheffi, 1994).

The primary reason for analysing the individual metrics separately is because they are the building blocks of a complete measurement system and if these are flawed it does not matter how good the overall system is designed, since the signal to the decision makers then will be inaccurate. Caplice and Sheffi (1995) do not suggest specific metrics for companies to use when measuring and following up their logistics performance since these metrics will depend on different factors which will create a unique logistical environment for each company. Examples of such factors are the company's product characteristics, management focus, marketing channel, the competitive situation (Caplice and Sheffi, 1995) and other factors like the end user, structure of the company and current business environment (Caplice and Sheffi, 1994).

The primary reason for evaluating the performance measurement system as a whole is since the systems guide the management decisions that are based on the companies' logistics performance. By having well defined system performance metrics, the decision making by managers will be much better. Therefore, a measurement system should have individual measurements that are cohesive, comprehensive and complementary with each other instead of a set of independent and not consistent individual performance metrics (Caplice and Sheffi, 1995).

What is a good logistics performance are, is challenging for researches in any field of management to define, since organizations have multiple and frequent conflicting goals. Some organizations define goals in terms of profit while others define them as customer service or sales maximization (Heaver and Henriksson, 1994). The measures that are used for defining the logistics performance can according to Heaver and Henriksson (1994) be divided as "hard" measures that are the financial measures and cost accounting data such as net income and "soft" measures that are service measures such as customer satisfaction. Many organizations are using hard performance measures when evaluating their logistics performance since these measures are typically impersonal, accurate and inexpensive to collect. One disadvantage with using the hard measures is that the financial values are often considered confidential and many companies are therefore reluctant to release information to outsiders which makes it difficult to compare these values between organizations (Heaver and Henriksson, 1994). To develop a true picture of logistics efficiency, companies must measure both the hard and soft aspects of performance (Vitasek and Maylett, 2011). There are several dimensions of logistics performance such as customer satisfaction that hard measures cannot capture in a meaningful way and it is therefore important to use soft measures to cover the several dimensions (Heaver and Henriksson, 1994).

Many logistics managers are struggling with conflicting objectives when driving logistics improvements. The conflicting objectives they are facing are the tough choices of either strive for efficiency or for effectiveness (Griffis et al., 2004). While efficiency is about doing the thing right, effectiveness is about doing the right thing (Chaffey, 2014). According to Griffis et al., (2004) these two performance objectives are mutually exclusive since if only efficiency is measured and used for judging the performance it will likely cause the effectiveness to decrease (Andersson, Aronsson and Storhagen, 1989). To overcome this "measurement gap" between internal efficiency which is the traditional financial measurement such as company's cost and revenues and external effectiveness which is the engineered measurement of physical quantities such as customer service levels, Andersson, Aronsson and Storhagen (1989) are recommending companies to use the internal vs external measurement approach. This approach will help organizations to choose which groups of metrics that are of greatest importance when measuring overall logistics performance. The internal performances are measured within different units in the company such as materials management, production and distribution. The external performances are measured in different levels; between the different units in the company, for the entire company towards the customers and supplier performance towards the company. The important metrics for the internal and external performances are presented in Figure 1 below.

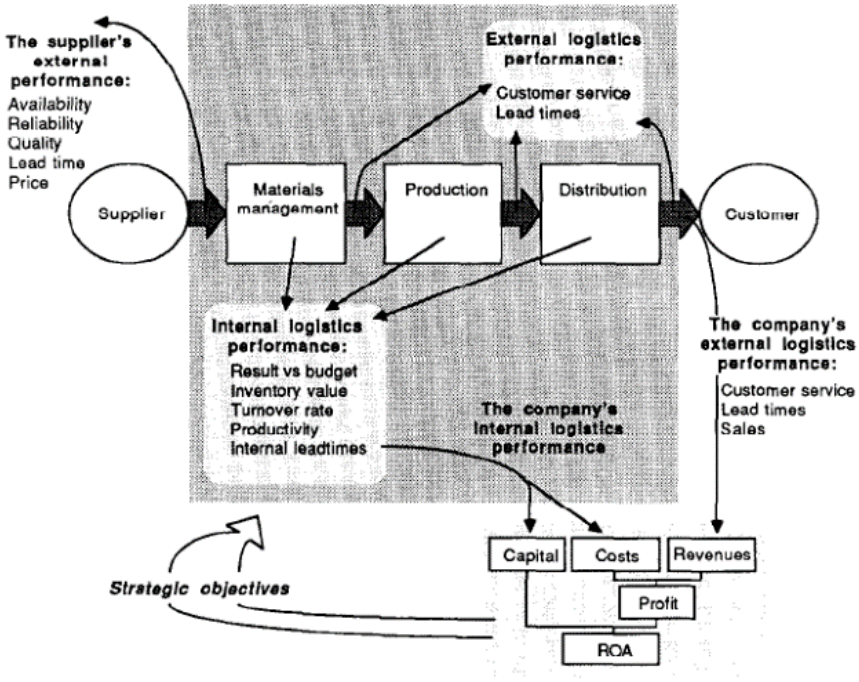


Figure 1 Important metrics for internal and external performances (Andersson, Aronsson and Storhagen, 1989).

2.2 Key Performance Indicators

Organizations are continuously measuring different activities but not all measurements are Key Performance Indicators, KPIs (Reh, 2015). KPIs are a set of measurements representing those aspects of a company's performance that are most critical for the company's current and future success (Parmenter, 2010). They provide a company with information of how they are performing, if the company is on the right track or if something is about to change. KPIs are also used to increase the understanding of what is important for the company and the activities needed (Reh, 2015). It is argued by RSA (1994) that it is necessary to use KPIs to achieve a sustainable business.

2.2.1 Managing Key Performance Indicators

When using KPIs it is important that they are consistent with the company's objective and that the whole organization work with them instead of only having the KPIs implemented on a higher organizational level. Succeeding with this is often a challenge for companies. The reasons for this is lack of communicating the critical success factors to the employees and lack of selecting measurements for the company that are coherence with the critical success factors. By having a clear communication and prioritizing the selection of measurements, objectives get clarified, daily teamwork gets aligned and the understanding for organizational strategies increases (Parmenter, 2010).

Parmenter (2010) recommends companies to measure their KPIs frequently, at least daily or weekly. If a KPI is measured less frequently it indicates that it is not important for the company and the measurement should therefore not be categorized as a KPI. Furthermore, less frequent measurement does also result in a past oriented view instead of current and future oriented view which is the required view for a KPI (Parmenter, 2010). Cbsolution.net (2011) also writes that KPIs should be updated daily or weekly, see Figure 2, but argues that a higher frequency than 24 hours is useless from a strategic point of view with exceptions from markets with high dynamics such as the security market.

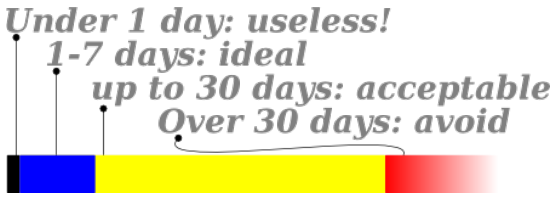


Figure 2 How often should KPI be updated? (Cbsolution.net, 2011)

Furthermore, as seen in Figure 2, updating monthly is acceptable for strategic information but it depends on the specific measure the company is tracking i.e. the context. Cbsolution.net (2011) recommends companies to choose the frequency that suits the company's needs the best, for example if the company has weekly reviews they should choose to update it with a weekly frequency. Updating less frequent than monthly is something that Cbsolution.net (2011) do not recommend companies to do since it does not provide the company enough observations which for example makes it more difficult to identify trends. Other reasons for not updating with a low frequency are the time it takes to identify deviations that could result in deviations identified too late, furthermore it will take an increased time to get feedback on decisions made (ibid.).

Another KPI characteristic that Parmenter (2010) is recommending is that the KPIs should be affected by and get continuous attention of the CEO or the company's management team due to the KPIs importance. The KPI should also be able to tell the required actions, for example indicating when a measurement needs to be improved (Parmenter, 2010).

It is also important that numbers of KPIs the company are focusing on are not too high in order to increase the KPIs quality by letting employees in the company have an increased focus on the improvement of the most important measurements (Reh, 2015). A small number of KPIs will also make it possible to streamline the process (Anand and Grover, 2015) and eliminate measuring everything that is possible but instead focusing on the measurements that matters (Neely, 1999). The number of KPIs differs within organizations and for organizations consisting of many different businesses from different sectors the number of KPIs is often higher. Although Parmenter (2010) is recommending companies to not use more than ten KPIs to be able to focus on these and continuously work with them.

It is important to make sure that KPIs are continuously used throughout the organization by making it a part of the culture since the good work with the KPIs otherwise might be forgotten. To make it possible to facilitate the use of the KPIs, it is crucial that the senior management team sets an example by using the KPIs and when they change into the wrong direction they should immediately find the reasons for it. It is also required that the senior management team empowers the employees to make it possible for them to take the immediate actions. Therefore it is important that the KPIs are available for the employees since a high exposure increases understanding and performance, this could be done by presenting up to date KPIs at the intranet. Furthermore it is important that there is a functional reporting framework since employees then will be encourage responding to the reports and taking corrective actions by having a continuous work with the KPIs throughout the organization, the KPIs will be applied in a proper way and it will be possible to reach the desired change (ibid.).

Parmenter (2010) is also recommending that the selected KPIs continuously should be maintained and updated in order to always be relevant for the company. When working with KPIs the company will improve, priorities will change and it is therefore important to move on to the next area of improvement when the previous priorities are mastered. It is a matter of teams modifying and changing the KPIs during the process of improvement, the KPIs should be reviewed on a periodic basis but not more often than every sixth months. By being up to date a company will focus on the most important KPIs, areas of improvements and important tasks will not be overlooked (ibid.). It is although common with companies lacking the process for managing the measurement system after implementation and Neely (1999) writes that this is a weakness in the research area that should be strengthened in order for companies to change their measurement system in accordance to evolving circumstances such as changing markets.

2.2.2 Inventory turnover and total logistics cost

Two of the logistics KPIs ICA Non Food focuses on are inventory turnover and total logistics cost. These KPIs have ICA Non Food divided into sub KPIs, which are inventory days, total logistics cost as a percentage of sales and total logistics cost per unit sold. This chapter will present the definition of these KPIs and how they should be measured according to the literature.

2.2.2.1 Inventory turnover

The KPI, inventory turnover, measures how many times a year the company is able to sell their entire inventory (Klipfolio.com, 2015), i.e. the numbers of times per year the company sells their stock and replenish it. The formula for inventory turnover is (Bergman, Knight and Case, 2006):

$$Inventory\ turnover = (COGS\ \div Average\ Inventory)\times 360$$

Cost of goods sold (COGS) is any direct costs related to the production of goods that are sold or the cost of inventory the company acquire to sell the product and this value should be divided with the average inventory per day (Bergman, Knight and Case, 2006). According to Averkamp (2015), using COGS makes sense since inventory is the cost of goods in hand and is reported to the balance sheet as a cost. Bailey (2013), Averkamp (2015), Bergman, Knight and Case (2006) argue that COGS covers the costs for what a company have sold including theft and shrinkage which is of importance. The average number of inventory is the value of the beginning inventory plus ending inventory divided by two. Some companies only use the ending inventory (Bergman, Knight and Case, 2006). Average inventory should be used instead of ending inventory because many companies' products fluctuate greatly throughout the year. For instance a company may purchase a large amount of products January 1 and sell these the rest of the year. The inventory during the days in January will therefore be high while the inventory during the days in December will be low since the most of the products have then been sold. By doing this, the inventory during the year will not be accurate (My Accounting Course, 2014). Another way to calculate the average inventory is by using the beginning or ending inventory for each month, then add together the inventory values for the last 12 months and divide it by 12. This will give the average inventory per day for each month (Bailey, 2013)**.** To get the inventory turnover per year, it should be multiplied with the number of days during a year, example 360 (Bergman, Knight and Case, 2006).

The inventory turnover is measuring how efficiently a company uses its inventory (ibid.). Generally, a high turnover rate is better than a low turnover rate since a low turnover rate means inefficiency and difficulty in turning stock into revenues. However it is important to understand that each type of industry has different inventory turns and the inventory turns cannot be compared directly with each other (Klipfolio.com, 2015). As long as the company has enough inventory on hand and can meet their customer demand with it, the more efficient can the company be by increasing their number of inventory turns (Bergman, Knight and Case, 2006). For example, a fresh produce supplier will have a higher turnover rate than a textile/clothing supplier (Klipfolio.com, 2015).

It is also important for companies to not only use a single inventory turnover that represents all inventory performance for the whole company if the company is selling more than one product category. The reason for this is since this can result in a misleading inventory turnover ratio. Instead, companies should measure the inventory turnover ratio for every product category to get a more accurate inventory turnover ratio. For example if a retailer is selling different product categories such as diamond rings, dresses, jeans and T-shirts and is measuring the inventory turnover as a whole, the ratio that the company gets will not represent the ratios for these different product categories since the turnover ratio differs between these product categories and it is therefore important to calculate the inventory turnover separately for each product category. A low turnover rate is maybe more acceptable for one product that for example is more profitable (Hou, 2013).

2.2.2.2 Inventory days

The sub KPI, inventory days measures the average number of days inventory stays in the system, i.e. the number of days it will take for a company to sell its inventory. The formula for the inventory days is presented below (Bergman, Knight and Case, 2006).

$$DII\ (days\ in\ inventory) = (Average\ inventory \div COGS) \times 360 \rightarrow 360 \div Inventory\ turnover$$

To calculate the DII in years, companies should multiply the value with the number of days in a year, in this example 360 days (ibid.). If the average inventory for instance is $100,000 and the COGS per day is $600,000, the DII is 60.8 days. This means that the inventory stays in the system approximately for two months, i.e. it takes on average two months to sell the inventory (Investopedia, 2009). If this is good or bad is hard to state since it depends on the product, industry, competition etc. (Bergman, Knight and Case, 2006).

As seen in the formula above, the days in inventory can also be calculated by dividing 360 with the inventory turnover.

2.2.2.3 Total logistics cost

The KPI total logistics cost include all the costs that are associated with logistics. According to Sople (2010) total logistics costs can be broken-up into the three categories inbound, process and outbound logistics. The inbound logistics are the transportation costs associated with the purchasing product from the suppliers. The process logistics includes all operations related to processing such as warehousing, storage and inventory management. The last category, outbound logistics are the transportation costs associated with the transportation of the finished products from the company to the customers or from the warehouse out to the stores (Sople, 2010).

When companies want to reduce the total logistics costs, it is important that they consider all components that affect the total logistics costs instead of trying to minimize the cost of each component (ESCAP, 2003). Considering all components as recommended and not only a certain area is not common within companies (Rantasila and Ojala, 2012) but it is of importance since there is a trade-off between the different cost components and trying to reduce one separate component may lead to higher total logistics costs (ESCAP, 2003). An example of this is a company changing the production schedule with the aim to improve production efficiency, a decision that might increase the total logistics cost due to fluctuations in finished goods and decreased customer service (Rantasila and Ojala, 2012).

Every organization has its own unique supply chain and the different costs components for the total logistics cost can therefore vary between organizations (Hartman and Media, 2015). It is common for companies to categorize their cost components with the aim to reach a good structure and common categories are transport costs, cost for administration of orders and information, inventory management costs, handling costs, costs for customer service and costs for purchase and production (Björnland, Persson & Virum, 2003, Lambert, Stock & Ellram, 1998).

By formulating the total logistics costs in relation to other factors it becomes possible to compare companies' total logistics costs which each other (Oskarsson, Aronsson and Ekdahl, 2006). According to Sople (2010) logistics costs could for example be measured as a percentage of total sales or per unit sold. As illustrated in Figure 3, according to a survey by Supply Chain Digest (2006) with 247 companies within different industries, the most used method to measure total logistics costs was logistics costs in absolute terms which were used as the primary method at 40 percent of the participating companies. The secondly most used method was logistics costs a percentage of sales which were used as the primary method at 25 percent of the companies. Although, none of the 28 retail companies participating in the survey, used logistics costs in absolute terms as their primary method. Instead about half of the retail companies used logistics as a percent of sales as the primary

metric and the other half used logistics costs per unit sold (Supply Chain Digest, 2006). Logistics costs as a percentage of sales and as a percentage per unit are described in the subchapters below.

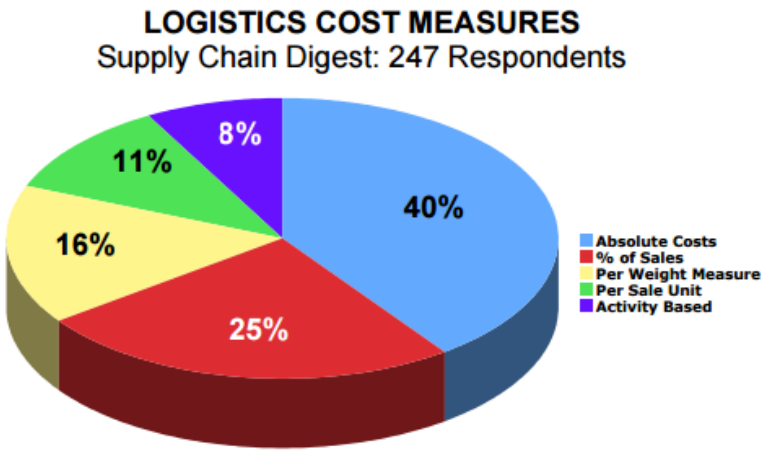


Figure 3 Methods to measure total logistics costs (Supply Chain Digest, 2006).

2.2.2.4 Total logistics costs as a percentage of sales

Logistics costs as percentage of sales is a KPI that defines supply chain performance. According to McPhee (2014) this KPI is measuring how much of a company's sales are invested in logistics expenses. The formula for this KPI is (McPhee, 2014):

Total logistics costs as a percentage of sales= total logistics costs ÷ sales

2.2.2.5 Total logistics cost per unit sold

Total logistics costs per unit sold is the most suitable KPI for comparing logistics costs since it is often not directly affected by changes in the sales price as total logistics cost as percentage of sales is. Furthermore it is beneficial to use since the impact of volumes is lower compared to total logistics costs in absolute terms. However, total logistics costs per unit sold can also be affected by volumes changes since high volumes can generate opportunities for greater efficiency and results in lower total logistics costs per unit sold (Supply Chain Digest, 2006). The formula for the KPI total logistics costs per unit sold are (Magee, Copacino and Rosenfield, D, 1985):

Total logistics costs per unit sold= Total logistics costs ÷ Number of units sold

2.3 Positioning based on market- and logistics strategy

Many consumers take it for granted that products will be available to buy in the stores at any time. Having the right product at the right time and in the right place is a huge challenge for retailers. It can be expensive for retailers if they are not controlling their logistics in an effective way. By developing logistics KPIs, companies can measure their logistics performance to have the opportunity to improve it. As Lord Kelvin states, "If you cannot measure it, you cannot improve it" which is the reason why it is so important to measure the logistics performance (Anand and Grover, 2015).

A company's KPIs have to be clearly linked to its market strategy to be able to measure if the company is meeting their strategic and operational goals. Linking KPIs to strategy is the heart of a successful organization (Kaplan and Norton, 1993). KPIs will therefore vary between companies and industries depending on their priorities or performance criteria. For example, if a company's primary goal is to have field engineer arrive at the customer site as quickly as possible to help the customers solve their problems, then one important KPI could in this case be Average Time to Respond (AVR) and other customer satisfaction metrics. However, if a company is instead focusing more on for instance field engineering utilization then KPIs such as number of service calls handled per field engineer/day will therefore be more important (Pollock, 2007).

2.3.1 Market strategies

Christopher's logistics and competitive advantage matrix (2005) is one way to segment companies depending on their market strategies, see Figure 4. Christopher (2005) presents a company's competitive advantage as a combination of cost advantage and value advantage. Successful companies will often seek to achieve both high cost advantage and high value advantage.

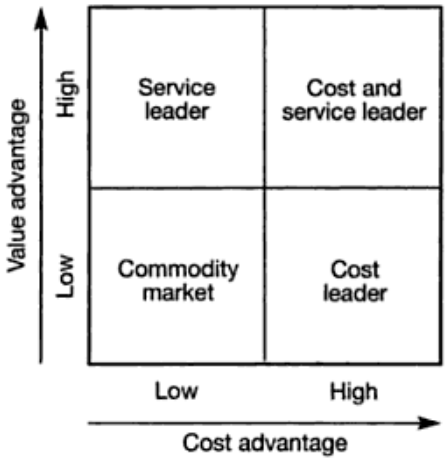


Figure 4 Logistics and competitive advantage (Christopher, 2005).

The companies that are in the commodity market have neither a cost advantage or value advantage and companies that are in this quadrant should try to move out from this quadrant to either the cost leadership quadrant or the service leadership quadrant to be a competitive player on the market. According to Christopher (2005), the most profitable companies are either the lowest cost producers or the supplier that provides a product with the greatest perceived differentiated value (Christopher, 2005).

