Improvement of Store Operations in the fast fashion industry

A case study of how a leading fashion retailer can adapt to transformations coming from growing efficiency requirements and rapidly changing technology

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ALEKSANDRA KOROŚCIK

Master of Science Thesis
Stockholm, Sweden 2016
Förbättring av butiksverksamhet i den snabbväxande modebranschen

En studie om hur en ledande modekedja kan anpassa sig till kunders växande förväntningar och snabb föränderlig teknik

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# Abstract

In the last few decades, new vertically integrated players have appeared in the fashion industry providing their customers with lower prices and an increased number of seasons per year. In this context, the need for high efficiency levels among the fast fashion retailers appears as a necessity to survive. Since the area of Store Operations (SO) is directly dealing with processes at the end of the supply chain, boosting revenues through the increased efficiency and incorporation of new technologies in this area becomes critical. In order to accomplish that in a long-term perspective, this must be done while improving staff working conditions, customer experience in the stores and with more cost effective practices. Therefore, this study investigated how established fast fashion retailers can improve their Store Operations in pursuance of coping with growing efficiency requirements and rapidly changing technology in their stores.

This has been done by conducting a case study at one of the biggest fast fashion retailers in the world. The research involved 42 different interviews with the case company’s employees and industry experts in the store solutions field, which allowed collecting both qualitative and quantitative data. Moreover, in order to analyze empirical findings obtained during the research process, outsourcing theories, including transactional cost theory (TCT) and resource-based view theory (RBV) as well as innovation theories, including diffusion of innovation and radio frequency identification (RFID) adoption theories, were used.

The results indicate that in order to improve their Store Operations, the case company should first work on five areas, which include: (1) stockroom processes, (2) technology and innovation, (3) alarm systems, (4) employee morale, and (5) customer service. At the same time, it was discovered that the solutions that can improve all of these areas are: RFID that act as a security device and the outsourcing of stockroom process, known as Golden Delivery. In order to make the implementation of these two solutions successful, separate implementation guidelines must be created, both of which are presented in this document.

The findings of this study have implications on both sustainability and research. This investigation contributes to the literature by giving a better understanding of the operational activities performed in the store environment of fast fashion retailers as well as the link between them and the rest of the supply chain. Moreover, the efficiency solutions presented in this document give fashion retailers a sustainable economic advantage achieved through cost savings and increased business performance, as well as, the motivation to focus on social and environmental aspects related to these practices.

**Keywords:** fast fashion, store operations, store efficiency, stockroom process, RFID adoption, outsourcing, fashion retail supply chain, RFID implementation, outsourcing implementation

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Sammanfattning

Under de senaste decennierna har nya vertikalt integrerade aktörer blivit synliga i modebranschen, de förser sina kunder med lägre priser och ett ökat antal säsonger per år. I och med detta har behovet av hög effektivitetsnivå bland snabbväxande modekedjor visas som en nödvändighet för att överleva. Eftersom butiksverksamhet är kopplat till processer i slutet av leveranskedjan, blir ökade intäkter genom ökad effektivitet och införlivande av ny teknik på detta område, kritiskt. För att uppnå detta i ett långsiktigt perspektiv, måste detta göras i linje med förbättrade arbetsvillkor för personalen, kundupplevelsen i butikerna och med mer kostnadseffektiva metoder. I denna studie undersöks hur etablerade snabbväxande modekedjor kan förbättra sin butiksverksamhet i enlighet med klara växande effektivitetskrav och snabbt föränderlig teknik i deras butiker.

Detta har gjorts genom att genomföra en fallstudie på en av de största snabbväxande modebutikerna i världen. Forskningsmetoden involverade 42 olika intervjuer med det studerade företagets anställda och branschexperten inom butikslösningar, vilket resulterade i både kvalitativa och kvantitativa data. För att analysera empiriska resultat som erhållits under forskningsprocessen, har det använts outsourcing teorier, inklusive transaktionskostnadsteori (TCT) och resursbaserad teori (RBV) samt innovationsteorier, bl.a. spridning av innovationsteorier och RFID adoption.

För att förbättra verksamheten i butiken, indikerade resultaten att det studerade företaget bör arbeta inom fem områden, som omfattar: (1) lager processer, (2) teknik och innovation (3) larmsystem, (4) arbetsmoral, och (5) kundtjänst. Samtidigt visade det sig att de lösningar som kan förbättra alla dessa områden är, RFID, som fungerar som en säkerhetsanordning och utläggning av lager processer, som kallas Golden leverans. För att göra genomförandet av dessa två lösningar framgångsrika, måste separata riktlinjer för genomförandet skapas, båda presenteras i detta dokument.

Resultaten av denna studie har visat implikationer för både hållbarhet och forskning. Denna undersökning bidrar till litteraturen genom att ge en bättre förståelse för den operativa verksamheten utförd i butiksmiljö av snabbväxande modekedjor samt kopplingen mellan dem och resten av leveranskedjan. Därutöver, ger de effekativa lösningarna, som presenteras i detta dokument, modebutiker en hållbar ekonomisk fördel som uppnås genom kostnadsbesparingar och ökad affärsresultat, liksom, motivationen att fokusera på sociala och miljömässiga aspekter relaterade till dessa metoder.

Nyckelord: snabbväxande mode, butiksdrift, butiks effektivitet, lagerprocess, RFID adoption, outsourcing, mode detaljhandels flödesschema, RFID genomförande, outsourcing genomförande
Foreword

This study has been conducted during the spring of 2016 as a master thesis at the department of Industrial Engineering and Management at KTH Royal Institute of Technology in Stockholm, Sweden. The thesis was the equivalent of a 30 credits university course of a master level.

This publication has been produced during Santiago Gomez scholarship period at KTH Royal Institute of Technology, thanks to a Swedish Institute scholarship.

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In the past five months, we have had the chance to talk to people from around the world who trusted us with their knowledge and wisdom. Their expertise and contribution were essential to generate relevant solutions and valuable conclusions. We express our sincere gratitude to all of them.

We would like to thank our mentor, Head of Store Operations at the case company, together with the Sales and Marketing department, who despite a hectic spring, engaged in the research process and spent time on valuable discussions related to the master thesis work. The Store Operations Manager in Mexico and the RFID Project Manager at the case company are two individuals who dedicated a lot of their time helping us shaping our ideas and that is why we would like to express our gratitude to them as well.

At the same time, we want to express our appreciation to our supervisor at KTH Royal Institute of Technology, Bo Karlson, who is a truly inspiring professional. We are extremely thankful for his assistance and suggestions throughout our project. He had to deal with our delusions and we believe he has done a great job by keeping us on the ground. The results provided in our thesis work would not be the same without him.

Lastly, we would like to dedicate a particular thanks to our families, close friends and boyfriends for supporting us throughout the project, especially during hard times. The time you dedicated listening to our problems and your patience have been highly appreciated by us.

Thank you!

Stockholm, May 2016

Santiago Gómez and Aleksandra Korościk
Abbreviations

DOI: Diffusion of Innovation
EAS: Electronic article surveillance
FF: Fast fashion
GD: Golden Delivery
GRTB: The Global Retail Theft Barometer
NDA: Non-disclosure agreement
OCR: Optical character recognition
OM: Operations Management
PET: Polyethylene terephthalate
RBV: Resource Based View
RFID: Radio frequency identification
ROI: Return on investment
RQ1: Research question 1
RQ2: Research question 2
RQ3: Research question 3
SC: Supply chain
SCM: Supply Chain Management
SLPI: Daily Stockroom Planning Tool
SO: Store Operations
TCT: Transaction Cost Theory
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1. Introduction

This chapter gives a brief overview of the transformation happening in the fashion retail industry, more specifically in the Store Operations area. Moreover, problem formulation, purpose, research questions, delimitations, and contribution of this research are presented.

1.1. Background

1.1.1. Fast Fashion Industry and Store Operations

The fashion apparel industry has significantly evolved over the last 35 years due to the diversification of mass production, the incremental number of fashion seasons per year as well as the structural modification of its supply chain (Doyle et al., 2006). A product-driven approach based on ‘quick response’ used during 1980s evolved in the late 1990s to a market-based model, known today as ‘fast fashion’ (Bhardwaj and Fairhurst, 2010).

Due to this phenomenon, several authors, such as Wheelright and Clark (1992), Jackson (2001) and Franks (2000), have identified quick responsiveness and flexibility as key factors to succeed in this competitive and dynamic industry. In addition, Bhardwaj and Fairhurst (2010) have pointed out that inability to quickly sell clothes seen on runways or failure to correctly predict future trends could result in loosing fashion-conscious consumers.