Companies with cost leadership strategies are often focusing on economies of scale, gained through sales volume. The higher the company's market share is compared to its competitors, the lower their costs are and this can be used to assume a position of a price leader. A company can also achieve a powerful cost advantage through logistics and supply chain management instead of economies of scale. Logistics costs represent a high amount of the total costs for some companies in many industries. By decreasing the logistics costs the total costs will therefore be reduced a lot which will make the company a cost advantage company (ibid.). From a logistical perspective a cost leadership strategy are commonly called a lean strategy due to the focus on lowest possible costs and efficiency. It is although argued that lean logistics focus on costs is too high and is not flexible enough to deal with rapidly changing conditions. It is therefore recommended to have a cost strategy and lean logistics when the demand is stable which makes the company not forced to have a flexible approach (Waters, 2003).

Other companies are instead seeking to be service leaders. Customer service is all the factors that affect the process of making products and services available for the buyer, such as deliver frequency and reliability, stock levels and order cycles. All customers have their unique service requirements and no customer have exactly the same service requirements which makes it important to tailor the service to meet the needs of different customers (Christopher, 2005). In logistics, this strategy is called the agile strategy due to its focus on offering tailored solutions to buyers in a lower volume than a company working with lean logistics. Companies using this strategy are focusing on customer satisfaction by responding quickly to changing demands. The two most common aspects of agility are speed of reacting and the ability to tailor logistics to individual customer requirements (Waters, 2003).

The goal for companies is to both be cost and service leaders, which is the upper right corner in Figure 4. If a company is in this corner, it is extremely difficult for competitors to attack. The companies that

are market leaders are the companies that have gained both cost leadership and service leadership (Christopher, 2005). In logistics, companies that are both focusing on reducing costs and customer service are becoming both lean and agile, i.e. a hybrid logistics strategy (Waters, 2003).

2.3.2 Logistics strategies - lean and agile

There are different definitions of lean and agile but this report will limit the definition by using Martin Christopher's definition of these two logistics strategies. According to Christopher (2000) the key characteristics of an agile organization is flexibility and customer service while a lean organization is focusing on cost reduction and minimizing waste such as inventory. A lean company wants to imply "zero inventory" to eliminate waste as much as possible. Companies' logistics strategy can also be a combination of both lean and agile approaches as described before to get the best of both worlds, so-called "leagile" approach (Christopher, 2000).

It is important for companies to consider the demand for their products when selecting their supply chain. Companies that are offering functional products such as grocery stores have a primary purpose to supply predictable demand efficiently at the lowest possible cost. These products are satisfying basic needs and have long life cycle with a predictable demand (Fisher, 1997). Companies that have a predictable market demand with low product variety and long product life cycle where cost is the customer driver has a lean supply chain according to Fernie and Sparks (2014).

Companies that instead have a volatile market demand with high product variety and short product life cycle where lead time and availability is the customer driver have an agile supply chain (ibid.).These companies are offering innovative products and their primary purpose is to respond quickly to unpredictable demand in order to minimize stock-outs, forced markdown and obsolete inventory (Fisher, 1997). Examples of these companies are fashion retailers that have to respond fast to the marketplace (Mason-Jones, Naylor and Towill, 2000). The market winner for these companies is service level (Ferine and Sparks, 2014). Figure 5 below shows the ideal supply chain strategy according to Fisher (1997) where functional products should have an efficient supply chain and innovative products a responsive process, otherwise it can be a mismatch between the supply chains with the product types the company is offering.

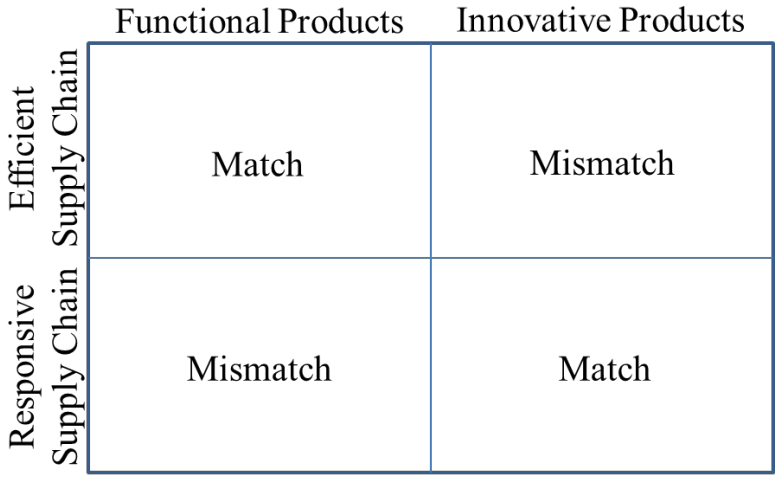


Figure 5 Matching Supply Chain with Products (Fisher, 1997)

Leagile should be used by companies that have volatile and unpredictable market demand with medium product variety and short product life cycle with service level as a customer driver. The market winner for these companies is cost and service level (Fernie and Sparks, 2014).

2.3.3 KPIs connected to logistics strategies

This chapter connects the logistics KPIs, inventory turnover and total logistics costs with the logistics strategies, lean and agile.

Companies that are using the agile strategy are focusing on customer service and require a higher inventory level to be able to deliver their products to their customers, which will increase the inventory costs (Sabri and Shaikh, 2010). These companies' inventory strategy is to deploy significant buffer stocks of parts of finished goods to have their products available for their customers which results in lower inventory turnover (Fisher, 1997). The lean strategy is instead focusing on eliminating waste and is therefore focusing on "zero inventory" (Christopher, 2000). These companies' inventory strategy is to generate high turns and minimize inventory throughout the chain (Fisher, 1997). From these definitions, the inventory turnover for a lean organization is higher due to that the lean strategy is focusing on minimizing inventory while agile organizations are focusing on customer service and need therefore higher inventory levels to meet the customers demand (Sabri and Shaikh, 2010). Since the inventory turnover is higher for lean organizations than for agile organizations, this means that the inventory days which is the inverse of inventory turnover is lower for lean organizations.

An agile organization needs to have fast deliveries and wide product variety due to its high customer focus (Fernie and Sparks, 2014), which leads to increased transportation costs. As presented in chapter *2.3.2 Logistics strategies - lean and agile,* the customer driver for a lean organization is to lower the costs and therefore it is focused on lowering the transportation costs as well.

Both inventory costs and transportation costs are included in total logistics costs and because both these two components are higher for an agile company it means that the total logistics costs also becomes higher for an agile company compared to a lean company. The connection between the KPIs, inventory turnover and total logistics costs, and the logistics strategies, lean and agile are presented in Table 1.

Table 1 KPIs connected to logistics strategies

KPIs	Lean	Agile
Inventory turnover	Higher	Lower
Total logistics costs	Lower	Higher

The measurements total logistics costs as a percentage of sales and total logistics costs per sold unit are different methods of formulating total logistics costs which were presented in chapter *2.2.2.3 Total logistic cost.* These two measurements are also higher for an agile company which will be described below.

The total logistics costs as a percentage of sales are usually higher for an agile organization due to that the total logistics costs are higher for agile organizations as described above. The value of the sales cannot be concluded from these two logistics strategies but depend instead of the organization's situation and size.

Agile organizations have as seen in Figure 6, high product variety and low volumes while lean organizations have lower variety and higher volume. The reason for this is since agile companies have to respond rapidly to changes in demand, both in terms of volume and variety (Christopher, 2000). Because the volume in agile organizations is lower and the total logistics costs is higher it means that the total logistics costs per sold unit for an agile organizations is higher than for a lean organization.

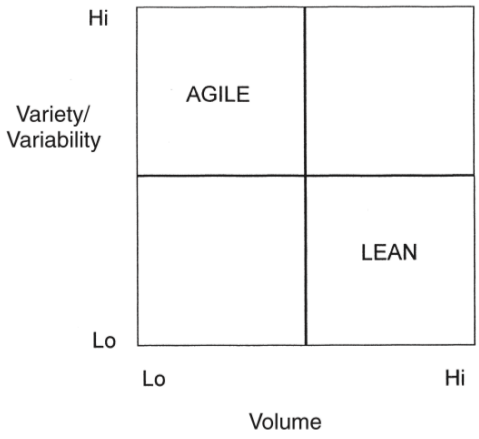


Figure 6 Agile or Lean (Christopher, 2000)

2.4 Benchmarking

Benchmarking is a systematic method where organizations compare and measure themselves against the best industry practice in order to identify, understand and adapt superior practices. The essence of benchmarking is to find a well performing practice to borrow ideas and adapt them to gain competitive advantage (Besterfield et al., 2003). As illustrated in Figure 7, by understanding the gap between a company's current performance and the current best industry practice, a company can define goals that have to be reached in the future to close the gap and make the company competitive (Starr, n.d.).

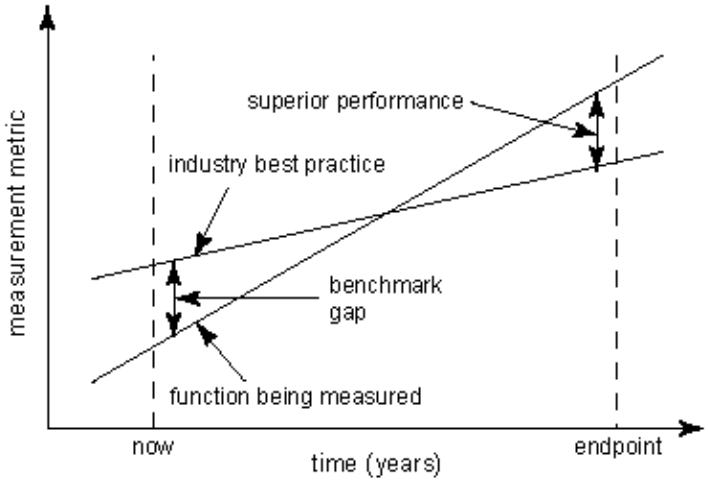


Figure 7 Benchmarking gap (Starr, n.d.).

2.4.1 Reasons for benchmarking

A benchmarking can be applied to the products, services and practices of an organization. Moreover, it can be applied to any area that the organization wants to improve and compare against others (Stapenhurst, 2009) and there are different reasons why organizations benchmark. Some of the reasons are to enhance improvement culture, to shortcut the improvement process and to use it to drive for improvement (Stapenhurst, 2009). Some benefits of doing a benchmarking are according to Starr (n.d.) to increase the understanding of the market, become industry leader, work more proactive, increase the understanding of competitors and the outputs generated by the company and deliver with superior performance. All of the presented benefits makes a company successful, competitive with an increased understand of the market (Starr, n.d.). Switanowski (2011) also argues that a company becomes competitive due to benchmarking and the author writes that a retail company can use benchmarking to reach a long-term success by understanding more than the internal performance and by this gain internal knowledge that will enable the company to improve.

2.4.2 Different types of Benchmarking

Benchmarking can be divided into internal versus external. The internal benchmarking is a benchmarking that is done within the company to find the best in-house practice and share the knowledge of those practices to other parts in the organization (Ronco, 2012). This type of benchmarking is typically done in bigger multinational or multidivisional companies where there are similar functions at different locations or operating units. This type of benchmarking is often the simplest benchmarking type since it will be easy to cooperate and find available data. Concerns about confidentiality and trust are also easier to overcome. Many organizations are starting their benchmarking process with an internal benchmarking to gain adequate returns and get comfortable with the benchmarking process. Internal benchmarking is therefore often a starting point for a benchmarking process. After this, companies start seeking external benchmarking partners to expand their learning potential. If the organization cannot find external benchmarking companies, it can be useful to only do an internal benchmarking (The National Academies Press, 2005). External benchmarking means that the organization seeks external companies to benchmark towards. According to The National Academies Press (2005), external benchmarking is generally considered to provide the greatest advantage since without an external benchmark, the company may lack understanding of what a competitive performance is (The National Academies Press, 2005). There are various types of external benchmarking such as, competitive benchmarking, functional (or industry) benchmarking and generic (or best practice) benchmarking (Elmuti and Kathawala, 1997).

Competitive benchmarking is a benchmarking type where companies benchmark themselves against direct competitors who have competing products, services or work process (ibid.). The biggest challenge for this type of benchmarking is to gain access to their competitors' information and data especially if the information is vital to competitive advantage. Some companies are doing a competitive benchmarking by collecting competitive information from third-party sources including customers, consultants and independent industry reports. Another challenge with this benchmarking type is that every organization is unique and has different conditions which make it difficult to compare the KPIs directly with each other (Adebanjo, 2005).

Functional benchmarking is a comparison with non-competing companies that are the leaders for a specific function or process. The benchmarked companies are usually companies that share some common technological and market characteristics (Elmuti and Kathawala, 1997). Since the company that will be benchmarked is not a direct competitor, there are fewer concerns about confidentiality and it is therefore easier to gain information and data from them (Adebanjo, 2005).

In a generic benchmarking, companies from different industries are comparing operations that are included in almost all industries such as recruitment, invoicing, handling of customer complaints etc. The main advantages with this form of benchmarking is that it provides companies the possibility to implement a leading practice from another industry and it will also be easier to corporate, access data and information from the companies since they are not direct competitors. However, one difficulty with the generic benchmarking is to identify which company is the "best". A company that is best for one company may not be the best for other companies (Adebanjo, 2005). Another challenge with this type of benchmarking is that it is time consuming for companies to do and difficult to implement because a generic benchmarking requires a broad conceptualization of the entire process and a careful understanding of the procedures. Each company have to carefully evaluate how they want to benchmark their business to be able then to choose which benchmarking process they should choose (Elmuti and Kathawala, 1997).

According to Waters (2003), there are two types of benchmarking; quantitative (numeric, hard data) and qualitative (opinions, soft data). Many organizations use hard measures since it is easier to compare and people tend to believe in them. Only using quantitative benchmarking, precision, relevance and accuracy will be scarified and therefore when developing a benchmark, quantitative and qualitative benchmarks should not be viewed as isolated categories but should be viewed as complementary categories instead (Waters, 2003).

2.4.3 Benchmarking process

There are several methodologies companies can use to benchmark themselves against other companies. One methodology that have received the highest overall ranking of 14 benchmarking methodologies evaluated by the European Center for Total Quality Management in 1995, is APQC's[2] four-phase methodology that is presented in Figure 8 below (Coers et al., 2001).

Figure 8 APQC's Benchmarking Methodology (Coers et al., 2001).

As seen in Figure 8, the benchmarking process is not a onetime event but instead a continuous improvement process (Powers, n.d.). The first phase in APQC's Benchmarking Methodology is the planning phase where the company needs to start to understand what they need to improve and what the scope for the benchmarking process is. The company has to select the team that is going to work with this benchmarking process. Before benchmarking against other companies, it is also important for the company to understand their own process and sub processes that are affecting their process performance. In this step the company should also identify criteria for selecting potential benchmarking partners or best practice companies by understanding and defining exactly what the company is interested in learning and which type of benchmarking the company wants to use. After this, the company will be able to identify potential benchmarking partners (Coers et al. 2001). This phase is important since it is in this phase that the company decides what they want to benchmark and a well-planned benchmarking study will ensure effective results (Powers, n.d.).

The second phase is the collection phase, during this phase the company should use secondary research to identify potential benchmarking partners. The beginning of this phase is to collect information about the companies' process by doing a secondary research. The sources from the secondary researches could be data from libraries, business journals and experts. By doing this, it would be easier for the company to identify companies who appear to be excellent at a process and could therefore be a good benchmarking partner. The company should in this phase also decide how many partners they want and can afford to benchmark against. When they have decided how many partners they can afford to benchmark against they have to form an alliance with these companies. To be able to form an alliance with benchmarked companies, it is important that all the members are willing to share information. Before contacting these potential benchmarking partners, it is important to prepare an opening statement, an introduction where the purpose has to be explained. It have to be clearly stated why these partners have been selected and what the company is willing to share with these partners. After this, the company is ready to contact the potential benchmarked companies (ibid.).

The company should prepare questions for telephone surveys, mailed questionnaires, and site visits (Coers et al. 2001). It is important to ask the right question for the benchmarked partners, i.e. what you really want to know and avoid long sets of questions. The interviewer should also avoid asking

[2] "APQC is a member-based non-profit and one of the world's leading proponents of business benchmarking, best practices, and knowledge management research" (Apqc.org, 2015).

questions that can be found in public reports. This should the interviewer collect before the interview (Powers, n.d.). The more information the interviewer gather before the interview, the richer and targeted information can be gathered through the interview. This phase ends with a validation of the data that have been collected (Coers et al, 2001). To increase the validation, it is important that the company after the interview with the benchmarking partner is sending a summary of the findings and interpretations of the data gathered during the site visit. This is useful exercise since by doing this, the company will be able to accurate the interpretations and begins to involve the partner in the study. By doing this, the company will go a long way to establish a long-term benchmarking partnership (Zairi and Leonard, 1994).

In the analysing phase, the company should analyse the data that the company have collected during the interviews and identify the gaps of their own performance and what could be improved. The performance gap that could be identified is shown in Figure 7 and is called benchmarking gap. When a gap is identified it is important for the company to understand why this gap exists and plan an effective strategy for making improvements. The enablers that lead to the best practice should be identified. Companies cannot improve by only imitating benchmarking partners but it is important to understand how these enablers facilitate superior performance to be able to adapt them to your own organization (Powers, n.d.). The last step in this phase is to report the findings in a written report as well as in a presentation to the appropriate parties (Coers et al. 2001).

The last phase is the adaption phase and in this phase, the company should be able to establish long- and short-term improvement goals and formulate an action plan to reach this. The company should then adapt the changes and continuously track the progress of their implementation efforts and their results to be able to see that they get result from the changes (ibid.).

How long the benchmarking process should be varies dependent on the benchmarking project. Large benchmarking projects are typically lasting about six months with members working with this ten hours per week. Smaller benchmarking projects can be done much quicker (Powers, n.d.).

2.4.4 KPIs to select when benchmarking

There are different suggestions of what KPIs to benchmark and O'Byrne (2013) writes that KPIs such as stock loss or damages, total logistics costs and inventory levels provides a company with a snapshot of the logistics performance. KPIs related to inventory is common to benchmark (Anand and Grover, 2015; Industry Canada, 2006) and according to Anand and Grover (2015) the KPI inventory turnover is important for retailers since it is connected to the logistical performance. It is also argued that inventory turnover is important to benchmark since it is the main KPI for evaluating supply chain efficiency. Although having a high inventory turnover is not always good since it could affect a retail company by displaying empty store shelves (Anand and Grover, 2015).

The KPI logistics costs enable companies to evaluate their efficiency of logistics and supply chain management operations. By adding together all costs related to logistics a company can evaluate their performance by benchmarking themselves against their own industry, counterparts or other sectors with similar logistic processes. By comparing logistics costs together with inventory turnover a company could become competitive since by using corporate measurements of logistics and supply chain management KPIs a company increases the degree of improvements. An example is a decrease of 15% of shipment delays achieved by companies that benchmark continuously compared to 7% achieved by companies not using benchmarking as a tool for improving themselves (ibid.).

Regardless of what KPIs a company selects for benchmarking it is important to have a detailed action plan to get stakeholders to support the company's competitive logistic and supply chain management strategy and to secure the necessary involvement when implementing it (ibid.).

3. Method

This chapter is divided into four parts. The first parts will describe the research process of the master thesis. The next part will present how the data have been collected. The third part will present the study's data accuracy. Lastly, the analysis process will be presented.

3.1 Research Process

Throughout the project, continuous dialogues and weekly meetings have taken place with ICA Non Food and the supervisor at Chalmers. A progress report has also each Friday been provided to the supervisors at ICA Non Food and Chalmers. The reason for this is to enable all actors to be up to date, involved in the progress of the report and it was also used as a tool for communication as well as solving problems. To be able to answer the two research questions identified earlier in the report, a number of steps have been done which will be presented in this chapter.

The project started with collecting information about ICA Non Food, both from secondary data such as internet and primary data by interviewing the supervisor at ICA Non Food. A literature review was done to get a deeper understanding about logistics performance and how it is recommended for companies to measure and follow up their logistics performance. When this was done, a study about ICA Non Food's logistics performance and how they measure it was conducted by interviewing the supervisors at ICA Non Food and reviewing the systems where they managed their KPIs. After this, a comparison between how ICA Non Food is measuring their logistics performance and how the literature recommends companies to do was done. This will answer the first research question, which is about comparing how ICA Non Food manages their logistics performance compared with the literature.

The second research question covers how the logistics performance currently looks like at ICA Non Food compared to the other retail companies. To answer this research question, it was first determined together with ICA Non Food that the KPIs that was going to be benchmarked was inventory turnover and total logistics costs as a percentage of sales. The reasons for selecting these KPIs were due to their importance for ICA Non Food and by using total logistics costs as a percentage of sales, it was possible to compare the total logistics cost between the companies (Oskarsson, Aronsson and Ekdahl, 2006). After determining which KPIs to compare, the next step was to study how the benchmarking process should be performed since this needed to be done to be able to compare ICA Non Food's logistics performance with the other companies. From the literature study about the benchmarking process, *2.4.3 Benchmarking process,* a four-phase methodology was recommended to use. These four phases are planning, collecting, analysing and adapting. The adapting phase in the benchmarking process will however not be covered in this report since the aim of this report is to increase ICA Non Food's understanding of their current logistics performance and making them aware of potential areas of improvements and not formulating an action plan for the company.

The benchmarking type that was performed was the external competitive benchmarking since ICA Non Food was benchmarked against competitors with competing products. The reason for this is since ICA Non Food wants to understand how "good" their logistics performance is compared to their competitors to be able to find areas of improvements. The selection of benchmarked companies was done by discussing different criteria for choosing companies with the supervisors at ICA Non Food, such as selecting successful retail companies with competitive products. A secondary research was done in order to find benchmarked companies that achieved the criteria. When the benchmarked companies were chosen it was time to contact them by telephone to book an interview with each company. Before the interviews, secondary researches were conducted to collect information about how the different companies run their business and how it could affect their logistics performance. This was done to avoid asking questions that could be found in public reports and help the interviewer ask specific questions to the companies during the interviews which Powers (n.d.) also recommend to do. The interview questions are presented in Appendix 1. After this, qualitative face-to-face interviews

were conducted to understand how the companies at a deeper level were working with their logistics performance. When all the data collection was done, all the materials from the interviews were compiled and analysed to compare the different benchmarked companies' logistics KPIs. Both qualitative and quantitative data were collected to get a deeper understanding of how the benchmarked companies are managing their logistics performance. Qualitative data were gathered to get broader understanding of the company's market strategy and what they are focusing on while quantitative data were important to collect KPI values to use for the benchmarking. To get a broader analysis, secondary data from different market surveys about how retailers are performing in logistics in these studies was used. The reason for this was to get a more general conclusion and compare ICA Non Food's and the other benchmarked companies' KPI values with other similar studies.

3.2 Empirical data collection

This chapter will be divided into two different parts, selected benchmarked companies and data collection process. The selected benchmarked companies part will describe which companies were selected and why while the data collection process will describe how the data have been collected.

3.2.1 Selected benchmarked companies

In the selection process of the benchmarked companies, sets of criteria were created in collaboration with ICA Non Food. The main criteria was to select companies that was leading within the retail industry with product portfolios covering more than one of ICA Non Food's six product categories: Home, Kitchen, Seasonal, Media, Clothes & Shoes and Toys & Leisure. The selected companies will be anonymous in this report because the benchmarked companies did not want to show their names in the report. Some of the reasons according to the companies were that the information that is presented in this report is sensitive and important for them. This is also something Heaver and Henriksson, 1994) is saying since financial values are often considered confidential and many companies are therefore reluctant to release information outsiders. The companies that were chosen are therefore called company A, B, C, D and E in this report.

Company A was chosen since they offered products covering ICA Non Food's product categories to full or a high extent. Another reason why company A was chosen was due to their high status reputation and their broadness of products. As illustrated in Table 3 company A covered ICA Non Foods product categories Home, Kitchen, Media and Clothes & Shoes to full extent. ICA Non Food's product categories Seasonal and Toys & Leisure were covered to high extent by company A.

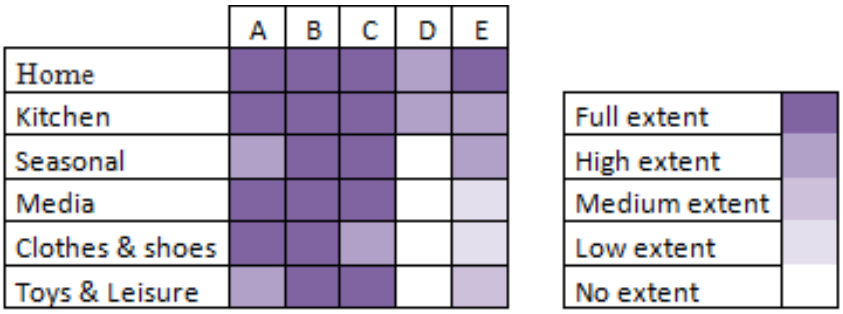
Company B was chosen since they and ICA Non Food offered non-food goods combined with food in grocery stores to a similar price. Company B covered all of ICA Non Food's product categories to full extent which is illustrated in Table 3.

Company C was chosen since they offered products covering ICA Non Food's entire product categories to a price aimed to be the lowest on the market. Company C covered Home, Kitchen, Seasonal, Media and Toys & Leisure to full extent and the product category Clothes & Shoes to a high extent which is illustrated in Table 3.

Company D was chosen since they offered a product portfolio with a focus on products covered in a few of ICA Non Food's product categories. None of ICA Non Food's product categories was covered to a full extent as illustrated in Table 3. The product categories covered to a medium extent was Home and Kitchen. The other product categories were not covered at all.

Company E was chosen since they are successful when it comes to offering a width of products and due to their large size. Their product portfolio covered ICA Non Food's categories Home to full extent, Kitchen and Seasonal to a high extent. Furthermore Toys & Leisure was covered to a medium extent and Media, Clothes & Shoes to a low extent which is illustrated in Table 3.

Table 3 The benchmarked companies´ coverage of ICA Non Foods product categories



To decide to what extent the benchmarked companies' products were covering ICA Non Food's product categories, a matrix was created. This was done to analyse how many of the benchmarked companies' product categories that was covering ICA Non Food's product categories. To find the benchmarked companies' different product categories, the companies' home web page was used and the interviewed persons at respective company were asked which product categories they had.

3.2.2. Data collection process

To answer the research questions in this report both primary and secondary data have been used, which are the two categories of data a data collection can consist of (Bryman and Bell, 2011). The data collection methods used was both quantitative and qualitative, which increased the accuracy of the report since KPIs are dependent on different factors and contexts, which created a unique logistical environment for each company. By performing both quantitative and qualitative interviews, the possibility to cover the different factors and contexts increased (Caplice and Sheffi, 1995).

3.2.2.1 Primary data

Primary data are gathered specifically for the requirements of each research and the data can be collected in two ways. The people performing the research or someone that the researchers hire can either collect the data. Examples of primary data are data conducted from interviews, observations and surveys (Mymarketresearchmethods.com, 2011). In this report primary data was collected from ICA Non Food by performing deep and comprehensive interviews with them to be able to answer the first research question, how they are measuring and following up their logistics performance. Primary data was also collected by visiting and interviewing ICA Non Food and the other benchmarked companies to get the necessary data to answer the second research question. The interview questions with the benchmarked companies are presented in Appendix 1. The aim with the interviews was to understand which KPIs the benchmarked companies focus on, the KPIs underlying factors and how the KPIs are related to the company's strategy. The aim of the interviews was also to compare the values of the companies' logistics KPIs that ICA Non Food is focusing on, i.e. performing an external competitive benchmarking. During these interviews, it was noticed that not all companies are using the KPIs ICA Non Food are focusing on, i.e. inventory turnover and total logistics costs. Something else that was noticed after the interviews was that not all companies sent the material that was asked afterwards which limited the analysis. How this was handled is described in chapter *3.4 Analysis process*.

The ten selected benchmarked companies were contacted by telephone were the purpose of this report was presented for them and they were asked if they had the possibility as well as the interest to participate in the study. With the five companies that showed interest, meetings for interviews were booked. The interviews took around two hours per company and were performed with employees that were highly involved in the company's logistics KPIs such as logistic controllers.

The purpose of interviewing five companies was to make it possible to get a deeper understanding of the companies' KPIs during the reports time limit. When there is a demand for getting a deeper understanding of the situation, a smaller number of responders with qualitative interviews are suitable to use (Lekvall and Wahlbin, 2001). Furthermore, when interviewing the companies Waters (2003)

two types of benchmarking was covered since the data collected both were quantitative by collecting data such as their KPI values and qualitative by collection information such as their market strategy in order to understand the companies' contexts. By doing this, a better comparison was made between ICA Non Food's and other retail companies' KPIs since not only numbers of the KPIs were compared but also understanding why the numbers was like they were. This was important since a direct comparison between the KPIs would not be correct due to the fact that the companies did not measure the KPIs as each other and did not have the same strategy. According to Adebanjo (2005) the context is of importance when comparing KPIs since every organization is unique and their conditions differ (2005). A qualitative interview was therefore important to use to understand the benchmarked companies' KPIs and their strategy since it affected the analyse part of this report.

3.2.2.2 Secondary data

When collecting secondary data, already existing data that originally have been collected by someone else are used. Examples of secondary data are journals, data from libraries, online sources and companies' internal data (Lekvall, Wahlbin, Frankelius, 2001). In this report, the secondary data was conducted by literature reviews and data collections gathered from ICA Non Food's home webpage, database and the benchmarked companies' annual reports and home webpages. Secondary data was also collected from similar market surveys as this project to get a better overview of how retail companies' logistics performances currently look like. This was done to be able to compare ICA Non Food's and the other benchmarked companies' logistics performance with other market studies. The market studies used covered total logistics costs and the reason for not presenting market surveys covering inventory turnover were due to lack of founded market surveys about inventory turnover that was useable.

The literature review that were made in order to answer the first research question includes the definition of logistics performance, which KPIs companies should use for evaluation of their logistics performance, the definitions of these KPIs, and how they are used and a review of how companies should follow up their logistics performance. There was also a literature review made which presents the definitions and methods for calculating the KPIs that are benchmarked. The literature review that were made in order to answer the second research question covers a general benchmarking process, the KPIs a company should select to benchmarking, the reasons for why companies select their KPIs and how KPIs are related to a company's strategy. The literature reviews of the relevant theory were conducted from articles and books available physically and in Chalmers University of Technology's online library, lib.chalmers.se. Furthermore, another data base used for collecting literature was Google scholar as well as the course literature from master degree courses within Supply Chain Management.

From ICA Non Food, fifteen companies was given as possible and desired to participate in the project. The purpose was to end up with approximately five benchmarked companies and the reason for creating a list of fifteen companies was due to the fact that it together with ICA Non Food was estimated that half of them would be eliminated due to lack of following the set of criteria or not being able to participate in the report. The fifteen companies were therefore investigated with the aim to see which of these that followed the criteria. This was done by a secondary data collection from annual reports where data covering the criteria was collected such as each company's product portfolio and strategy, which are described above in chapter *3.2.1 Selected benchmarked companies*. The outcome of the investigation was ten companies that were suitable for the benchmarking.

The secondary data collected about ICA Non Food were both gathered from their home web page and their database. From their home web page data about ICA Non Food was gathered to get a deeper understanding of the company. Data from their database were gathered to answer which products they have and to answer research question number one that has the aim to understand how ICA Non Food's measures and follow up their logistics performance.

3.3 Data Accuracy

This chapter will be divided into two different parts. The first will be about the sources of errors that could exist and how they are being avoided. The second part is presenting the study's reliability and validity.

3.3.1. Sources of errors

There are different sources of errors that could have arisen in this report due to that there were external parties involved in this study that may have influenced the result of the report. The sources of errors are the errors that cannot be controlled but will be avoided as much as possible. This chapter will therefore present how the different sources of errors are being avoided in order to increase this reports accuracy.

The KPI values from the benchmarked companies have not only been calculated from secondary data such as annual reports but the values have also been collected by interviewing the companies about the values and what the underlying reasons for the values were. The factors that were included when measuring the KPIs and how the KPI values depended on the company's market strategy was answered by performing the interviews. By doing this, the KPI values were more understandable and more comparable with each other since the underlying reasons for the KPIs values was being understood. When ICA Non Food's KPIs was analysed, sources of errors were discovered that arose due to input errors in ICA Non Food's database. The input errors have been discovered and analysed further to understand where the errors occur to get a more accurate KPI value. However, the time spend with the other benchmarked companies were shorter than the time spend with ICA Non Food and it was therefore more difficult to investigate if the other companies have input errors when they measure their different KPI values. This was investigated by asking the interviewed persons if they thought that they had input errors.

Another error that could have arisen is that the benchmarked companies' want to show a good picture of their company and therefore they maybe did not tell the truth about their logistics performance. This was handled by having clear and detailed interview questions to the companies in order to increase the possibility of companies describing a true picture of reality and not only striving to show a good picture of their company. To increase the possibility of companies describing the true picture of them, all the companies are anonymous in the report, which made that they did not need to show a good picture of their company in this report.

Errors could also have arisen during the interviews since the answers given during the interviews may have been influenced by the interviewed persons' position, background and interest. If performing the interview with someone else at the companies, the answers might have been different. Although, this was considered since all of the interviewed persons in this project was selected with thoughtfulness with the aim to select the ones with the most knowledge and similar positions, which might have increased the similarity between the benchmarked companies' answers and decreased the amount of errors.

The errors that could have arisen due to the use of secondary data were minimized by the use of a larger amount of material by different authors and publications. By doing this the errors of the material decreased.

3.3.2. Validity and reliability

The definition validity is evaluating if the right thing is measured, i.e. the trustworthiness of the conclusions of the research. The definition reliability analyses if the value of this measure is correct. One way to evaluate this is to evaluate the degree of whether the result of the study is repeatable (Bryman and Bell, 2011).

3.3.2.1. Validity and Reliability for Qualitative study

The validity can be divided into two criterions, external and internal validity (Bryman and Bell, 2011).

External validity evaluates if the result of the study can be generalized. This is difficult to achieve in qualitative research because they tend to employ case studies and small samples (ibid.). This report had a focus on doing a literature study and interviewing six companies inclusive ICA Non Food to get a detailed understanding how retail companies are measuring their logistics performance such as inventory turnover and total logistics costs. The result of the study indicated that it was difficult to generalize these measurements because different companies were including different factors in their logistics performance.

Internal validity is if the researchers' observations are aligned with the conclusions drawn in the study (Bryman and Bell, 2011). To ensure internal validity in this report, the summary of the findings of the data that was collected during the interviews have been sent to the interviewed companies. This was done to make sure that there have not been any misunderstandings or misinterpretations of the interviews. By doing this, the internal validity was increased.

The reliability can also be divided into two criterions, external reliability and internal reliability (Bryman and Bell, 2011). External reliability evaluates the extent to which the study can be replicated (ibid.). It was difficult to achieve a high external reliability for this report since companies' logistics performance continuously is changing. Another reason why it was difficult to have a high external reliability is since many external parties were involved in the result of the study and depending on which person that was interviewed the results could be different. However to increase the external reliability as much as possible, the process of this report has been thoroughly described and documented, which makes it easier to replicate this study as much as possible.

Internal reliability evaluates where there is more than one observer and that all the observers agree about what they see and hear (Bryman and Bell, 2011). This study has high internal reliability since the master thesis students had close collaboration between each other through the whole study. After each interview, the both students had continuous discussions and talks to agree of what they saw and heard.

3.3.2.2 Validity and reliability for Quantitative study

The validity for a quantitative study is divided into four different criterions, face validity, concurrent validity, construct validity and convergent validity (Bryman and Bell, 2011).

Face validity is the extent to which a measure seems to measure what it is supposed to measure. Face validity can be established by asking other people whether or not the measure looks like it is going to measure what is supposed to do (ibid.). This study has high face validity since a literature study was done to understand how the literature recommended measuring the KPIs that ICA Non Food is focusing on in order to analyse if ICA Non Food is measuring them as the literature recommends. This was done to understand if ICA Non Food is measuring what they are supposed to measure.

Concurrent validity is evaluating if two different measurements that are measuring the same thing have a consistent relationship between each other (Bryman and Bell, 2011). This study has a high concurrent validity since the KPIs that are used in the study are related to each other and some of them are measuring the same thing to increase the concurrent validity. For instance, inventory turnover and inventory days are measuring the same thing, i.e. how much the companies' inventory costs are. A company with a high inventory turnover should therefore have low inventory days. Due to this, this validity of this study increases.

Construct validity is encouraging to deduce hypothesis from a theory that is relevant to the concept (Bryman and Bell, 2011). This study is doing this by before having the interviews, hypothesis was created based on literature that the companies with a lean strategy should have a higher inventory turnover and lower total logistics costs than an agile company.

A case study of convergent validity compares a measure with measures of the same concept developed through other methods. For instance if questionnaire are developed to investigate how much time managers spend on various activities (such as attending meetings, informal discussions etc.) the researches should examine the results validity by going out and follow some managers to observe how much they really spend on various activities (Bryman and Bell, 2011). Due to the time limit of this study, the study will not be convergent valid because the values of the interviewed companies KPIs will not be tested by doing an observation of their logistics performance by calculating for instance their inventory turnover. To make this study convergent valid, this study should have a longer time horizon to make it possible to investigate if the interviewed companies KPI values is correct by for instance going out to their central warehouse or stores and calculating the inventory turnover.

The reliability can be divided into three different factors, stability, internal reliability and inter-observer consistency (Bryman and Bell, 2011). Stability is evaluating if a measure is stable or not over time to be sure that the results relating to the measure do not fluctuate (ibid). The results related to the measures were gathered from the people interviewed and the authors did not measure it by themselves. The interviewed persons collected the data of the KPI values from a database and if the authors would interview someone else in the company about the same KPI values during the same time period, the values would be the same since this person would probably also collect the data from the same database.

Internal reliability evaluates if the indicators that make up the scale are consistent. All the indicators should be related to each other (Bryman and Bell, 2011). This report has a high internal reliability since the KPIs that are benchmarked are related to each other and increases therefore the internal reliability. For example, when evaluating the inventory costs, two indicators are used that are related to each other, i.e. inventory turnover and inventory days. The aim is that the respondents that are scoring high on inventory turnover should score low on inventory days. By having these two measures that are consistent and related to each other, the study can reach a high internal reliability. The same goes for the total logistics costs which is also formulated in two different methods in this study, total logistics costs as a percentage of sales and total logistics costs per sold unit. A company with a high total logistics costs should also have high value for these two other measurements since these are related with the overall KPI total logistics costs.

Inter-observer consistency evaluates the degree to which measurements taken by different observers are similar. For instance when more than one observer is deciding how to categories items it can lead to lack of consistency if their decisions are not similar (Bryman and Bell, 2011). This study had a quiet high inter-observer consistency since the two authors have the same educational background and have worked in many other projects together. The authors started by segmenting the benchmarked companies in Christopher's logistics and competitive advantage matrix (2005) independently and then compared the results with each other. From the comparison it was seen that the two authors had very similar thoughts how to segment the companies.

3.4 Analysis process

The analysis process is divided into two parts. The first part is about analysing how ICA Non Food is measuring and following up their KPIs compared to the literature, by investigating if they are measuring and following up their logistics performance as the literature recommends. This analysis will answer the first research question. The second part of the analysis process is to analyse how the logistics performance looks like in the retail industry by using secondary data from different market surveys and primary data from the interviews with ICA Non Food and other retail companies. This will answer the second research question. Both these research questions will answer the aim of this report which is to increase ICA Non Food's understanding on their current logistics performance and by this making them aware of potential areas of improvement.

To be able to analyse if ICA Non Food is measuring and following up their logistics performance as the literature recommends, this study started by reading articles and books about how companies

should measure and follow up their logistics performance. Furthermore, an empirical study of how ICA Non Food is measuring and following up their logistics performance was done to be able to compare the result with the literature. A literature study was also done about how it is recommended to measure the KPIs that ICA Non Food is focusing on in order to analyse if ICA Non Food is measuring them as the literature recommends. This was done by comparing the literature study of how it is recommended to calculate each of ICA Non Food's selected KPIs with how ICA Non Food was calculating and measuring each of their KPIs. After creating the literature study of how it is recommended to manage logistics performance and KPIs, the recommendations were compared with ICA Non Food's way to manage their logistics performance and KPIs. The empirical data about how ICA Non Food calculates their KPIs, manages them and how they are working with their logistics was gathered by interviewing employees at ICA Non Food with questions based on the literature. The empirical data was also gathered by evaluating the data and the database which ICA Non Food uses to calculate as well as manage their KPIs. The reason for doing the comparisons was to understand if ICA Non Food was covering the critical and most relevant KPIs and aspects when managing their logistics performance.

To be able to analyse how the logistics performance currently look like at ICA Non Food compared to the other benchmarked companies, this second part of analysis was done by using secondary market surveys and data collected from the interviews. The first step of this analysis was to connect the benchmarked companies' market strategy with their logistics strategy in order to understand why their KPI values look like they do. As presented above, segmenting the benchmarked companies in Christopher's logistics and competitive advantage matrix (2005) started after the interviews to understand how they are performing logistically depending on their market strategy. When positioning the companies in Christopher's logistics and competitive advantage matrix, the companies´ logistics strategy was determined. The logistics strategies that are used in this report are the two most known logistics strategies, lean and agile. ICA Non Food and the benchmarked companies were first analysed separately by connecting the company's market strategy, logistics strategy and the KPIs the company is focusing on. This was done to get a better understanding of why these companies are focusing on the KPIs they are focusing on and how that is related to their strategy.

After this, an analysis was done to compare the benchmarked companies' KPI values for inventory turnover and total logistics costs with each other. This analysis was used to compare the different companies KPI values with each other in order to understand how the KPI values are influencing on the company's strategy and how good the company is performing according to the other companies. As described in the chapter *3.2.2.1 Primary data*, not all companies measured the KPIs inventory turnover and total logistics costs. Some companies did measure these KPIs but did not sent the KPI values. Due to this, it was not possible to compare these two KPI values between all companies. This was handled by trying to contact the companies and explain why it is important to get the values to make as good comparison as possible. Some companies sent more information after that and some companies could not send the information due to internal policies. The analysis was done with the companies that sent the information and therefore not all companies are included in the comparison of the KPI values inventory turnover and total logistics costs. Charts were created and used to analyse how the inventory turnover and total logistics costs looked like for the different benchmarked companies and how this was influenced by the logistics strategy, see Figures 9 and 10 below. The companies will then be placed in these two Figures depending on their logistics strategy and KPI value. This will be used to be able to do a visual comparison between the companies and how their logistics strategy is influencing their KPI values and if this is in line with what the literature is describing.