In this context, fast fashion companies transform latest trends spot at fashion shows into low-cost versions in a matter of weeks (Reinach, 2005). There is thus a rapid speed in turnaround time from design to shop floor (Barry, 2004). Traditionally, fashion retailers buying strategy was season based, but instead, fast fashion retailers have adopted a more flexible model. This means that the buying process is divided into multiple stages and production levels depend on how consumers are reacting to current trends (Barry, 2004; Bhardwaj and Fairhurst, 2010). In contrast to the traditional players, fast fashion chains focus on low cost and low replenishing times (Lorentzen et al., 2015). This business model is used by the largest European, American and Asian fast fashion retailers (Barnes and Lea-Greenwood 2006). The case company is one of the biggest players in the world, and thus, it will be used as a tool to better understand the topic under analysis.

Fashion trend analysis, Supply Chain Management and Store Operations are at the core of the case company’s strategy (Yuntak, 2013). As defined by Martinez (2015), Store Operations are all the activities and procedures that keep the store functioning well. It includes assortment planning, staffing, store layout, cash operations, inventory control and store best practices. To stay at the
forefront of the fashion industry, in-store efficiency must be continuously increased by implementation of innovative solutions and incorporation of new technology (Finch, 2014). Taking into consideration the growth rate of the case company and the other big players in the fast fashion industry, it is crucial to analyze how their stores are operating in order to maintain competitiveness.

1.1.2. Transformation of Store Operations

Even though the textile industry was the protagonist during the industrial revolution, historically it has been a late adopter of new technologies (Ziv, 2010; Egberg, 2011). That being said, fashion retail experts point out that in the last few decades, new vertically integrated players have appeared in this industry providing their customers with lower prices (Gustafson et al., 2004; Roberti, 2006). In this context, new technology and more efficient processes play a vital role in the improvement of Store Operations of this type of retailers.

With the end objective of increasing efficiency and maintaining competitiveness, companies focus more and more on their supply chains (Ketchen and Hult, 2006). This phenomenon is even more prominent in clothing retailers, where on-time delivery to the right place can affect sales considerably (Oliver Wyman, 2015). Whilst efficiencies in the supply chain have facilitated fast fashion’s success, centralized control structures have meant that these efficiencies and flexibilities have not been translated into the retail store environment (Barnes and Lea-Greenwood, 2010). According to Broekmeulen et al. (2006) handling of products constitutes 38% of total operational costs in the store, and thus, changes in this area can have an important impact on the financial sustainability of the fast fashion businesses. Most of the garment handling (or garment care) in the fashion retailers takes place in the stockroom, and consequently, the activities that occur there, constitute an important area of investigation. Stockroom process includes the activities of unpacking the garments from the delivery boxes, tagging those garments with security tags and finally hanging them on racks to take them to the shop floor (Retail Minded, 2010).

At the same time, working conditions have been affected by the development of the fast fashion concept. There is evidence that the high number of responsibilities and the pressure of delivering big amounts of garments on time to the shop floor create pressure among employees that has direct impact on their health and well being (Babin and Boles, 1996; Broadbridge, 2002). Moreover, studies show that the repetitive characteristic of the activities performs in the store might lead to employee dissatisfaction and also chronic stress (Huber et al., 1985). In addition to that, Alden et al. (2013) claims that success in retail operations depends largely on people, namely the customers and the employees, and also the interactions between them. Thus, according to the same authors, in order to succeed, it is essential to listen both to the staff and to the customers.

The analysis presented in this document evaluate the development and implementation of two alternatives to adapt Store Operations to the transformations just mentioned: RFID and outsourcing / Golden Delivery.

RFID

New technological developments alter the way retailers operate and design their strategy (Berman, 2010). Information related to buying behaviors, consumer trends and real time tracking of products create new opportunities to increase efficiency of operations and provide customers with a better value proposition (Pantano and Di Pietro, 2012). Among the most recent technological developments in the retail stores, radio frequency identification (RFID) appears as one of the most
efficient alternatives of automatic identification systems (Finkenzeller, 2010). The characteristics of this technology have been the focus of attention of the biggest fashion retailers in the last decade, raising the total market value of this technology to $10.1 billion in 2014 (Das and Harrop, 2015).

**Outsourcing / Golden Delivery**

The stockroom process is the last component of a traditional supply chain and it is the only process that occurs inside the store (Thomachot, 2009). As currently performed, this process is not seen as a tool to increase supply chain flexibility and profitability (Hult et al., 2004). The alternative of performing the stockroom process outside the store premises increases efficiency, not only in the store, but also in the supply chain as a whole.