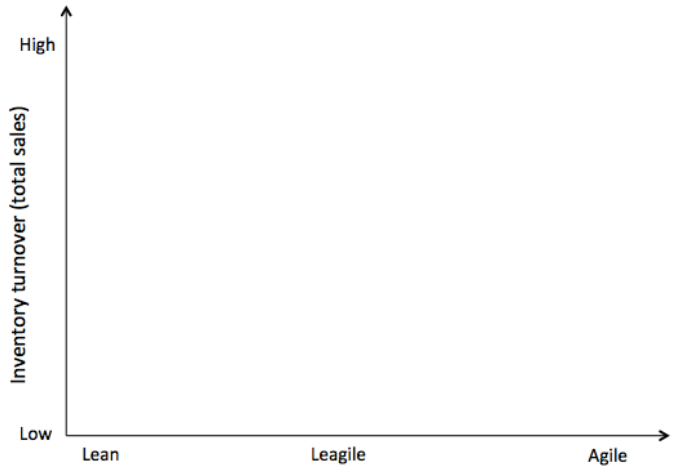


Figure 9 Comparison of the inventory turnover for the benchmarked companies

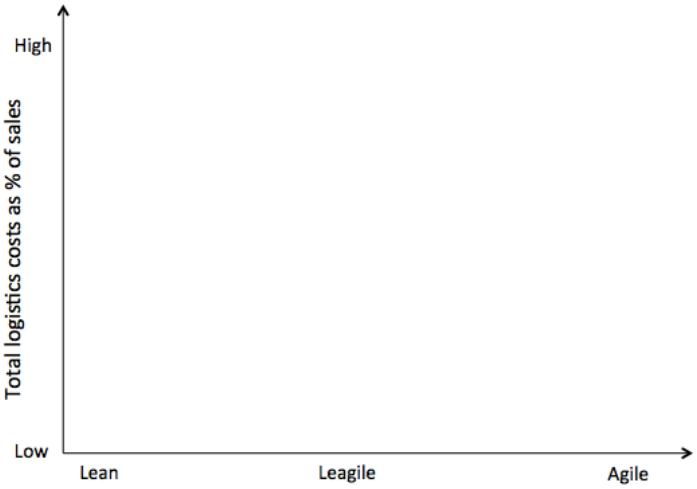


Figure 10 Comparison of the total logistics costs for the benchmarked companies

After the analysis ICA Non Food and the other benchmarked companies will increase their understanding of how their logistics performance is compared to others by reading the analysis chapter in the report. The companies will also increase their understanding about logistics performance and how it should be managed by reading the literature study. All this will also provide them the possibility to see what they are good at and what they can improve.

4. Empirical data

This chapter presents the collected data which has been gathered both from secondary data such as market surveys and primary data which have been gathered from the interviews with ICA Non Food and the other benchmarked companies.

4.1 Data from market surveys about total logistics costs

The total logistics costs can be divided into different cost categories. As illustrated in Figure 11, a survey from 2014 shows an example of how companies are dividing their total logistics costs into different cost categories and how much percentage they represent (Establish Inc, 2014).

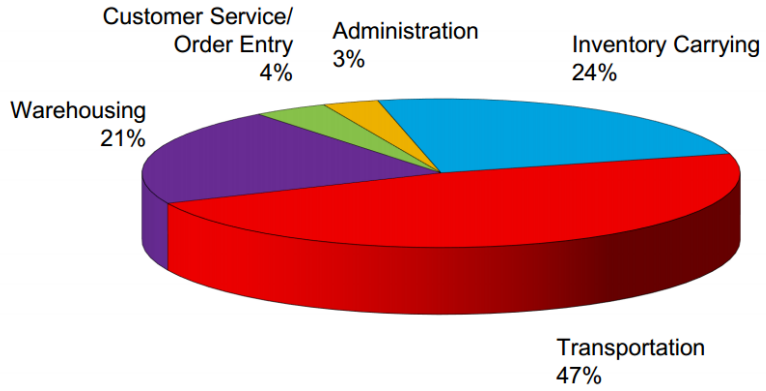


Figure 11 Total logistics costs categories (Establish Inc, 2014)

The categories could differ between companies and as presented in Supply Chain Digest (2006) study where it was analysed what different companies included in their total logistics costs, it was shown that all companies did not include all the categories presented above. All of the respondents included warehouse/distribution costs and 98 percent of the respondent included the outbound transportation costs in their total logistics costs. However the inbound transportation costs was lower, 55 percent of the responded included this. 29 percent included the reverse logistics costs as a part of their total logistics costs and of all the responded only 31 percent included inventory carrying costs. It was not a lot of companies that included the customer service costs as a part of their total logistics costs, only 21 percent did this (Supply Chain Digest, 2006).

Tompkins Supply Chain Consortium has published a report called "The Supply Chain Metrics Report", which is a benchmarking of common supply chain metrics where more than 100 companies from different industries participated in. The conclusion of the report was that the annual logistics costs as a percentage of sales vary depending on industry and company. As seen in Figure 12, for the retail industry this percentage is 10 percent (Tompkins and Ferrell, 2012).

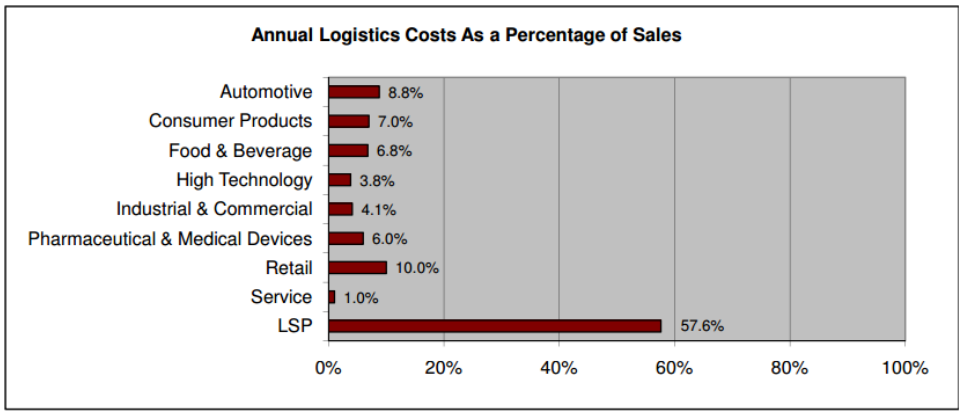


Figure 12 Annual logistics costs as a percentage of sales (Tompkins and Ferrell, 2012).

Another survey that tracks logistics costs, service performance levels and trends for many industries is the Establish Davis Database. The logistics costs for the average company in the database with companies from different industries is 9.34 percent of sales (Establish Inc, 2014). Smaller companies have in general higher logistics costs than bigger companies. Figure 13 show that smaller companies with lower annual sales have higher logistics costs as a percentage of sales. One reason for this is since the size of the retailers affects the preferred quantity. Larger retailers are able to manage larger quantities and do also have a higher possibility to affect the negotiations with the supplier compared to smaller retailers. Being able to affect the contract with the supplier is beneficial to decrease the costs (Van der Laan, 2012).

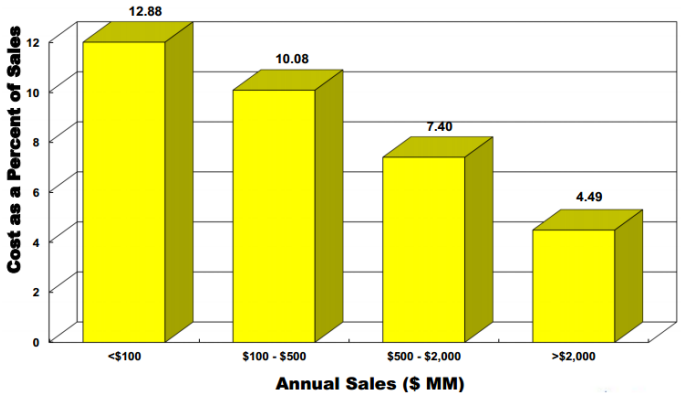


Figure 13 Logistics cost as a percent of sales by annual sales (Establish Inc, 2014).

4.2 Empirical data collected from the interviews

This chapter is presenting the data that was gathered from the interviews with ICA Non Food and the other benchmarked companies. The first part is presenting how ICA Non Food is managing their KPIs and the second part is presenting how they are measuring them. Then all the benchmarked companies market strategies and overall logistics KPIs are presented in the third part. The fourth part is presenting how the benchmarking companies excluding ICA Non Food are measuring inventory turnover and the last part is presenting how they are measuring the total logistics cost.

4.2.1 ICA Non Food´s management of their KPIs

ICA Non Food are using their KPIs with the aim to manage their performance by reviewing them monthly to make sure that they are performing as planned, manage deviations and discover potential areas of improvements. When ICA Non Food detects deviations they manage it by trying to find the root-cause which is done by ICA Non Food reviewing other data such as actual sales, decisions and changes that might not have been considered or considered incorrect when forecasting the KPIs values. The KPIs provide ICA Non Food with information of historical results, i.e. how they have performed, and some information of what is currently happening, i.e. how they are performing, and how it might look like in the future, i.e. how they might perform. Depending on the situation ICA Non Food take actions to manage the deviation with the aim to improve the upcoming values, if possible.

The KPIs ICA Non Food uses have been used for many years and are considered by ICA Non Food to reflect the company's critical success factors since the KPIs once was selected with consideration to the company. ICA Non Food sometimes struggle to take decisions and make changes that are beneficial for all KPIs, since the improvement of one KPI may affect another KPI in a negative way.

The KPIs are used as often as they are measured i.e. monthly but more frequent when it is necessary, for example when certain work of improvements requires it. Nevertheless, the KPIs are mainly managed by the management team who uses it both operationally and strategically. ICA Non Food aims to have employees that all works with the KPIs in mind but there is lack of knowledge if the employees are doing it. Furthermore, the employees' receives the KPI values through weekly, monthly and yearly reports from the management team.

4.2.2 ICA Non Food´s measurement of their KPIs

This chapter will explain how ICA Non Food are measuring the KPIs inventory turnover and total logistics costs and the sub KPIs inventory days and total logistics costs as a percentage of sales and total logistics costs per unit sold.

4.2.2.1 Inventory turnover

ICA Non Food is calculating inventory turnover in three different levels. However, the formula for the calculation is the same for all these three levels. ICA Non Food is calculating inventory turnover by dividing COGS (costs of goods sold) with rolling inventory.

$$Inventory\ turnover = COGS \div Rolling\ Inventory$$

COGS is calculated by summarizing the net sales for last 12 months and then subtract this value with the gross profit for the last 12 months. Summarizing COGS for 12 months, measures therefore the inventory turnover per year. The inventory is calculated as a rolling inventory which is calculated by adding together the last 12 months inventory values and divide it by 12.

The three different levels ICA Non Food is calculating inventory turnover are:

- The total sale
- Single product categories for central warehouse/store
- For MAXI Stormarknad stores / central warehouse

ICA Non Food is calculating inventory turnover in these three different levels to be able to have an overall view of the inventory turnover but also to know how the inventory turnover differs between the product categories and how the inventory turnover differs between the MAXI Stormarknad stores and the central warehouse. In the MAXI Stormarknad stores the non-food products are owned by ICA Non Food and not the ICA merchant which the food products are. It is important to measure inventory turnover per product category in order to have the possibility to know which product category that have a low inventory turnover compared to the other categories with regards to the products categories type of products for example if they are slow or fast moving products, which affect the inventory turnover. By knowing how it differs, ICA Non Food can more easily identify which category that should be improved. ICA Non Food is also separating inventory turnover in MAXI Stormarknad stores and central warehouse to know how the inventory turnover is in these two places because ICA Non Food have different goals how much the inventory turnover should be depending on where the inventory is. ICA Non Food can control the inventory more in the central warehouse because they are deciding how fast they are replacing the inventory while in the stores it is the customers that decide this. Furthermore, the inventory in the central warehouse is more flexible than in the stores since the products always have to be available at the stores compared to the warehouse that have more time for planning since they receive the orders a certain time before it have to be sent. Due to this, the inventory turnover in the central warehouse is higher than in MAXI Stormarknad's stores.

4.2.2.2 Inventory days

ICA Non Food uses three methods to calculate their inventory days due to different demands from different departments within ICA Sweden, although all measurements are calculated on a monthly basis. The most common method to measure the inventory days within ICA Non Food is to measure the inventory for each month divided by the rolling sales each day for the same month.

$$Days\ in\ inventory_1 = Inventory \div Rolling\ Sales$$

The sales always include the net sales to the consumers at Maxi ICA Stormarknader as well as the net sales to the other stores, ICA Kvantum, ICA Nära and ICA Supermarket. The inventories always include the inventory value at the central warehouse as well as all of Maxi ICA Stormarknaders' inventory values. The inventory is calculated by using the inventory value at the end of the month and the reason for not using average inventory for the month is since the inventory value is argued by ICA

Non Food to not fluctuate enough to make a big difference. After calculating the inventory value the value is multiplied with 365 in order to calculate the days in inventory in years. This value is then divided by the rolling sales. The rolling sales are the average of rolling sales per day for each month.

The second method for ICA Non Food to calculate the inventory days only differs from the one above described when it comes to the calculation of the inventory. Instead of using the inventory value for each month, a rolling value is instead used to cover variation and the rolling value is calculated by adding together the last 12 months inventory values and divides it by 12 which is done each month.

$$Days\ in\ inventory_2 = Rolling\ Inventory \div Rolling\ Sales$$

In the third method ICA Non Food is using to calculate the days in inventory, is to use COGS instead of sales, otherwise it is the same as method two.

$$Days\ in\ inventory_3 = Rolling\ Inventory \div COGS \rightarrow 365 \div Inventory\ turnover$$

As seen in the formula above, the inventory day is calculated by dividing 365 with the inventory turnover.

4.2.2.3 Total logistics cost

The KPI total logistics costs represent the cost that arise from the time that the products arrive to ICA Non Food's central warehouse to the time when it arrives to the stores. The costs that arises are divided into the logistics cost categories dispatching, storing, overhead cost and transportation costs. These categories consist of different costs items such as storing, receipt of goods, operational support, internal and external transports and loading and unloading products.

The reason why ICA Non Food is not including the inbound logistics cost, i.e. transportation costs from suppliers to ICA Non Food's central warehouse in the total logistics costs is since they have different agreements for this transportation with different suppliers. The transportation costs from suppliers to central warehouse are sometimes paid by ICA Non Food and sometimes paid by the suppliers. Due to variation, the inbound logistics costs varies and the transportation costs from the suppliers that ICA Non Food are paying are not included in their total logistics costs but are instead being included in the purchasing price as well.

ICA Non Food's total logistics cost is calculated by ICA Sweden and is reported monthly to ICA Non Food. The reason why ICA Sweden is calculating ICA Non Food's total logistics cost is since almost all of ICA Non Food's logistics costs are shared with other parts of ICA Sweden such as the cost item internal transports. The data received from ICA Sweden includes the division of the total logistics costs to the cost categories as well as costs items. Some of these cost items are directly connected with some of ICA Non Food's product categories but other cost items have to be divided to different product categories by the use of different key ratios. The reason for using key ratios is since some cost items cannot directly be connected with any product category. The logistic costs that only relates to ICA Non Food are not shared with other parts of ICA Sweden but it is still ICA Sweden that calculates it.

When different departments at ICA Non Food makes decisions and changes with the aim to decrease a logistics cost item or category, the company consider how it may affect other costs or cost items but there are no established way to work that covers how the total logistics costs could be considered and improved.

4.2.2.4 Total logistics cost as a percentage of sales

ICA Noon Food is using the logistics metrics total logistics cost as a percentage of sales as a KPI to analyse how much of their sales are invested in logistics costs. Because ICA Non Food is delivering their products to both MAXI Stormarknad and other companies such as ICA Kvantum, ICA Nära and

ICA Supermarket the sales comes from the wholesales that ICA Non Food gains from the different stores.

ICA Non Food measures the total logistics costs as a percentage of wholesales month by month as illustrated below, but also by using a rolling value for 12 months. These values do not differ much but the latter is the value that the company is using most and will therefore be the value that will be focused on when performing the benchmarking.

$$Total\ logisitcs\ cost\ as\ a\ percentage\ of\ sales = Total\ logistics\ cost\ \div Sales$$

4.2.2.5 Total logistics cost per unit sold

ICA Non Food measures their total logistics costs per unit sold by dividing the rolling total logistics costs by the total number of items sold.

$$Total\ logistics\ cost\ per\ unit\ sold = Rolling\ total\ logistics\ cost\ \div Number\ of\ units\ sold$$

The KPI is not used as their primary measurement of total logistics costs and is not used continuously. This KPI is however sometimes used to increase the understanding of how much logistics costs represent for each product and how it differs between products. An example of this is that clunky and heavy products of high volume such as grills have a higher total logistics costs per unit compared to widely and light weighted products of low volume such as tissues.

4.2.3 ICA Non Food´s and the benchmarked companies´ strategies and main logistics KPIs

This chapter is being divided into six parts. Each of the parts is presenting a specific company's market strategy and their main logistics KPIs.

4.2.3.1 ICA Non Food

ICA Non Food's goal is to offer a wide variety of products with good quality and good prices. The customer service is experienced as a critical success factor by the company since it according to them affects sales. ICA Group's vision is to make every day a little easier for the customers, why it is important for the company to understand their customers' needs and meet them. ICA Non Food is reaching a broad target of customers due to their high product variety within different price ranges, from basic to more exclusive. The reason why they offer products within different price ranges is since they want to reach a broad customer segment with products that the customers wants and are willing to pay for. The company is both offering products with short life cycles such as seasonal products and products with longer life cycle such as basic products.

The overall logistics KPIs ICA Non Food is using to measure their logistics performance are as presented before, inventory turnover, total logistics costs and service ratio. All these KPIs are ICA Non Food measuring on a monthly basis. Since ICA Non Food is a part of ICA Sweden they divide their total logistics costs with ICA Sweden.

ICA Non Food does not believe that the KPIs they have today are connected to their market strategy. The company believes that many companies in the retail industry are focusing on these KPIs regardless of what type of strategy they have.

4.2.3.2 Company A

Company A's goal according to themselves is to be the number one when it comes to a wide product portfolio, high reputation and service. Company A's market strategy is to approach a broad target of customers by offering a wide range of products within different price segments and product type, from basic to exclusive and functional to fashion. The reason for this is to be able to sell and be attractive to a wide range of customers with different needs that makes them willing to pay different amount of money for the same type of product such as a perfume. The company is reaching a high customer service by having shop assistants in the stores to help their customer when needed. To increase the

customer service even further, it is important for company A that they have their products available in the stores for their customers as well.

The overall KPIs used to measure their logistics performance are inventory turnover, customer complaints, sales spin and delivery accuracy to their stores. The reason for using the selected KPIs is since company A values them as usable and that these KPIs are commonly used by other companies in the retail industry. In the future, the company is aiming to also measure other KPIs such as total logistics costs and product availability in their stores to decrease the total logistics costs even further and at the same time increase the customer service. The company has just started with measuring the total logistics costs and has a lot to improve while the product availability in stores is something they will measure in the future and has not started measuring yet. According to company A, their selected KPIs are not connected with the company's market strategy.

4.2.3.3 Company B

Company B's goal described by themselves is to offer enjoyment for the customers visiting their stores and value for the money they spend. The company's market strategy is to reach out to a broad audience by offering a wide range of products within different price segments depending on the products quality and brand but all products should be worth its price to meet their goal. The company is both offering products with short life cycles such as seasonal products and products with longer life cycles such as basic products. The products offered are to a certain degree the same in their stores but there is also a customization of the products offered depending on the local market expectations. Some stores have more low costs products while other stores located somewhere else have more premium products. This depends on what type of customers that are visiting the stores.

The overall logistics KPIs company B focuses on are total logistics cost as a percentage of sales, customer satisfaction and the ratio between all the employees hours worked and sales. All these three KPIs are being measured on a monthly basis. The company wants in the future to segment their products in more detailed subcategories to have the possibility to know more what is happening on the cost side in a more detailed way. In the long term, the company wants to measure how much the total logistics costs is for a specific article, from raw material until the product is delivered to the customer, i.e. the whole supply chain.

Company B's overall logistics KPIs are according to company B being influenced by their market strategy, i.e. the importance of the customer satisfaction and costs do influence which KPIs the company focuses on.

4.2.3.4 Company C

Company C's goal is according to themselves to offer products to low prices for their customers since they want to offer attractive products to the lowest price in the market. Company C's strategy is to reach a broad customer target by offer a wide range of products in different product categories. The company is both offering products with short life cycles such as seasonal products and products with longer life cycles such as basic products. Even if the company is focusing on offering products to a low price, they do not want to deliver products with bad quality. The company's goal does not differ between the company's different product categories. They want to offer low costs products in all product categories. The company is able to offer low costs products because the company is focusing on purchasing products with lowest possible prices from their suppliers. This is possible due to their flexible assortment and volume required as well as flexible delivery time. Company C is also able to offer products to a low price by keeping their costs low due to their focus on eliminating waste, reducing inventories as much as possible in the warehouse and store.

The overall logistics KPIs company C is focusing on, can be divided between the logistics department and purchasing department. The logistics department is mostly focusing on two KPIs, how many inbound pallets & order lines they have per day and job assignments per hour worked. The first KPI, the amount inbounds pallets & order lines is important for the company to be able to create and plan

the employees work schedule. This KPI will influence the other KPI, jobs assignments per hour worked. Other KPIs that the logistics department is measuring more rarely are the service level and the stock level which are being measured weekly. The purchasing department is also focusing on two KPIs, the purchasing price and the inventory turnover. The purchasing price is important for company C since it affects the possibility to offer products that are worth it's price and responds to the customers´ demand. Company C believes that their market strategy is influencing which KPIs the company is focusing on. If the company would not focus so much on low costs, other KPIs than the used ones would be useful.

4.2.3.5 Company D

Company D's goal is according to themselves to offer customized products at a good price. It is very important for company D to offer products with quality and design. All products that company D is offering have good quality and design but all the product categories are divided into three different price segments where the most expensive ones have higher quality than products in the other two price segments. The company is both offering products with short life cycles such as seasonal products and products with longer life cycles such as basic products. The company wants to reach a wider customer segment but today the most of the company's customers are women at the age 40-60 years. The company has done some investments to reach out to younger customers and this starts to show results by also using e-commerce as a sales point.

The overall logistics KPIs company D is focusing on are total logistics costs, total logistics costs as a percentage of sales, inventory turnover and the fill rate. All these four KPIs are being measured on a monthly basis. Company D believes that the KPIs that they are using are well connected to their market strategy. With a different strategy it may be other KPI values that are more important for the company to measure but company D believes that all companies are measuring the overall total logistics costs regardless their market strategy.

4.2.3.6 Company E

Company E's goal is according to themselves to offer products at as low prices as possible. Their market strategy to reach their goal is to offer some degree of adjusting products to their customers to be able to reach out to a broad range of customer segment. The company cannot offer both too customized products and low prices which is the reason why they have some degree of customization and not a high degree. All the products that the company is offering have affordable prices. However, some products have more expensive material than others and do therefore have higher prices. The company is both offering products with short life cycles such as seasonal products and products with longer life cycles such as basic products. However, the majority of company E's products have long life cycles.

Within logistics company E is working with five performance areas which are cost, availability, quality, people and sustainability. These different areas have KPIs that they are measuring and the main KPIs are total logistics costs, service level, fill rate, inventory turnover, and CO_2 emissions/transportation. There are no plans to implement new KPIs, instead company E are focusing on the ones they have with the aim to make sure that they cover their logistics performance.

4.2.4 The benchmarked companies´ measurement of inventory turnover

This chapter will explain how the benchmarked companies are measuring the KPI inventory turnover.

4.2.4.1 Company A

Company A's formula for calculating inventory turnover is presented below.

$$Inventory\ turnover = COGS \div Average\ Inventory\ value$$

As seen in the formula company A is using COGS divided with the average inventory value to calculate the inventory turnover. The average inventory value is the average inventory for a month.

This is calculated by picking out the inventory value once a week from their database and then summarizing these values for four weeks and then divide it with four to get an average in months. The values are based on weekly values since company A then feels that the average value illustrates a picture of reality by covering the inventory variation.

4.2.4.2 Company B

The inventory turnover is one of the KPIs that Company B is focusing on. Company B is calculating inventory turnover by dividing cost of goods sold by the average inventory value, the formula is presented below.

$$Inventory\ turnover = COGS \div Average\ Inventory\ value$$

The average inventory values is calculated by measuring the inventory value every day within a month and then divide the values with 30 to get the average inventory value for the month. The inventory value for a day is gathered from the company's database and by using daily values company B feels that the average value illustrates a true picture of reality by covering the inventory variation.

4.2.4.3 Company C

Company C is calculating inventory turnover by dividing cost of goods sold by the average inventory value, the formula is presented below.

$$Inventory\ turnover = COGS \div Average\ Inventory\ value$$

The average inventory value is the average inventory for a month. It is calculated by adding together the inbound and outbound inventory value for each month and then dividing it with two. The inbound and outbound inventory values are received from company C's databases. By using inbound and outbound values company C feels that the average value illustrates a true picture of reality by covering the inventory variation.

4.2.4.4 Company D

Company D is calculating inventory turnover by dividing sales with the inventory value, the formula is presented below.

$$Inventory\ turnover = Sales\ \div Inventory\ value$$

The inventory value is the outbound value for a month and this value is then representing the inventory value for the month. This value is the company picking out from their database. Company D is using the outbound value since they feel that this value illustrates a true picture of reality because they do not feel that the inventory is fluctuating during the month.

4.2.4.5 Company E

Company E calculates inventory turnover by dividing sales by the average inventory, the formula is presented below.

$$Inventory\ turnover = Sales \div Average\ Inventory\ value$$

The average inventory value is the average inventory for a month. It is calculated by adding together the inbound and outbound inventory value for the period and then dividing it with two. The inbound and outbound values are received from company E's data bases and by using inbound and outbound values company E feels that the average value illustrates a true picture of reality by covering the inventory variation.

4.2.5 The benchmarked companies´ measurement of total logistics cost

This chapter is explaining how the benchmarked companies are calculating the KPI total logistics cost.

4.2.5.1 Company A

The total logistics cost for company A starts from the purchasing costs and ends when the products is on the shelves in the stores. The cost components that include in total logistics costs are; purchasing, inbound transportation, warehouse, outbound transportation and store logistics costs.

The cost component purchasing includes the purchasing price from the supplier, imports etc. The inbound logistics cost is divided into two different cost components. The first component is the transportation cost for their private label products where company A is paying for the transportation from the supplier to the central warehouse. The other part of the inbound logistics costs is for the company's other brands where the inbound transportation cost is included in the purchasing price instead. By doing this, both the transportation that company A is paying for and the transportation costs that is included in the purchasing price are included in this inbound transportation costs.

Everything that is happening in the central warehouse is included in the warehouse costs. Company A is offering products that require many actions in the warehouse such as finishing the most important products to the stores. All company A's products are in one way or another going through the central warehouse. The company's private labels are being stored in the central warehouse while the other brands instead are being cross docked there and the logistics costs for this warehousing is included in the warehousing costs.

The outbound logistics are the transportation costs out from the central warehouse and the cross docking central to the stores around Sweden.

The last cost component in total logistics costs is the store logistics. Different activities that are being made here are ironing, putting on alarm equipment on the goods and the personal costs until the goods are on the shelves. This is something new the company has started with. They have chosen seven different stores around the country where they go out and measure the store logistics costs. The store logistics costs for these stores are then representing the store logistics costs for the other stores around the country.

4.2.5.2 Company B

The total logistics costs for company B starts with the inbound transportation from the suppliers that company B is paying for. Company B pays for around 50 percentage of the inbound transportation while the other 50 percentage of the inbound transportation are instead included in the purchasing price. The company wants to manage the inbound transportation from the suppliers by themselves as much as possible to get a better overview of the total logistics costs.

The warehousing costs are also included in the total logistics costs. Everything that is happening in the central warehouse is included in the warehousing costs. Other parts that are included in total logistics costs are the purchasing department, customer service department and the internal service department that are related to logistics. The outbound logistics is the last part included in total logistics costs and is the transportation out from the central warehouse until the products are being placed at the stores' stock. Company B's plan in the future is to calculate the store logistics as well, i.e. calculate the logistics costs from the stores' stock until the products are being placed on the shelves in the store.

Company B has worked continuously with improving their total logistics costs and in the last years and the company have reduced their total logistics costs a lot.

4.2.5.3 Company C
Company C value total logistics costs as a less important performance measure and is not using the KPI due to the company´s strategy and structure.

4.2.5.4 Company D
The total logistics costs for company D begins with the import shipping from supplier to the central warehouse until the products have reached the stores. Everything in between such as warehousing, storage and inventory management also includes in the total logistics costs. Company D is dividing their total logistics costs into three different parts; inbound logistics, warehousing costs and outbound logistics costs.

The inbound logistics is the transportation from the suppliers to the central warehouse. Company D are paying and are responsible for around 98 percentages of the inbound logistics while 2 percentages are instead included in the purchasing price and will therefore not be included in the inbound logistics.

The warehousing costs can be divided into three different cost components.
- The costs in to the central warehouse from the trucks.
- The costs for warehousing (not the product value)
- The costs for picking and packing the products for the way out from the central warehouse.

The outbound logistics is all the transportation costs from the central warehouse to the stores. All the products are going through the central warehouse and therefore the total logistics cost is the same for all the products.

4.2.5.5 Company E
Company E includes the costs from the suppliers loading platform to the company E's shelves in the stores or to the end customers' home address in the case of home delivery. The cost components that are included in total logistics costs are costs for transports, customs and environmental fees, total handling costs, administration, space and calculated inventory costs.

The transport costs include all transports to and from the suppliers, company E´s warehouses, their consolidation points, their warehouses as well as to and from the end customers. Total handling costs includes costs for the personnel responsible all the physical management of products as well as the costs for the machines, equipment etc. required to handle the products. Furthermore, costs for damages arise when handling the products are also included in the total handling costs. The administration cost includes the costs for the personnel working administrative within logistics and the costs for the IT required managing the administration for logistics. The costs component space includes costs for the space that logistics requires such as rent and maintenance of the warehouses, depreciation and cost for the energy for the warehouses and janitors. The space component also includes the costs that arise when unplanned waiting cost arises along the products flow from suppliers to the warehouses or to the end customers (demurrage/detention paid to carriers). The calculated inventory cost is the calculated tied up capital in the company's inventories which includes the value for all the products in their inventory and on their way to and from the inventory. The cost component also includes the delivery cost such as freight, customs and other home-taking costs.

4.2.6 The benchmarked companies´ measurement of total logistics cost as a percent of sales
This chapter is explaining how the benchmarked companies are calculating the KPI total logistics cost as a percentage of sales.

4.2.6.1 Company A
Total logistics cost as a percentage of sales is not a KPI that company A is measuring. To be able to compare this value with the other benchmarked companies, the total logistics costs as a percentage of sales for company A is calculated by the formula below:

$$Total\ logistics\ cost\ as\ a\ percentage\ of\ sales = Total\ logistics\ cost\ \div Sales$$

4.2.6.2 Company B

Total logistics cost as a percentage of sales is company B using a lot. This KPI is measured and followed every month to be able to know how much of the company's sales are invested in logistics costs. The formula for the KPI is presented below.

$$Total\ logistics\ cost\ as\ a\ percentage\ of\ sales = Total\ logistics\ cost\ \div Sales$$

4.2.6.3 Company C

Company C does not measure the KPI total logistics cost as presented in chapter *4.2.5.3 Company C*. By not measuring the total logistics costs the company cannot then measure the total logistics costs as a percentage of sales since this KPI is dependent on the total logistics costs.

4.2.6.4 Company D

The total logistics cost is a measurement that company D is using as a KPI. How the company is calculating this KPI is presented below.

$$Total\ logistics\ cost\ as\ a\ percentage\ of\ sales = Total\ logistics\ cost\ \div Sales$$

4.2.6.5 Company E

The total logistics cost is a measurement that company E is using as a KPI. How the company is calculating this KPI is presented below.

$$Total\ logistics\ cost\ as\ a\ percentage\ of\ sales = Total\ logistics\ cost\ \div Sales$$

5. Analysis

This chapter will concern the analysis of the report. The analysis will be made in this chapter by analysing the empirical data from chapter 4 Empirical Data with chapter 2 Literature Review. The first part is analysing how ICA Non Food is managing their KPIs by examine if this is in line what the literature is recommending. The second part is analysing ICA Non Food's measurements of their logistics KPIs by examine if they are doing as the literature is recommending. The last part of this chapter is analysing how the logistics performance currently is looking at ICA Non Food and the other benchmarked companies, which will answer research question two.

5.1 ICA Non Food´s management of their KPIs

ICA Non Food is using their logistics KPIs in order to manage and understand their logistics performance, which is in accordance with Rehs (2015) recommendation. The KPIs ICA Non Food uses have been used for a while and since there is no active continues reflection whether the selected KPIs are optimal ones for the company they do not follow Parmenter's (2010) recommendation to continually consider the KPIs. This can lead to that the company will not have KPIs that are reflecting the company in today's situation. The market, company's strategy or structure has maybe changed during the years, which can result in that the KPIs that they had before, are not reflecting the company today. It is therefore recommended that the company should have an active continues reflection whether the selected KPIs are optimal ones for the company.

The KPIs that ICA Non Food uses are a mixture of a soft measurement, which is the service ratio, and hard measurements, which are the inventory turnover and total logistics costs. Using both hard and soft measurements like this is recommended by Vitasek and Maylet (2011) since it provides companies with a true picture of logistics efficiency. The reason for this is since only using one type of these measurements will not cover all dimensions of the companies' logistics performance. Although, the data values of ICA Non Food's soft measurement is not analysed and benchmarked in this report as described in chapter *1.4 Limitations.* According to Heaver and Henriksson (1994) many companies are only using hard measures when comparing logistics performance since these measures are typically impersonal, accurate, easy and inexpensive to collect. It is although recommended to use both measurements since the measures complement each other by covering different dimensions of logistics performance (Heaver and Henriksson, 1994).

The KPIs ICA Non Food uses covers both internal measurements of efficiency by the use of the KPIs inventory turnover and total logistics costs and external effectiveness by the use of the KPI service ratio. Managing both types of measurements could be beneficial for ICA Non Food since it according to Andersson, Aronsson and Storhagen (1989) helps companies to select the most important type of measurement for their logistics performance. ICA Non Food believes that their KPIs reflect what the company is focusing on since the KPIs once have been selected with concerns to the company. Furthermore, the common conflicting goals between efficiency and effectiveness (Andersson, Aronsson and Storhagen, 1989) is something that ICA Non Food experiences. The reason for this is since ICA Non Food thinks that it is hard to decide what investments they should do in order to find the optimal solution without affecting any measurements in a negative way.

According to Reh (2015) KPIs should provide companies with information of how they are performing, if they are on the right track and the activities needed. The KPIs ICA Non Food uses are providing them with this information to some extent since they experience that they get information of how it have went and some information of what is happening, are going to happen and the activities needed. Although, according to ICA Non Food the employees require a deeper understanding of the underlying reasons for their KPI values to know which activities are needed to change the KPI values.

Parmenter's (2010) recommendation of having employees working with the KPIs in mind is something that the employees at ICA Non Food might do since ICA Non Food desires it but due to

their unawareness of how their employees actually work, it could not be stated if they do as Parmenter (2010) recommends.

ICA Non Food's logistic management team is continuously working with their KPIs. This might have a positive effect on ICA Non Food´s management of their KPIs since Parmemter (2010) argues that a high involvement from the management team increases the use of KPIs throughout rest of the company, which can increase the positive effect of the KPIs. To reach the use, involvement and understanding Parmenter (2010) argues that it requires that the KPIs are available for the employees. Since ICA Non Food's employees only gets the KPI values through reports on a weekly, monthly or yearly basis this can result in a negative effect on the use since a low degree of access can limit the use of the KPIs and decrease the understanding which can decrease the use of them (Parmenter, 2010). Nevertheless, the employees at ICA Non Food using the KPIs use them as often as they are measured i.e. monthly and according to Cbsolution (2011) the frequency the KPIs are used should be connected with the frequency they are measured. Using and measuring KPIs with a weekly frequency is although recommended as ideal and up to 30 days is acceptable but more often should be avoided since it decreases the possibility to discover risks, deviation and receive usable feedback. Furthermore, a low frequency could also indicate that the measurement is of low importance (Cbsolution.net, 2011). However, it has to be noticed that not all KPIs have to be measured as often as other KPIs. For some KPIs it is not beneficial to measure the value every day or week since the company will still not work with the KPI that often (ibid.). ICA Non Food is measuring their main KPIs every month as described above and this is according to them enough since the company do not have time or do not prioritize to measure and work with the KPIs more often. Even if they would do that, they would not have time to analyse the data and be able to act upon the deviations so often.

ICA Non Food is as presented in chapter *1. Introduction* focusing on three main KPIs, inventory turnover, total logistics costs and service level. According to Parmenter (2010) a company should have a small number of KPIs to be able to focus on these KPIs to increase the KPIs quality and increase the focus on improving these KPIs. A too high number of KPIs makes it more difficult for the company to focus on all the KPIs which will decrease the quality of the KPIs (Parmenter, 2010). It is therefore good that ICA Non Food is focusing on a small number of KPIs to be able to really focusing on these and improve them.

5.2 ICA Non Food´s measurement of their KPIs

This chapter is divided into two parts which are the two main KPIs ICA Non Food is focusing on, inventory turnover and total logistics costs and their sub KPIs; inventory days, total logistics costs as a percentage of sales and total logistics cots per unit sold. Each part is analysing how the KPI is measured and if ICA Non Food's way of measuring this KPI is in line with what the literature is recommending.

5.2.1 Inventory turnover

ICA Non Food's formula of inventory turnover is the same as the literature recommends as shown below.

$$Inventory\ turnover = COGS\ (cost\ of\ goods\ sold) \div Rolling\ inventory$$

There are different ways to calculate the inventory value as seen in *2.2.2.1 Inventory turnover.* According to Bergman, Knight and Case (2006) the inventory value should be calculated as an average each month by measuring the beginning inventory value and ending inventory value and sum these two values and then divide it by two. On the other side, Bailey (2013) suggests to calculate the average inventory by measuring the beginning inventory or ending inventory each month for the last 12 months and then summarize these values and then divide it by 12. These two ways of calculating the inventory are both calculating an average value in order to get a more accurate value of the inventory value. ICA Non Food calculates their rolling inventory value in the same way as Bailey (2013) describes, i.e. using one value for each month for the last 12 months, then adding together these

values and then divide it by 12. By calculating it like Bailey (2013) they feel that they cover the fluctuations in their inventories and they argue that it would not make much difference by calculating it like Bergman, Knight and Case (2006) recommends. However, it is important that ICA Non Food make sure that they do not have fluctuations that Bailey´s method (2013) does not cover. For example, if the inventory value fluctuates depending on which day during the month the inventory is measured, then it is not covered by Bailey's method since this method only uses one value a certain day representing the whole month. In the case of these fluctuations, ICA Non Food should instead use Bergman, Knight and Case (2006) formula for calculating the average inventory value.

The reason for ICA Non Food to measure the inventory turnover for each product category is as recommended by Hou (2013) since different product categories have different inventory turns. By using a single inventory turnover ratio for all inventories, this will give the company a misleading ratio and will not help the company understand which product category that has the lowest or highest inventory turnover and how it can be improved. The overall inventory ratio is a ratio that the management team at ICA Sweden wants to have to get an overview how good inventory turnover ICA Non Food has in overall. The overall inventory ratio is also good to use to get an overview how good the company is compared to competitors in terms of inventory turnover but to get a more detailed understanding and understand which product categories that are not performing good and can be improved, the inventory turnover have then to be measured for each product category (Hou, 2013).

5.2.1.1 Inventory days

The first method to calculate inventory days, that ICA Non Food uses the most, differs the most from the literature since it does not use average inventory or COGS (cost of goods sold). Even if it is argued that it is important to use the average inventory to cover fluctuations, ICA Non Food does not use this. The reason for not using average inventory is since ICA Non Food feels that they do not have enough fluctuations in their inventories, which would make much difference by calculating the average inventory for this KPI.

The reason for not using COGS in the first method is since the ICA Group has a standard to calculate inventory days with sales instead of COGS. ICA Non Food should therefore report the inventory days with sales instead of COGS to the ICA Group. This is something ICA Non Food cannot affect. However, it is according to Bergman, Knight and Cases (2006), Averkamp (n.d.) and Bailey (2013) recommended to use COGS to get a correct result since inventory is the cost of goods in hand and is reported to the balance sheet as a cost (Averkamp, n.d). By using the sales data, the value will include the profit margins the company has which will reduce the inventory days and will give a product type lower inventory days and higher inventory turnover than it actually has because the company is including profit margins on their products. This gives a misleading value on the company's inventory days and inventory turnover.

ICA Non Food's second method to measure inventory days uses a rolling inventory by adding together the inventory value for 12 months and then divides it with 12 to get the average inventory value for a month during the whole year. Which is the same method as Baily (2013) describes. The second method is dividing the rolling inventory with the sales. Using sales is not recommended by the literature as argued above. The third method is also using a rolling inventory as the second method but this method is however using COGS instead of sales, which is recommended by the literature. Therefore, the third method is in accordance with what the literature recommends and this method will therefore give the company the most accurate picture of how many days the products are in the inventory in average.

5.2.2 Total logistics cost

ICA Non Food is dividing their logistics cost into different categories which the authors Sople (2007), ESCAP (2003). Hartman and Media (2015), Björnland, Persson and Virum (2003) and Lambert, Stock and Ellram, (1998) are also recommending companies to do. ICA Non Food's cost categories have differences compared to the most common ones presented in the literature, which are inbound, process

and outbound logistics (Sople, 2010). This is however according to Hartman and Media (2015) accepted, since the key is to understand what is included within the categories.