Lei and Hitt (1995) defines outsourcing as ‘the reliance on external sources for manufacturing components and other value-adding activities’. Moreover, while Gilley and Rasheed (2000) view outsourcing as ‘the discontinuation of internal production, whether it be production of goods or services, an initiation of procurement from outside suppliers’. Since Store Operations can be seen as an independent organization with defined objectives, the alternative of performing the stockroom process outside the store premises, by the Logistics department of the same company or an external firm, is evaluated in this study as an outsourcing practice. The case company labels this outsourcing practice ‘Golden Delivery’ (GD). Even though different fast fashion retailers have tried GD in the past (Berfield and Baigorri, 2013) it has been never analyzed from an academic perspective.

**1.2. Problem formulation and purpose**

The adoption rate of new technologies as well as the supply chain efficiency have increased considerably among fast fashion retailers in the last decades, and falling behind in these areas can be critical for the survival of these organizations. Store Operations is affected by this phenomenon and it is the area that deals directly with sales. Thus, prioritization of Store Operations areas of improvements and identification of the most suitable solutions for those areas are of extreme importance.

This task becomes difficult when routine activities take most of the daily time in the stores and procedures must be designed for employees across six continents. Furthermore, having satisfied employees in order to create a better customer experience is not anymore an option, but instead, a necessity of any sustainable fast fashion business. All under constant pressure of maintaining low prices as a competitive advantage.

Therefore, the main purpose of this research is to better understand fast fashion retailers’ Store Operations, as well as the influence of new innovative practices and technologies on the processes of this department. All with the final goal of increasing Store Operations’ overall efficiency.

In order to fulfill this objective, a case study on one of the world’s biggest fashion retailers was conducted.
1.3. Research questions

1.3.1. General question

How can established fast fashion retailers improve their Store Operations in order to cope with growing efficiency requirements and rapidly changing technology in their stores?

1.3.2. RQ1

What are the most important areas of improvement affecting Store Operations?

1.3.3. RQ2

What solutions can be developed to improve Store Operations?

1.3.4. RQ3

How can RFID and Golden Delivery be implemented to improve Store Operations?

1.4. Delimitations

The main unit of analysis in this study is Store Operations and this area is delimited to five sub-areas, according to the result of RQ1. At the same time, even though different solutions are presented to improve the areas identified in RQ1, only RFID and outsourcing are deeply analyzed. Due to the amount of time, benchmarking analysis was only performed during pre-study and the investigation was mainly focused on one single case company. Nevertheless, since this company is a clothing retailer with one of the highest amount of stores worldwide, the results of this study could be also replicated in other fashion retailers with similar characteristics.

In terms of geographical extension, delimitations were needed due to limited time and resources. The case company’s employees from ten different markets were interviewed. These markets were selected with a purpose of having a global representative sample of the case company. Having said that, while testing the outsourcing evaluation framework, only one market (Mexico) was used. This is related to the high level of expertise found in that specific market.

Finally, this master thesis work was developed in a period of four months. Therefore, the solutions under study were only the ones that could be analyzed and tested in that time.

1.5. Contribution

1.5.1. Academic Contribution

The study contributes to the literature by giving a better understanding of the operational activities performed in the store environment of fast fashion retailers as well as the link between them and the rest of the supply chain. Moreover, alternatives on how to improve garment flow and reduce activities that do not add value in the store are presented. This research also intends to reduce the knowledge gap that currently exists in relation to stockroom process and to the way of increasing operational efficiency in this type of retailers.
Furthermore, information in relation to the adoption of RFID is presented in the fast fashion retail environment, as well as the strengths, opportunities, weaknesses and threats of implementing this technology as a security device. A cost analysis structure to evaluate the implementation of RFID embedded in care labels is also provided and can be used for future quantitative analysis of similar technologies.

Lastly, this investigation provides a clear list of all the aspects that should be taken into account while evaluating the strategic outsourcing of stockroom process, as well as the consequences of this practice. In order to facilitate that evaluation, a framework was developed and tested.

1.5.2. Managerial Contribution

This investigation contributes to the case company and other similar fast fashion retailers by identifying areas of improvement related to Store Operations. These results provide them with a better understanding of the activities that are most disliked by their employees, of the aspects that are considered most important by their customers, as well as the technological innovations that are available today.

In addition, this document presents RFID and outsourcing as alternatives to reduce the repetitive tasks currently performed in the store environment. Moreover, the conditions and aspects to consider while implementing these alternatives are provided in order to improve employee satisfaction, customer experience and long-term sales. Finally, implementation guidelines for these solutions are presented.

1.6. Disposition

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2. Literature Review

In this section, existing theoretical background of the presented research is provided. Literature related to Fast Fashion Supply Chain, Store Operations, Stockroom Process and RFID is analyzed.