As written by ESCAP (2003), it is important to consider total logistics costs when making changes that aim to improve one or more of the logistics costs categories. This is something that ICA Non Food is doing since they consider not only the cost components they are trying to improve but instead how the improvement of this cost component will affect the total logistics costs. This was however according to ICA Non Food something that the company would like to focus more on to be able to decrease the total logistics costs even more. By taking into consideration all the costs components in total logistics costs, the whole total logistics costs will decrease in a bigger scale compared to when decreasing one cost component without taking into consideration how this change will affect the whole total logistics costs. This change will maybe increase the total logistics costs since when decreasing one cost component another component will maybe increase.

According to Sople (2007) total logistics costs can be broken-up into three categories, inbound, process and outbound logistics as mentioned above. As presented in *4.2.2.3 Total logistics costs,* inbound logistics costs is not being included in ICA Non Food's total logistics costs due to different agreements with suppliers. The inbound logistics costs are instead added in the purchasing price. Since ICA Non Food is not including inbound logistics costs in their total logistics costs values they have according to Sople a misleading total logistics costs. But as presented from Supply Chain Digest's (2006) study, 55 percentages of the companies included the inbound logistics costs in their total logistics costs. This means that 45 percentages of the companies are doing, as ICA Non Food even if this costs category should be included in total logistics costs. One reason for this can be that many companies do not own the transportation from their suppliers to their warehouse and the inbound transportation is instead included in the purchasing price since the suppliers are paying for that transportation. This was also the reason for ICA Non Food. If ICA Non Food wants to have a more detailed understanding and a more overall picture of their total logistics costs they should try to manage their inbound transportation or at least include it in the total logistics costs to know how much their total logistics costs really is and try to reduce the costs as much as possible.

5.2.3.1 Total logistics cost as a percentage of sales

As presented in chapter *4.2.2.3 Total logistics cost* ICA Non Food is formulating their total logistics costs in relation to sales to be able to analyse how much of their sales are invested in logistics costs. This is also something that is demonstrated to be important according to Oskarsson, Aronsson and Ekdahl (2006). However, one factor that has to be considered when calculating the total logistics costs as a percentage of sales that can make the value misleading, is if two similar companies' total logistics costs as a percentage of sales are compared with each other, but one of the companies is better on branding themselves than the other. This can result in that company one will get a higher profit margin which will decrease the total logistics costs as a percentage of sales for this company since the sales will increase. This can seem like company one has lower total logistics costs but in reality, the companies have the same total logistics costs but company one has only higher sales which will decrease the total logistics costs as a percentage of sales.

By using the logistics metrics, total logistics costs as a percentage of sales, it will become possible to compare total logistics costs between companies since the logistics costs differs a lot depending on different factors such as the company's size and industry. A large company with high sales will have higher total logistics costs than a small company with low sales. Only comparing the total logistics costs for these two companies directly would not be an accurate comparison. By instead comparing the total logistics costs as a percentage of sales it would make it possible to compare companies with different sizes since their size will be taken into consider when calculating how large their total logistics are.

5.2.3.2 Total logistics cost per sold unit

This is a KPI that ICA Non Food has started measuring in the beginning of this year to be able to see how much the total logistics costs represents for each product. ICA Non Food is however not focusing on this KPI as much as they are focusing on the total logistics costs as a percentage of sales. This KPI is very suitable to use when comparing logistics costs according to Supply Chain Digest (2006). The reason for this is since the values will then be compared without being affected in changes in sales prices. If ICA Non Food wants to benchmark their total logistics costs more in the future, this KPI is suitable to benchmark since it is not affected by changing in sales price and not much in volumes which will make the comparison more accurate (Supply Chain Digest, 2006).

5.3 The benchmarked companies' logistics performance

In this chapter ICA Non Food's and the other benchmarked companies' logistics performance is going to be analysed. The chapter is divided into two parts, internal analysis and external analysis. The internal analysis is going to analyse the companies' logistics performance separately by looking at the company's market strategy while the external analysis is going to compare the different companies' logistics performance with each other.

5.3.1 Internal analysis

This internal analysis chapter is going to analyse all companies' market strategy and logistic strategy separately. The logistics strategy applied for the company is being chosen based on the information of what the company thinks is important, how they reach their market goal and which products they are offering. This chapter is also analysing if these strategies are connected with the company's overall logistics KPIs.

5.3.1.1 ICA Non Food

This chapter is divided into three parts. The first two parts is analysing ICA Non Food's market strategy and logistics strategy. The last part is analysing ICA Non Food's connection between their overall KPIs and strategies.

Positioning based on market- and logistics strategy

ICA Non Food's goal is to offer a wide variety of products with good quality and good prices. The company has a broad customer target since they have a wide product assortment but also a high product variety within the same assortment by offering products in different price ranges to be able to meet their customers' demands. As seen in Figure 14, ICA Non Food is placed on the upper right box, *cost and service leader* in Christopher's logistics and competitive advantage matrix (2005). The reason why the company is placed here is since the company is both focusing on having a broad product assortment to meet many customers demand and reducing their costs. The reason why the company is not placed on the upper right corner is since they are not offering fully customized products and focusing on lowest possible cost. The company is instead segmenting their customers. Then they offer different types of products within different price ranges to reach these customers at the same time as they are focusing on lowering their costs by continuously trying to reduce them. One costs component among others that the company is focusing on is the total logistics costs as a percentage of sales. The company's value for this KPI is higher than the majority of the benchmarked companies' value, see Figure 16, but is in the range of the average value among other retail companies according to two different market surveys presented by Establish Inc. (2014) and Tompkins and Ferrell (2012). From this KPI it can be stated that ICA Non Food does not have a low costs advantage or a high costs advantage but have instead an average costs advantage. However, the company has a cost advantage in the purchasing price since they are buying products in high volumes, which decreases their costs. Therefore it can be stated that ICA Non Food has a high costs advantage. However the company is placed close to the middle line between low costs advantage and high costs advantage due to that they have a bit higher total logistics costs as a percentage of sales compared to the majority of the other retail companies. The company is however continuously working with reducing their costs and the reasons for this are because they can then squeeze their prices and reach

out to more customers that are interesting in buying low price products and they can at the same time also be more efficient.

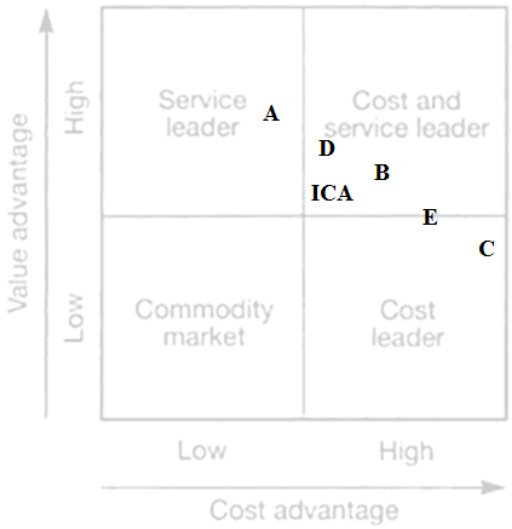


Figure 14 Logistics and competitive advantage, adapted by Christopher (2005)

Logistics strategy applied

ICA Non Food is offering a medium product variety and high volumes. The product variety is medium since the company has products in different price ranges to meet the different customer segment's needs. However, the company has not product varieties that meet specific customers' unique requirements which would increase the product variety a lot. The volume the company is offering can be seen as high since all the MAXI ICA Stormarknaders´ stores are large and are offering a high volume of products. The company can reach economies of scale that are gained through the sales volume which makes it possible for them to be cost leaders due to their size (Christopher, 2000). Due to their size it is possible for ICA Non Food to squeeze the purchasing price because of the high volume products they are buying from the suppliers which give them volume advantage. By looking at the variety and volume, it can be analysed if the company is a lean or agile company, see Figure 6. The company has a medium variety of products and high volume which makes the company neither lean nor agile but more in between as seen in Figure 6, a hybrid strategy, i.e. leagile (Christopher, 2000).

Since ICA Non Food is focusing a lot on the customers, which is why service ratio is one of their overall logistics KPIs, it can be argued that the market winner for this company is customer service and for these companies, a leagile approach is suitable (Fernie and Sparks, 2014). As presented above, ICA Non Food is also focusing on costs and continuously working to reduce this to be able to reduce their prices and be more efficient. As seen in Figure 15 ICA Non Food has a higher value in inventory turnover compared to the other benchmarked companies since they are focusing on decreasing their inventory levels as much as possible which is often the approach lean companies are doing to reduce costs (Christopher, 2000).

All in all, by combining ICA Non Food's customer service and cost focus and at the same time their product offering, their logistics strategy can be seen as a hybrid strategy, leagile.

Connecting KPIs with strategies

The company's vision to make every day a little bit easier for their customers requires that the company understands the customers' needs to be able to meet them. To reach their vision, the customer service is very important for the company, which is reflected in their KPI service ratio. According to Fernie and Sparks (2014), companies that have service level as their customer driver are leagile or agile companies, which argue that it would be suitable for ICA Non Food to have a leagile or agile strategy.

The other KPIs the company is focusing on, total logistics costs and inventory turnover are instead related to costs. These KPIs are related to reduce costs to make the company more efficient. Reducing costs and inventory is a strategy that lean organizations have (Christopher, 2000) and by only looking at these two KPIs, ICA Non Food could be seen as a lean company. However, since the company is not only focusing on reducing costs by decreasing the stock level and minimizing the purchasing prices but also on customer service and meeting their customers' needs by offering different types of products with different price ranges, the company's KPIs are clearly connected to their logistics strategy that were stated to be a hybrid strategy.

5.3.1.2 Company A

This chapter is divided into three parts. The first two parts is analysing company A's market strategy and logistics strategy. The last part is analysing company A's connection between their overall KPIs and strategies.

Positioning based on market- and logistics strategy

Company A's goal is to offer a high customer service to a broad target of customers and to have a high brand reputation. The company is reaching their goal of having a high customer service by having a market strategy with shop assistants available in their stores to help their customers when they need help. The company is also offering products within different price ranges for different customer segments depending on their requirements in order to meet different customer demands as much as possible which makes this company a service leader according to Christopher (2005). The company is not focusing on offering products to low prices but the prices aims to be reasonable for the customers with consideration to the value offered.

As seen in Figure 14, company A is placed on the right side of the box *service leader* since the service and value offered to the customers are of high importance for the company. This is illustrated in their market strategy to offer fashionable products for their customers and having shop assistants available in their stores to help their customers. However, the company cannot offer tailored made products for all customers' requirements since all customers have unique service requirements (Christopher, 2005) and this would increase the company's costs too much due to the resources it would require. The company is striving to keep their costs down as well as offer a high customer service and cannot therefore meet all the customers' unique requirements and is instead dividing their customers into segments. Due to this, the company is not on the top of the box *service leade*r. The company is also taking costs into consideration when they offer their products since the prices are not neglected by their customers. One factor that is affecting the company's costs is illustrated in their KPIs total logistics cost and inventory turnover. The company is continuously working with decreasing their costs and as seen in Figure 16, the company's total logistics costs as a percentage of sales is a bit higher than the average value among retail companies according to two surveys made by Establish Inc. (2014) and Tompkins and Ferrell (2012). Since the company's value is a bit higher than other retail companies, the company does not have a high cost advantage but they are working with decreasing their costs and are improving their value continuously. Due to this, the company has a low cost advantage in Figure 14 but is close to the line between low costs advantage and high cost advantage because the company does not have much left to reach the average value for the total logistics costs as a percentage of sales for retail companies.

Logistics strategy applied

Company A can be viewed as leagile or agile since customer service is of high importance for them and according to Fernie and Sparks (2014) service level is the customer driver for companies classified as leagile or agile. To reach a high customer service, the company has shop assistance always available in the stores for their customers to help the customers in the stores when they need help. Company A is also focusing on having all their products available for their customers in the stores to increase their customer service which is according to Fernie and Sparks (2014) a suitable strategy for agile and leagile companies. This is the case for all company A's product categories, i.e.

both for the basic products and the fashion products. Since the company always wants to have their products available for their customers in the stores, the company's inventory level will be high to be able to have their products available for their customers, which will decrease the inventory turnover (Sabri and Shaikh, 2010) which is shown in Figure 15 where company A has the lowest inventory turnover.

However, according to Fisher (1997) the supply chain strategy should for basic and fashion products not be the same. Innovative products, which are fashion products should have a responsive supply chain and focus on respond quickly to unpredictable demand (Fisher, 1997). The functional products should on the other hand have an efficient supply chain to supply their customers at lowest possible cost. The company should generate high turns for these products and minimize the inventory to decrease the logistics cost (Fisher, 1997). Therefore company A have a mismatch between the company's supply chain with the functional products, see Figure 5 since these products should have a more efficient supply chain. One way for company A to decrease their total logistics costs is to make the supply chain for the functional products more efficient and focus more on costs than availability for these products. However, since the company is known to have their products available for their customers it is important that the company do not lose this situation in the market but try to higher the inventory turns for the functional products to decrease the total logistics costs at the same time as they do not affect the customer service. This could make that the company get closer or maybe also in line with the average value for retail companies' total logistics costs as a percentage of sales.

All in all company A could be seen more as an agile company than a lean company because they focus more on availability of their products independent on their product types than decreasing their cost even if they are focusing on this as well. The company has therefore a hybrid strategy of agile and lean, i.e. a leagile strategy but more towards the agile strategy than the lean strategy.

Connecting KPIs with strategies

Company A´s goal to have a high customer service, a wide product portfolio and high reputation could be reflected in their KPIs customer complaints as well as deliver accuracy. This is also connected to the company's position in Figure 14 above which shows that the company has a high value advantage. By measuring customer complaints company A is informed of how satisfied their customers are with their products and service, which are important factors for the company.

Furthermore, measuring number of complaints could also be useable for the company since customer satisfaction affects the reputation which also is important for the company. Their goal to have a high customer service could also be connected with the KPI delivery accuracy since company A priorities to offer a high customer service by having products available for their customers. Having products available are also beneficial for the company since they aim to offer products from a wide portfolio which is enabled with as many products as possible delivered when planned. The other KPIs that the company uses, inventory turnover and sales spin, are not directly connected to the company's primary focus on having a high availability of their products for their customers. However, these KPIs are reflecting company A´s focus on keeping the costs down and offer products to a price that are acceptable by the customers.

When considering company A´s strategy they could be valued as a leagile or agile company due to the high focus on service as above argued. The KPIs customer complaints and delivery accuracy could although be connected to an agile approach. This since the KPIs reflect the importance of responsiveness, availability, customer service and focus which are argued by Christopher (2000) to be factors important for an agile company. But the other KPIs inventory turnover and sales spin could rather be connected to a lean approach if the company is focusing on decreasing their costs since these KPIs reflects the importance of costs and inventory reduction which are argued by Christopher (2000) to be factors important for a company that is lean. Considering the KPIs the company is focusing on, the company's logistics strategy is seen as a combination of agile and lean. Due to this combination it could be argued that the KPIs altogether reflects a leagile approach which is in line with their strategy which also are argued to be leagile but more agile than lean.

5.3.1.3 Company B

This chapter is divided into three parts. The first two parts is analysing company B's market strategy and logistics strategy. The last part is analysing company B's connection between their overall KPIs and strategies.

Positioning based on market- and logistics strategy

Company B's market strategy is to offer enjoyment for the customers visiting their stores and that the customers get value for the money they spend. The company has a broad customer target by offering products within different price segments depending on the quality of the products offered. The company is also as explained in chapter *4.2.3.3 Company B,* offering different products depending on where the stores are located to meet the customers' requirements in the different locations. Some stores have more low costs products while other stores located somewhere else have more premium products depending on who the customers are and what they want.

As seen in Figure 14, company B is placed on the higher right box, *cost and service leader,* since they are both focusing on customer service by adapting the product offering depending on who the customers are but also on low costs. The reason why the company is not placed for example on the upper right corner of this box is because they do not have a maximum value advantage because they do not customize their products for a unique customer. Instead they segment their customers and then do a generalization of what the different customer segments require. Another reason why the company is not placed in the upper right corner of the box is since they do not have a full cost advantage by looking at their inventory turnover. As seen in Figure 15, company B's inventory turnover is not the best among the benchmarked companies. The company has however a very good value on their total logistics costs as a percentage of sales as seen in Figure 16, which results that they have higher costs advantage than company A, D and ICA Non Food.

Logistics strategy applied

Company B is offering a medium variety of products with different price ranges within the different product categories. The company is at the same time offering products in high volumes due to that the company is a large retail company with high products volumes. By looking at these two factors as presented in Figure 6, the company should have a hybrid logistics strategy, leagile. The company would be placed on the upper right box in Figure 6 because they offer products with medium variety in high volumes.

The company has different types of products, they are both offering products with short product life cycles such as seasonal products and products with longer product life cycles which are the functional products Fisher (1997) are describing. For the products with short product life cycles it is more important for the company to be agile and respond fast to the customers changing demands while for the products with long product life cycles a lean strategy is more appropriate according to Fernie and Sparks (2014). Company B is today however not handling the seasonal products in the same way as Fernie and Sparks (2014) is recommending but handles them instead in the same way as functional prodcuts, i.e. by having an efficient supply chain. These products are decreasing the total inventory turnover value for the company because the products sometimes are staying in the stock for a whole year since the product could not be sold during the specific season. Company B should improve the supply chain and act more as Fernie and Spark (2014) are recommending, i.e. having a responsive supply chain, for these product types to respond faster to the customer changing demands and by this increase their total inventory turnover for these products.

The company's strategy is, as explained above, to focus on service level and this is according to Fernie and Sparks (2014) something agile or leagile organizations are focusing on. The company is all in all something in between a lean company and an agile company. The company's logistics strategy is therefore leagile.

Connecting KPIs with strategies

Company B's strategy to offer different types of products in different price ranges to meet the customers demand, could be reflected in their KPI customer satisfaction. The company wants to offer products that the customers want and the company is customizing their offers depending on where the stores are located to meet the customers demand in that area. The company is doing all this to increase the customer satisfaction and it is therefore important for the company to measure how satisfied the customers are with their products and service. The KPI customer satisfaction could be connected with the leagile and agile approach (Fernie and Sparks, 2014).

The company is focusing on offering products that are worth its price and to be able to do this the company also has to focus on the cost side. The reason why the company has a high cost advantage, see Figure 14, is since their overall logistics cost as a percentage of sales is lower than the other benchmarked companies even if the companies have almost the same logistics strategy, see Figure 16. The value is also lower than the average value from market surveys among retail companies from Establish Inc. (2014) and Tompkins and Ferrell (2012). The reason for this can be due to that the company is focusing a lot on logistics KPIs that are related to costs, i.e. total logistics costs as a percentage of sales and ratio between personal hours worked & sales. These KPIs does the company use to be able to keep the costs down and reduce the logistics costs as much as possible. The company is for example focusing on the ratio between employee hours worked and sales to reduce waste as much as possible such as waiting time. This approach is connected to the lean strategy where companies that use this approach are focusing on reducing costs by reducing waste such as inventory and waiting time (Christopher, 2000). Since the company is focusing on the costs side at the same time focusing on the customer service, company B becomes a leagile company. Company B wants, in the future as explained before, to segment their products into more detailed subcategories in order to have the possibility to know more what is happening on the cost side for these products in a more detailed way. It can be argued that it is possible for the company to move more to the lean side of the hybrid strategy than to the agile side if they in the future only focus on reducing costs.

5.3.1.4 Company C

This chapter is divided into three parts. The first two parts is analysing company C's market strategy and logistics strategy. The last part is analysing company C's connection between their overall KPIs and strategies.

Positioning based on market- and logistics strategy

Company C´s goal is to offer attractive products to the lowest price on the market. This is done by a focus on the lowest possible price when purchasing products which partly are enabled by their flexible assortments, the volume required as well as the flexibility of other factors such as time of delivery. Company C is also able to offer products to a low price by keeping their costs low due to their focus on eliminating waste, reducing inventories and being efficient when it comes to their KPI employees' job per hour worked as explained in the *4.2.3.4 Company C*. Due to this, company C is argued to be placed in the box *cost leader* in Figure 14 since companies that focus on costs are striving for efficiency and aim for a cost advantage (Christopher, 2000). Company C´s placement near the maximum of cost leadership in Figure 14 illustrates company C´s high cost advantage due to their enormous costs focus and flexible purchasing price which makes it possible for them to buy their products with low purchasing price. Their placement close to the middle on the value advantage scale illustrates company C´s offering of products that are requested by the customers and their requirement of a certain level of product quality. As described is the company offering products that the customers are requiring as well but it looks like that they are more focusing on buying products with as low purchasing price as possible than offering products that the customers require. Therefore the company is today on the *cost leader* box.

Logistics strategy applied

Being the cost leader is according to Waters (2003) comparable with a company being lean and therefore it could be argued that company C has a lean logistics strategy. A lean company focuses on

the lowest possible cost (Waters, 2003), cost reduction, minimizing waste such as inventory and waiting time (Christopher, 2000), which, company C does. This by their strategy to buy products as cheap as possible and their KPIs inventory turnover and jobs per hour worked which aims to keep the costs down and reduce waste as well as ineffectiveness.

Although, as above described, company C also focuses on customers' demand and does not only buy products if the purchasing price is low which argues that company C also is a bit agile. The reason for this is since flexibility and product variety are qualities describing a company that is agile (Christopher, 2000). All in all, company C is argued to be more lean than agile since the company's is working a lot with decreasing their costs to reduce inventory costs and is purchasing products with low prices to minimize the cost.

Connecting KPIs with strategies

The company's goal to always offer demanded products to the lowest price could be reflected in their KPI purchasing price. The reason for this is since it is the purchasing price that determine whether the company can offer the product to a low price and thereby will the purchasing price effects if company C purchases the product or not. The KPIs inventory turnover, inbound pallet & order line per day and jobs per hours worked could in a similar way be connected to the strategy since these KPIs affect the costs. Inventory turnover and stock level affects the costs because these costs are related to the inventory costs. If the company has a low inventory turnover and high stock level, the company will have a high inventory costs. The inventory turnover is something company C is striving to increase. The inbound pallet & order lines per day affect also the costs since these KPIs influences the number of employees working which affect the costs. The costs could also decrease if the KPI jobs per hours worked increase.

The KPI service level on the other hand, does not have as clear connection to costs as the other KPIs but this KPI is important to have in order to measure the customers' satisfaction. Without the customers, the company would not be able to sell their products.

When considering the fact that the company is viewed as a lean company this could in a similar way as their market strategy be connected to the KPIs since the company's KPIs that are related to costs are consistent with lean. These KPIs have, as argued above, a cost focus which are suitable for a lean approach (Christopher, 2000). All in all, it is argued that the lean approach and the overall logistics KPIs are consistent with the market strategy.

5.3.1.5 Company D

This chapter is divided into three parts. The first two parts is analysing company D's market strategy and logistics strategy. The last part is analysing company D's connection between their overall KPIs and strategies.

Positioning based on market- and logistics strategy

Company D's goal is to offer products with quality and design at a good price. The company is offering products in three different price segments to be able to meet different customers' needs. The company's largest customers today are women at the age between 40-60 years old. As seen in Figure 14, company D is placed on the upper right box, *cost and service leader* since they are offering products with high value for their customers at the same time as the products have good prices. The company is seen as a service leader since they are meeting different customers' needs by offering products in different price ranges and is focusing on offering design products with high quality. The company is not focusing on lowest possible costs but instead more on quality and design to increase the customer service level. This mean that customer service is more important for the company than lowest possible costs which is the reason why the company is placed more on the left side of the *cost and service leader box.* However, the company is also a cost leader as seen in Figure 16, where the company has a low total logistics costs as a percentage of sales among the benchmarked companies

and the average value from the market surveys by Establish Inc. (2014) and Tompkins and Ferrell (2012).

Logistics strategy applied

Company D is offering medium variety of products with three different price ranges from basic to premium within their different product categories. Companies that are offering a medium product variety are according to Fernie and Sparks (2014) often leagile companies. The volume of the products the company is offering is also medium since the company does not have a high amount of the same product type in the stores but the company is also not offering only one of a specific product type in their stores. The reason for this is since it would be too expensive for the company to only offer one of a certain product type in the stores. The company is instead often offering a number of products of the same product type. Companies that offer a medium volume of products have often a hybrid strategy (Christopher, 2000).

The company has as explained before a specific customer segment but this is something the company wants to change. The company wants to reach a broader customer target and they are doing this by customizing their offers even more for the different customer needs. For instance they are also using e-commerce as a sales point to reach the younger customers because these customers are using e-commerce more as a buying behaviour than their older customers. Since the company does not reach a broad target of customers, the company is not customizing their products in a large scale and is therefore not an agile company. However, the company is neither a lean company since they have a medium amount of product variety and are working today with identifying the buying behaviour for the different customer segments to increase their customer target. This makes the company more a leagile company.

The company is focusing more on making their customers satisfied and offer products that the customer wants instead of decreasing their costs as much as possible which makes the company a more agile company than a lean company (Christopher, 2000). As explained above, the company is also focusing on costs since they want to offer products with good prices which make the company not only an agile company but also a little bit lean. A company that is in between a lean and agile strategy is using a leagile approach (Christopher, 2000). As a summary, company D is a company with a leagile approach, focusing more on customer service than costs. This makes that the company more agile than lean.

Connecting KPIs with strategies

The company's goal is to offer products with quality and design with good prices for their customers because they think customer service is very important which is in line with the logistics strategy leagile where customer service is the customer driver (Fernie and Sparks, 2014). The customers are not buying products in company D's stores because the products are the cheapest ones but instead due to the products' quality and design. It is therefore important for the company to keep the quality and design to keep their customers. The quality and design is of higher importance for the company than to offer lowest possible cost products since this is what the company is competing with. To offer lowest possible cost products is not their market strategy.

When comparing the company's goal to offer products with quality and design for their customers since customer service is important for the company and KPIs used, it is seem to be a mismatch between these. The KPIs the company is focusing on are all related to costs and none are related to customer service even if this is important for the company. All the KPIs the company is focusing on are related to costs, i.e. total logistics costs, total logistics costs as a percentage of sales, inventory turnover and fill rate. The KPIs are today therefore not reflecting the company's market strategy and logistics strategy. The company should focus on some soft factors as well such as service ratio since customer service is so important for the company. How will the company otherwise know that their customers are satisfied if this is nothing that the company is measuring continuously? If only looking at the KPIs used, you would think that the company's logistics strategy is lean since the company's

most important KPIs today are costs related. However, this is not what the company focus on. The company focus more on having satisfied customers and deliver products with high quality and design. In conclusion, to be able to make a better match between the most important KPIs used and what the company focus on, company D should also use the KPI service ratio or similar to be one of their most important KPIs.

5.3.1.6 Company E

This chapter is divided into three parts. The first two parts is analysing company E's market strategy and logistics strategy. The last part is analysing company E's connection between their overall KPIs and strategies.

Positioning based on market- and logistics strategy

Company E´s goal is to offer products from a wide assortment with different price segments depending on the level of quality and design but always to affordable prices to reach a broad customer target. The creation of an assortment that are attractive and possible to buy by many customers is possible due to company E´s focus on being efficient and keeping their costs as low as possible. This is enabled by their consideration to the total amount of cost from a supply chain perspective. In Figure 14, company E is placed high on the *cost advantage box* since they are focusing a lot on reducing their costs as much as possible to be as efficient as possible. On the value advantage parameter they are placed in the line between high and low value advantage since they are not offering value to the customers by having products available in their stores, with different price levels depending on the design and quality to as a high extent as the other benchmarked companies with high value advantage. If company E would increase their value even further they would end up in the box cost & service leader but this might be a struggle for them since an increased value offered to the customer could increase the costs which is of high importance for company E to keep as low as possible.

Logistics strategy applied

The product variety are argued to be medium at company E since they offer alternatives to the customers but there are limitations due to the cost focus company E have. With consideration to their medium product variety company E is a leagile company (Fernie and Sparks, 2014). On the other hand, since cost is the main customer driver and since many of company E´s products have long life cycles and the supply chain for these products is efficient; the company has a match between the supply chains with the products according to Fisher (1997), see Figure 5. This supply chain strategy can be seen as a lean approach since reducing inventory and costs is important for these companies.

Another important factor, except price for all the products, are that the products should be available for the customers in the stores. Company E does continually strive to have products available which are a form of customer service indicating an agile and leagile logistic strategy (Fernie and Sparks, 2014). All in all, company E strives to continuously find an optimal balance between offering attractive products when it comes to price, design and availability to a broad target of customers with a focus on costs. This indicates that the company is a leagile company since the company is combining lean and agile strategies as explained above.

Connecting KPIs with strategies

Company E´s goal to offer products to affordable prices could be reflected in their KPIs total logistics cost as a percentage of sales, inventory turnover, CO_2 emissions/ transportation and fill rate due to the cost focus. By focusing on and continuously minimizing their costs by improving the above mentioned KPIs it is possible for company E to offer their products to affordable prices. The cost focus in some of company E´s KPIs do also reflects the above argumentation that company E is lean. Although by viewing the other main KPI, service level that company E is focusing on they could also be argued to have a logistic strategy that are leagile or agile (Fernie and Sparks, 2014). The KPI, service level, is of high importance for the company and reflected in their strategy since it is important for company E to have products that are available in their stores which the service level covers. All in all, company E´s market strategy to offer products from a wide assortment that are affordable and available is reflected

in their KPIs since these covers both the focus on costs and service. Furthermore, the KPIs could also be connected to their logistic strategy since they reflect both a lean and agile approach.

5.3.2 External analysis

This external analysis chapter is going to compare the benchmarked companies logistics strategies and logistics KPIs with each other in order to find similarities and differences between the companies.

5.3.2.1 Comparing the benchmarked companies' logistics strategies

Companies that are cost leaders have according to Water (2003) a lean strategy due to their focus on reducing costs as much as possible. Of the six benchmarked companies company C could be viewed as a cost leader as described above and illustrated in Figure 14. It was also argued that it would be suitable for company C to have a lean logistic strategy which is consistent with their market position since Waters (2003) states that cost leaders have lean logistic strategies.

Companies that are service leaders have according to Waters (2003) an agile strategy due to their focus on offering tailored solutions for their customers. These companies have to respond fast to changing needs which makes flexibility and customer service important for these companies (Christopher, 2000). The only company of the six benchmarked companies that is categorized as a service leader is company A since this company is having the highest value advantage among the benchmarked companies. This company is also the only one that is on the low cost advantage side since their total logistics cost as a percentage of sales is higher than the other benchmarked companies and also higher than the average value from the market surveys from Establish Inc. (2014) and Tompkins and Ferrell (2012). However, this company is not classified as a fully agile company since the company is not customizing their products for all specific customers' needs and are not fully flexible with the changing needs due to that the company have some sort of costs focus as well. The company has instead a high product variety that they offer for their customers to meet many customers' needs as much as possible.

The other four companies; company B, D, E and ICA Non Food that are in the cost and service leader box are both lean and agile and have therefore a leagile strategy. This conclusion is consistent with Waters (2003) statement that cost and service leaders have hybrid strategies. However, some of the companies are leaner and some companies are more agile than others. For instance company D is focusing more on customer service than low costs which make this company more agile than lean while company E is more focusing on reducing costs and is therefore more lean than agile. Company B and ICA Non Food are focusing on both factors and are therefore more in between the lean and agile approach. Company B is also more agile than compared to ICA Non Food and the reason for this is since the company is adjusting their product offerings depending on where the stores are located geographically. One store in the middle of centrum in Stockholm will not offer the same products as a store in a village in Öresund. The reason for this is since it is different types of customers in these different parts and these customers are interested in buying different products.

5.3.2.2 Comparing the companies' selection of KPIs

All of the benchmarked companies have different sets of KPIs as illustrated in Table 3. Furthermore, all of the benchmarked companies, except for company D, have main KPIs that reflect their market and logistic strategy. Although it is only company B, C, D and E that believes that their KPIs are connected to their market strategy. These companies argue that they should have other sets of KPIs if they had another market strategy. According to Kaplan and Norton (1993) this is the right way to consider KPIs since a company's KPIs should be clearly linked to their market strategy in order to measure and follow up their logistics performance in a successful way. However, company D's KPIs are not today clearly connected to their market strategy since they are not including customer service as a main KPI despite their large focus on their customers' satisfaction. All companies except company D have KPIs that are reflecting their market strategy even if only company B, C and E believes that their KPIs are connected to their market strategy. Therefore it is only company B, C and E who connects them clearly as Kaplan and Norton (1993) recommends. Due to this, company B, C

and E might be more successful and might measure if they are reaching their operational and strategic goals (Kaplan and Norton, 1993) better than the other companies in this study.

Table 3 The benchmarked companies main KPIs

	ICA	A	B	C	D	E
Inventory turnover	X	X		X	X	X
Total logistics costs/ Total logistics costs as % of sales	X	X	X		X	X
Customer complaints/satisfaction, Service level/ratio	X	X	X	X		X
Sales Spin		X				
Delivery Accuracy		X				
Hours Worked as a % of sales, Jobs/hours worked			X	X		
Inbound pallets & order lines/ day				X		
Stock level				X		
Purchasing price				X		
Fill rate					X	X
CO_2 emissions						X

It is argued that it would be suitable to have a leagile logistic strategy for all of the companies except for company C. One difference between the lean company (C) and the other leagile companies, with exceptions for company D, is the set of KPIs. The lean company (C) measures KPIs related to lean with exception to service level which is related to leagile or agile and this is not the most important KPI. The leagile companies´, except for company D with KPIs only reflecting a lean approach, have KPIs reflecting both a lean and an agile approach.

According to Caplice and Sheffi (1995) the selection of KPIs should be affected by different factors such as product characteristics (1995) and company structure which creates a unique logistical environment for each company (1994). All of the benchmarked companies have different amounts of products that could be argued to have short life cycle since they for example are seasonal and only could be sold within a certain time limit such as around Christmas. However, company A are stated to have a higher amount of products with short cycle based on their product portfolio with fashion products. This could be reflected in their KPI delivery accuracy which is a KPI that none of the other companies have. Even though company A argues that their set of KPIs is not connected to their strategy, their KPI delivery accuracy might have been selected with regards to their product characteristics.

The other mentioned factor, company structure, is a factor that company C considers when selecting their KPIs and an example is that they do not measure their total logistics costs since they do not consider it valuable and suitable for their company due to its physical structure and the way costs are managed.

Something that all companies except for company D have in common are that they use both hard and soft measurements which according to Vitasek and Maylett (2011) are important since it provides companies with a true picture of logistics efficiency. Due to this, company D's picture of their logistics efficiency might not be complete which could affect them negative since they do not cover all dimensions (Heaver and Henriksson, 1994).

Another factor that is important and that all companies have in common except for company D is that they all measure internal efficiency and external effectiveness as illustrated in Figure 1. By doing this, company A, B, C, E and ICA Non Food can benefit by measuring both efficiency and effectiveness instead of only focusing on internal measurements as company D since this can decrease their external effectiveness (Griffis et al., 2004).

It should be considered that the KPIs covered in this report are the main KPIs the companies are focusing on and as Reh (2015) writes the companies might measure other KPIs that they do not present since the companies for example do not categorize them as KPIs (Reh, 2015).

5.3.2.3 Comparing the companies´ benchmarked KPI values

In this chapter the benchmarked companies' inventory turnover and total logistics cost as a percentage of sales will be compared with each other and data collected from different market surveys and studies. Not all of the benchmarked companies' KPI values will be compared because some companies do not measure some KPIs and some companies did not share their values of their KPIs.

Inventory turnover

This chapter will compare the average total inventory turnover between five of the benchmarked companies. Figure 15 is presenting the different benchmarked companies' inventory turnover and how this is related to their logistics strategy. According to Sabri and Shaikh (2010) the inventory turnover is lower for agile companies since these companies are focusing on customer service and require therefore a higher inventory to be able to have their products available for their customers. As seen in Figure 15, company A has the lowest inventory turnover compared to the other benchmarked companies. One argument why this is the case can be that company A is the company that is most agile compared to the other companies since company A have fashion products and have to have their products available for their customers. As argued by Fisher (1997) the inventory turnover for fashion products are often lower than for basic products since the company often have to have a higher stock of finished goods for these products to be able to have products available for their customers.

Furthermore, the inventory turnover should be higher for lean companies since these companies are focusing on eliminating waste and they are therefore focusing on "zero" inventory (Christopher, 2000). The company that could be argued as most lean of these four companies is company C and this can be the reason why their inventory turnover is higher than the other companies. As seen in Figure 15, the companies' inventory turnover is in line with what Sabri and Shaikh (2010) and Christopher (2000) are describing, i.e. lean companies have higher inventory turnover than agile companies. ICA Non Food is argued to have a similar strategy as company B and as illustrated in Figure 15, ICA Non Food is placed closest to company B but their inventory turnover is higher than company B. Furthermore, ICA Non Food's inventory turnover is higher than all of the other companies except for company C that are argued to be most lean. This means that ICA Non Food has a competitive inventory turnover value among the benchmarked companies which means that they are managing their inventory levels in a good way.

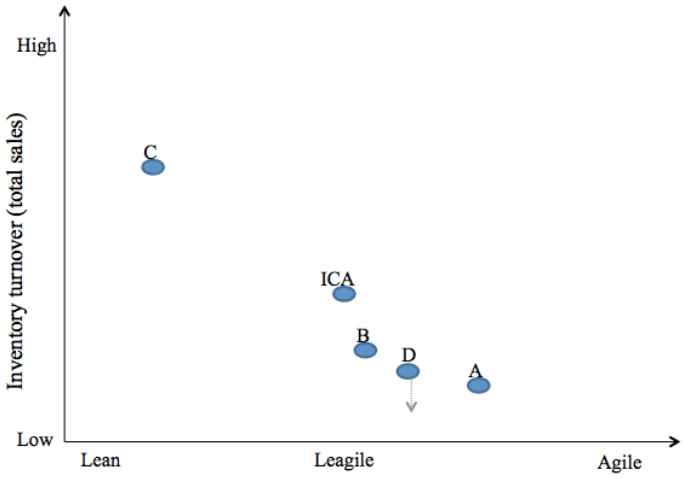


Figure 15 Comparison of the inventory turnover for the benchmarked companies

Another important factor to take into consideration, when comparing the inventory turnover between these companies, is to analyse how these companies are calculating their inventory turnover. How does the formula look like?

As seen in chapter *4.2.2.1 Inventory turnover* and *4.2.4 The benchmarked companies measurement of inventory turnover,* ICA Non Food, company A, B and C calculates their inventory turnover by dividing COGS (costs of goods sold) with the inventory value. This formula is also in line with what Bergman, Knight and Case (2006) are recommending. According to Averkamp (n.d), using COGS makes sense since inventory is the cost of goods in hand and is reported to the balance sheet as a cost. However, company D is calculating inventory turnover by dividing sales with average inventory per day. This is not recommended since by calculating inventory turnover with sales instead of COGS, the inventory turnover will be higher because companies are adding a gross margin to get the sales and this should not be included in the inventory turnover formula. The reason for this is since the inventory is the cost of good in hand (Averkamp, n.d.) and to get a correct inventory turnover, COGS should be used. Although, even if company D´s inventory turnover is higher due to their use of sales instead of COGS, they have the second lowest inventory turnover value among the benchmarked companies as illustrated in Figure 15. The reason for company D´s low inventory turnover could be explained by the argumentation that they can be viewed as more agile than company B, C and ICA Non Food which have higher inventory turnover value than company D. Company A has as seen in Figure 15 lower inventory turnover than company D but since company D is using sales instead of COGS, their inventory turnover by using COGS would decrease and which of these two companies that have the lowest inventory turnover cannot therefore be stated. Company D's low inventory turnover can also be explained that they are not managing their inventory level as efficient as the other benchmarked companies.

The denominator of the inventory turnover formula is the inventory value. The inventory value is argued by Berman, Knight and Case (2006) to be calculated as;

$$Average\ inventory\ value = (Beginning\ inventory\ value + Ending\ inventory\ value) \div 2$$

The inventory value could according to Bailey (2013) also be calculated by using the beginning or ending inventory for each month, then add together the inventory values for the last 12 months and divide it by 12. This is something the company should do every month to calculate what the average inventory per day is each month. The reason why a company should calculate the average inventory per month is to cover inventory fluctuations, if there are any (Berman, Knight and Case, 2006). Company A is calculating the average inventory by picking out the inventory value once a week from their database. This is company A doing because they want to get an as accurate inventory value as they can. Company B is calculating the average inventory by picking out the inventory value every day within a month from their database. The company is then subtracting these values together and then divides these values with 30 to get the average inventory value for the month. Company C is calculating their average inventory value as Berman, Knight and Case (2006) is recommending, i.e. (beginning inventory + ending inventory) ÷2, for a month. ICA Non Food is measuring their inventory value as Bailey (2013) is recommending and does this since they do not see fluctuations during the days within a month but more during months. However, company D is measuring their inventory value at the end of the month and uses this value as the average inventory value for the whole month since they do not believe that their inventory fluctuate enough to make a big difference.

As seen above, the four companies are not calculating their inventory turnover in the same way. This makes a direct comparison between the inventory values for these companies not 100 percentages correct since the value depends on how the companies are measuring this KPI. Although by taking differences into considerations the comparison could be made in a better way. For instance, company D that are using sales instead of COGS will have a lower inventory turnover due to that sales are usually higher than COGS since many companies are adding a gross margin on their COGS to get a profit. Company D´s lower inventory turnover is illustrated in Figure 15 with an arrow.

Total logistics cost

This chapter will compare the total logistic cost as a percentage of sales between four of the benchmarked companies. Figure 16 is presenting the different benchmarked companies' total logistics

costs as a percentage of sales and how this is related to their logistics strategy. By formulating logistics costs in relation to another factor, in this case sales, it becomes possible to compare the benchmarked companies´ total logistic costs. By comparing companies with each other, each of them can evaluate and improve their logistics costs (Oskarsson, Aronsson and Ekdahl, 2006). In this comparison, company A had the highest total logistics costs as a percentage of sales, ICA Non Food was a bit below, then company D even lower and company B had the lowest value as illustrated in Figure 16. According to a survey from 2014 the average value of total logistics cost as a percentage of sales among retail companies is 9,34 percent (Establish Inc, 2014) and another study from 2012 shows a similar result, presenting 10 percent as the average for logistics cost as a percentage of sales for the retail industry (Tompkins and Ferrell, 2012). The average value of these two surveys is illustrated in Figure 16 by a line. However, it has to be taken into consideration that these average values are surveys from different authors where more retail companies participated in the surveys than this project. One of these surveys included more than 100 companies. What the participating companies included in their total logistics costs is not known and these two average values are only used to complement this study. Compared to the average from these surveys, company A is just a bit higher, company B and D below and ICA Non Food is in the range of the surveys´ average values.

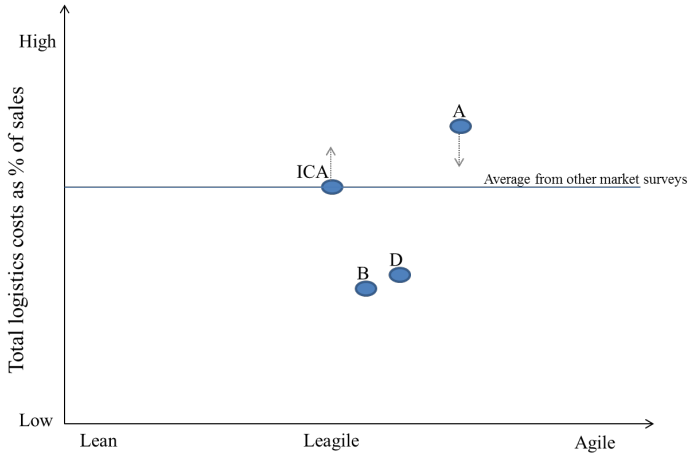


Figure 16 Comparison of the total logistics costs as a percentage of sales for the benchmarked companies

Company A´s high value on total logistics costs as a percentage of sales could be explained by their requirements to be responsive due to their products with short life cycle which could increase the logistics costs such as transports. Since the company wants their products to be available for their customers they have to have a higher inventory level which will increase the total logistics costs as well.

Company B and ICA Food are argued to have the most similar strategies and many similar product offerings which makes that their total logistics costs as a percentage of sales can be more compared with each other than the other benchmarked companies since the other companies have other strategies which results in different values on their total logistics costs. Although, even if company B and ICA Non Food are seen as similar, their values on total logistics as a percentage of sales differs as illustrated in Figure 16. Company B is placed lowest in Figure 16 which shows that they are the best performing company when it comes to total logistics costs. This could be a result of their focus on logistics costs the last years. ICA Non Food on the other hand, is placed second highest even if they are argued to have the most similar strategy as company B. This means that company B has a more competitive value on their total logistics costs than ICA Non Food and ICA Non Food has to improve this value a lot to be as competitive as company B.

Another factor affecting the value of the total logistics costs as a percentage of sales except the market strategy is what each company includes in their total logistics costs. The included cost components vary between companies (Hartman and Media, 2015; Supply Chain Digest, 2006) and according to Sople (2012) total logistics cost can be divided into inbound, process and outbound. Dividing total

logistics costs in different categories as well as including different costs as described by Sople (2012) is in line with the companies in this study, where no company include or divide it in the same way as another.

According to a study by Supply Chain Digest (2006) the categories differs between the companies but all participating companies included warehousing/distribution and 98 percent included outbound transportation (Supply Chain Digest, 2006) which all of the companies, A, B, D, E and ICA Non Food also did as illustrated in Table 4. Furthermore, as illustrated in Table 4, all companies except for ICA Non Food included inbound transportation and due to this ICA Non Food should have a higher value when comparing their total logistics costs with the other companies which is illustrated by an arrow in Figure 16. Nevertheless, it seems not as common for companies to include inbound transportation since only 55 percent of the companies in Supply Chain Digest (2006) study included this cost component. The reason for this can be that many companies' inbound transportation is something their suppliers are handling and this cost component is therefore instead included in the purchasing price. Customer service seems to be even more uncommon, both in this benchmarking study where only company B included it and in Supply Chain Digest (2006) study where only 21 percent included this cost component (Supply Chain Digest, 2006). As written above, company A is the only company including the purchasing price and due to this their value of total logistics costs as percentage of costs should be placed lower in Figure 16. Furthermore company A should also be placed lower, illustrated by the arrow in Figure 16, when comparing them with other companies since company A include the logistics costs until the products are placed to the shelves in the store which ICA Non Food, B and D do not include as illustrated in Table 4.

All in all, ICA Non Food has the second highest total logistics costs even if they do not include inbound transportation which the other benchmarked companies do. The result of this is that ICA Non Food today does not have a competitive value of their total logistics costs compared to the other benchmarked companies. This KPI is something the company should focus more on and try to reduce to be as competitive as the other benchmarked companies.

Table 4 Included in the benchmarked total logistics costs

	ICA	A	B	D	E
Purchasing price		X			
Inbound		X	X	X	X
Warehouse	X	X	X	X	X
Outbound	X	X	X	X	X
To the shelves/ end customer		X			X

Each company's value might also be affected by the size of the company. Therefore it could be investigated whether the benchmarked companies´ size affects their values since larger companies according to Van der Laan (2012) have a higher possibility to affect negotiations with the supplier, which could be beneficial for the logistics costs. This results in that smaller companies in general have higher logistic costs as a percentage is sales than larger (Van der Laan, 2012).

6. Conclusion

In this chapter the master thesis is concluded by answering the main purpose of this study which is to increase ICA Non Food's understanding of their current logistics performance and by this making them aware of potential areas of improvement. In order to answer the purpose of this study two research questions were identified which will be answered in this chapter. This chapter is thereby divided into two parts where each research question is answered in its own part.

How is ICA Non Food currently measuring and following up their logistics performance and are they doing as the literature recommends?
ICA Non Food does all in all measure and follow up their logistics performance as the literature is recommending. ICA Non Food is using both soft and hard measurements and their measurements are also covering internal efficiency and external effectiveness which the literature is recommending. ICA Non Food is also using a small number of main KPIs which are the inventory turnover, total logistics costs and service ratio to be able to focus on these KPIs to increase the KPIs quality and increase the focus on improving these KPIs. A too high number of KPIs makes it more difficult for the company to focus on all the KPIs which will decrease the quality of the KPIs. It is therefore good that ICA Non Food is focusing on a small number of KPIs to be able to really focusing on these and improve them.

The company's management team is highly involved in their KPIs and the employees that are working with these are using the KPIs as often as they are measured. However, ICA Non Food is not making sure that the KPIs are easily accessible for all employees and that the employees are working with their KPIs in mind which is recommended by the literature. As explained in chapter *4.2.1 ICA Non Food's management of their KPIs*, the KPIs were sent weekly, monthly and yearly to the employees through a report from the management team. The KPIs should instead be accessible for the employees continuously to increase their involvement in the KPIs. Other things that ICA Non Food can do to measure and follow up their KPIs as recommended, is to make sure that the KPIs provide the information that KPIs are argued to do. They could also continually reflect if their set of KPIs is optimal for their company, its strategy as well as the company´s critical success factors and by doing this their set of KPIs might change to more useable. The company have used these KPIs a long time ago and are still using them. ICA Non Food is not continuously investigating if these KPIs are still optimal ones for the company today since the market, company's strategy or company's structure have maybe changed which will make that these KPIs maybe not the optimal ones today. This is why it is so important for ICA Non Food to continuously investigate if these KPIs are optimal ones for them or if they should change their main KPIs.

ICA Non Food is today calculating their KPI inventory turnover in the way as the literature recommends and the company is also measuring their inventory turnover for each product category since different product categories have different inventory turns. This is done to understand which product categories have the lowest or highest inventory turnover and can be improved. This is also recommended by the literature to help the company get a more accurate understanding of their inventory turnover because the inventory turnover differs between different product categories. ICA Non Food does however not calculate their other KPIs as recommended by the literature. The KPI inventory days differs, since it is recommended to use COGS (costs of goods sold) instead of sales and average inventory in all of their three methods to calculate inventory days. By using sales instead of COGS, this KPI value will give a misleading picture of the reality because the inventory days will be lower than they actually are since the company is adding a profit margin of their products when selling them. The KPI total logistics costs differ since they do not include inbound logistics as recommended. Furthermore since ICA Non Food do not calculate total logistics costs as recommended, their methods to calculate total logistics costs as a percentage of sales and total logistics costs per unit sold also differs from the literature since they do not include inbound logistics costs. If ICA Non Food wants to have a more detailed understanding and a more overall picture of their total logistics costs they should try to manage their inbound transportation or try to include it in the total logistics costs to know how much their total logistics costs really is.

How does the logistics performance currently look like at ICA Non Food compared to other retail companies*?*

This research question was answered by investigating ICA Non Food's values of the inventory turnover and total logistics costs as a percentage of sales compared to the other benchmarked companies. As seen in Figure 15 companies' logistics strategy seems to influence the inventory turnover. ICA Non Food is most similar company B in their leagile strategy and product offering but ICA Non Food has a higher inventory turnover than company B, i.e. ICA Non Food are performing better in inventory turnover than company B. Both companies are furthermore calculating their inventory turnover almost in the same way and since they have the leagile strategy graded close to each other, their inventory values can almost be compared directly with each other. Compared to the other benchmarked companies ICA Non Food's inventory turnover value is the second highest and it is not only higher than company B that share the same leagile strategy but it is the highest among all of the companies that are argued to have the same logistic strategy. Due to this, it is concluded that ICA Non Food has a well performing inventory management compared to the other companies. ICA Non Food has a competitive value of their inventory turnover and should continue to focus on improving this value in order to proceed as the leader within this KPI. ICA Non Food should continue to focus on inventory turnover since the other companies have inventory turnover as a main KPI and might improve their values and thereby increase their competitiveness.

ICA Non Food's total logistics costs as a percentage of sales is not as competitive as their inventory turnover. Their total logistics cost as a percentage of sales is the second highest among the benchmarked companies as illustrated in Figure 16. But due to the fact that ICA Non Food's value should be higher since they do not include inbound logistics and that company A should be placed lower since they include the purchasing costs and costs for placing the products on the shelves in the store, it cannot be stated which of them that have the highest value. Even if ICA Non Food has a high value compared to the majority of the benchmarked companies, their value is not too high since it is in the range of the average value among retail companies according to the two market surveys presented by Establish Inc. (2014) and Tompkins and Ferrell (2012).

As stated above, ICA Non Food is the company among the benchmarked companies that have the second highest logistics costs as percentage of sales. As recommended by Christopher (2000), Sabri and Shaikh (2010) companies with agile strategies should have a higher logistics costs and companies with lean strategies lower logistics costs. Even if the other benchmarked companies, company D and B are more agile than lean compared to ICA Non Food, they have lower logistics costs as a percentage of sales compared to ICA Non Food. Of course, the value depends on what the companies are including as discussed since this can affect the value a lot. But as seen in Table 4, company A, B, D and E are including more cost components in their total logistics costs than ICA Non Food and ICA Non Food is still having a higher logistics costs as percentage of sales. This makes ICA Non Food not the strongest actor within logistics costs as percentage of sales. The company should improve their value for this KPI to be competitive among the other benchmarked companies.

When comparing the KPIs it can be concluded that ICA Non Food´s higher value on total logistics costs as percentage of sales than the majority of the benchmarked companies is not due to their inventory management since they performed well with their KPI inventory turnover. Instead the value could be high due to other factors such as high outbound transportation costs. Since ICA Non Food is sharing their total logistics costs with ICA Sweden it is not easy for the company to affect this KPI. However, it is recommended that ICA Non Food should analyse their outbound transportation costs or other costs components that are included in total logistics costs together with ICA Sweden to see which cost components can be reduced in order to reduce their total logistics costs and be as competitive as their competitors.

7. Discussion and further research

During the project, it was noticed that it was not easy to benchmark the companies with each other since the benchmarked companies calculated the KPI values in different ways. None of the companies' KPI values can directly be compared with each other since the value is dependent on a lot of factors, i.e. how the companies are calculating their KPI values, which strategy they have, which products are they offering etc. Another reason why it was difficult to compare the KPI values between the companies was since some companies did not send all the KPI values to us such as company E which did not want to send their inventory turnover and total logistics costs as a percentage of sales to us. The reason for this can be that the KPI values is a success factor for the company and due to this the company did not want to share that information.

As above discussed, the benchmarked companies calculates their KPIs in different ways and due to this it is emphasized how important it is to understand how companies are calculating their KPIs when performing a benchmarking. For example, ICA Non Food is not including their inbound logistics costs in their total logistics costs as the other companies. To manage differences like this, ICA Non Food could for example include the known logistics costs for their inbound transports which they are paying fore and further investigate how much the unknown logistics costs for the inbound logistics that the suppliers are paying for to be able to include these as well in the total logistics cost in the future.

It would be interesting if this study could further be analysed by including the service ratio when comparing the total logistic costs and inventory turnover between the companies. The reason for this is to analyse if companies that are focusing on high customer service by offering their customers' different types of products, having their products available in the stores for their customers and focusing on having a responsive supply chain, have higher service ratio than the other companies that are focusing more on decreasing their costs than customers service. According to this study companies that are focusing on high customer service such as company A should have a higher service ratio than companies with costs focus, otherwise are these companies maybe focusing on things that the customers do not appreciate.

To have KPIs that are connected to the company's strategy and critical success factors are stressed as very important according to Kaplan and Norton (1993) but it was only half of the companies in this study that argued that their strategy actually affects their selection of KPIs. At the same time there was a connection between the strategies and set of KPIs at all of the companies except for one. Due to this, the companies that argued that there is no connection might actually consider their strategies when setting their set of KPIs but are unaware of it. Furthermore, it would be interesting to investigate how the set of KPIs looks like at companies that have a lean or agile strategy since all except for one company in this study have a leagile logistic strategy with a focus on costs and value offered to the customers. By knowing how the set of KPIs looks like at companies with other strategies, it could be further analysed if the set of KPIs are selected mainly with consideration to a company´s strategy. Therefore, investigating further how important the connections between strategies and KPIs are is an example of a further research.

It would also be interesting to see how a larger amount of benchmarked companies would affect the results. By performing qualitative interviews with a larger amount of companies, the external validity would increase and there could be more generalized conclusions about companies' logistics performance in the retail industry. Another thing that would be interesting to investigate, that was not covered in this report, is how the size of the company affects the logistics performance. This would be of interest since it was argued that larger companies could have a higher possibility to affect negotiations with the supplier and by this have the possibility to decrease total logistics cost due to good agreements.

One thing that was noticed during the project was that only one company had a KPI that was related to the environment. During the interviews an open question was asked about which logistics KPIs that

was the most important for the company (see Appendix 1), and only one company stated that CO_2 emissions, which is related to the environment, was one of the most important KPIs. The other companies did not mention any KPIs related to the environment. This does not mean that the companies are not at all measuring measures that are related to the environment but it means that their main logistics KPIs are not related to the environment. We believe that in the future, companies will be required to and will focus more on the environment. One reason why companies need to focus more on environmental KPIs is since it today is a lot of political discussions about environmental interventions and it will probably be more political decisions and rules about for example how much emissions companies can release in the future. Considering the environment will therefore be more important for companies. Environmental questions are also something that is getting increasingly important among the society and customers which leads to that more and more companies are thinking about this and want to be more environmental friendly to enhance their brand and increase their competitive advantage. Within five and ten years, we believe that the benchmarked retail companies will focus more on environmental KPIs to be more competitive in the market. It is therefore important for ICA Non Food to be aware of this trend and be ready to act fast to be competitive in the market. One recommendation for ICA Non Food could be to start working with an environmental KPI such as CO_2 emissions today and when all the other companies also are focusing on this KPI, ICA Non Food have already focused on this KPI a while and can have a competitive value compared to the other companies. The reason for this is since we believe that the benchmarked companies will have at least one of their overall logistics KPIs related to the environment in the future. One interesting aspect that can be a further research for this project is therefore to investigate how political decisions and customer demands about the environment will affect retail companies' logistics performance in the future.

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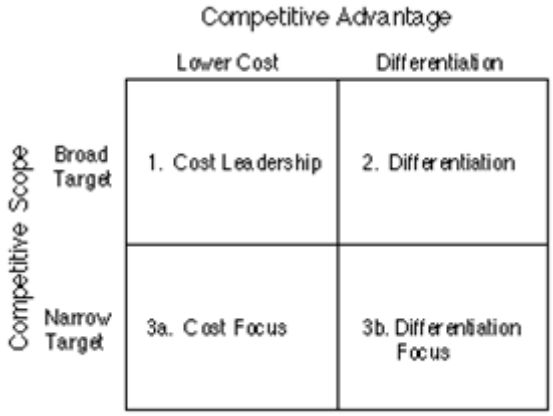
Appendix 1- Interview Questions

Values demanded for the years 2009-2014.

If you consider that some questions are not applicable for your company, please ignore them.

1. How do you divide your product categories?

2. What do you think is most important, to offer customized products or products with low prices? What is your competitive advantage?
    a. Why? For what reason?
    b. Does this differ between your different product categories? For example, low price is the market winner for some product categories and customer service for others?
    c. Do you think that you reach a wider or narrower customer segment?
    d. Where in the picture below would you place your company?



3. Which are your main logistics KPIs?
    a. Why?
    b. How often do you work with these KPIs?
    c. Who among you has developed and decided which KPIs you should work with?
    d. Do you think that the choice of your logistics KPIs is influenced by your company's market strategy?
    e. Do you think you had focused on other KPIs if your company would have a different strategy?
    f. Are there any other KPIs that are not your most important but that you work with continuously?

4. Are you aware of any deficiencies in your KPIs?
    a. How have you improved your work with your KPIs since 2009?
    b. What are the main improvements you have done?

5. How does it look in the future? Which KPIs will you focus on in the future?
    a. Do you have any goals that you will work towards?

Inventory turnover

6. How do you calculate your inventory turnover?
    a. How does your formula like?

7. What is your inventory turnover for your total sales?
    a. What do you think is the reason that values have risen / fallen during the time period? The values can for example be affected by any change you have done? Have some product categories been affected more or less?
    b. What are you striving for? What are your goals?

8. What is your inventory turnover in your warehouse?
    a. What do you think is the reason that values have risen / fallen during the time period? The values can for example be affected by any change you have done? Have some product categories been affected more or less?
    b. What are you striving for? What are your goals?

9. What is your inventory turnover in your stores?
    a. What do you think is the reason that values have risen / fallen during the time period? The values can for example be affected by any change you have done? Have some product categories been affected more or less?
    b. What are you striving for? What are your goals?

10. What is your inventory turnover for your different product categories in your warehouse?
    a. What do you think is the reason that values have risen / fallen during the time period? The values can for example be affected by any change you have done? Have some product categories been affected more or less?
    b. What are you striving for? What are your goals?

11. What is your inventory turnover for your different product categories in the stores?
    a. What do you think is the reason that values have risen / fallen during the time period? The values can for example be affected by any change you have done? Have some product categories been affected more or less?
    b. What are you striving for? What are your goals?

12. Do you measure your inventory turnover in any other way that is not mentioned in this interview?

Inventory Days

13. How do you calculate your inventory days?
    a. How does your formula like?

14. What is your average inventory days?
    a. What do you think is the reason that values have risen / fallen during the time period? The values can for example be affected by any change you have done? Have some product categories been affected more or less?
    b. What are you striving for? What are your goals?

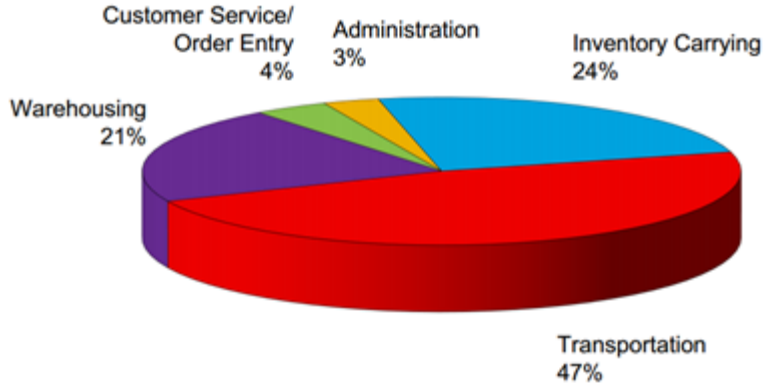
Total logistics costs

15. What is included in your total logistics costs? Where does your calculation of the total logistics costs start and end?

16. Does this differ between product categories and / or products?
    a. If yes, how does it differs?
    b. Why have you chosen to include the selected cost categories for the total logistics costs?

17. How do you divide your total logistics costs? In which cost categories?

Example



18. Which is the largest cost category?
    a. How many percent of the total logistics costs does the largest cost category stand for?
    b. Does this differ between product categories and / or products?
    b. What are you striving for? What are your goals?

Total logistics costs as a percentage of sales

19. How do you calculate your total logistics costs as a percentage of sales?
    a. How does your formula like?

20. What is the value of your total logistics costs as a percentage of sales?
    a. What do you think is the reason that values have risen / fallen during the time period? The values can for example be affected by any change you have done? Have some product categories been affected more or less?
    b. What are you striving for? What are your goals?

Total logistics costs per unit sold in SEK

21. How do you calculate your average total logistics costs per unit sold?
    a. How does your formula like?

22. What is your average total logistics costs per unit sold in SEK?
    a. What do you think is the reason that values have risen / fallen during the time period? The values can for example be affected by any change you have done? Have some product categories been affected more or less?
    b. What are you striving for? What are your goals?

23. Do you calculate the total logistics cost in other percentages?

24. Other comments?