2.1. Introduction

In order to answer the research questions presented in section 1.3., five major areas are analyzed. The literature review is divided according to these five areas and further divided into subchapters. Also, current challenges and weaknesses, as well as the gap in the literature for each area, are described. The relationship between the different areas discussed in this chapter and the theories presented in chapter 3 is shown in Figure 2.

![Figure 2. Relation between topics presented in the literature review.](image)

2.2. Fast Fashion Supply Chain

Taking into consideration that every link along the fast fashion supply chain has a big influence on the delivery pace of garments to the stores, stock rotation and availability to customers, evolution of
current Logistics practices is critical to remain competitive (Bruce and Daly, 2006). Nowadays, the success of fast fashion companies relies on constant design, production and introduction of several new collections throughout the year (Khan and Pillania, 2008; Christopher et al., 2004). According to Larenaudie (2004), the time between design and delivery of these products to the store varies among fast fashion retailers but it can be only six weeks. This represents a big difference in comparison with traditional retailers, which according to the same author, work with average buying cycles of 10 months and a fixed number of four fashion seasons per year. Even though the aspect of speed in this type of supply chains is highlighted, not much information has been found in relation to how it can be improved in practice at big scales.

With the objective of understanding how elements of the fast fashion supply chain are connected, several sources were studied. However, not many publications were found in relation to this specific industry. One of the exceptions was the one of Thomachot (2009), which states that the fast fashion supply chain combines six main elements (Figure 3). According to the same author, suppliers, manufacturers, Logistics’ responsible and store controllers work in coordination to deliver the right product at the right time where it is needed. Even though none of the biggest fast fashion companies combine these elements in the exact same way, this model can be used as a good estimation of their supply chain structure.

![Figure 3. Key elements in a fast fashion supply chain (Thomachot, 2009).](image)

Within the supply chain topic, a special attention was given to the distribution centers. The reason behind this is that they in contact with the retailer, and thus, Store Operations. At the same time, the outsourcing solution is closely related to these elements of the fast fashion supply chain. One of the very few studies conducted in relation to this topic is the one presented by Orcao and Perez (2014). According to them, the characteristics of current global supply networks create the need for strategically located distribution centers between the production centers and the point of sales (POS) in order to increase efficiency. As it can be seen in Table 1, the location and amount of distribution centers vary depending on the global fast fashion retailer. In the analysis performed by these authors, it is possible to observe two extremes. On one side, H&M as an example of a retailer having distribution centers in every sales market, and on the other Inditex, with all the distribution centers in its country of origin, Spain.
<table>
<thead>
<tr>
<th>Company</th>
<th>Number of distribution centers</th>
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<tr>
<td>H&amp;M</td>
<td>One in each of the sales markets</td>
</tr>
<tr>
<td>Gap</td>
<td>Chiba (Japan) and Shanghai (China)</td>
</tr>
<tr>
<td>Benetton</td>
<td>Castrette (Italy), Mexico City (Mexico) and Shenzen (China)</td>
</tr>
<tr>
<td>Inditex</td>
<td>Eleven centers, all in Spain</td>
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Table 1. Number and location of distribution centers of biggest fast fashion retailers (Orcao and Perez, 2014).

Even though Orcao and Perez (2014) also highlight the replenishment frequency of some retailers, no information has been found in relation to the average available time of the industry between the moment the pieces are sold until they are replenished in the stores. In relation to this topic, Abernathy et al. (2006) argues that nowadays levels of stock are very low in distribution centers and, as a consequence, lead times are very short. Abernathy et al. (2006) and Fiorito (1995) also introduce an important concept for the investigation presented in this document. They describe ‘floor-ready’ garments as those that arrive to stores with hangers and alarms in place, allowing the sales advisors to take them to the shop floor immediately after delivery.

### 2.3. Operations Management in fashion retail

A crucial part of any supply chain is the operations management (OM), which according to Slack et al. (2010), is the activity of managing resources that are devoted to the production and delivery of products and services. It embodies the organization’s capabilities, which determine its future options (Eades et al., 2010). As Slack et al. (2010) state, nowadays the focus of most operations managers has moved from planning and control to improvement. Moreover, according to the same authors, organizations operating in many industries need to improve their operations simply to retain their position relative to their competitors. (Slack et al. 2010)

In the retail industry, and specifically in fashion, OM involves analyzing, understanding, and potentially improving the processes in each part of the chain, from distribution centers to stores, including transportation and other distribution activities (Van Woensel et al., 2010). While analyzing the literature the focus was put on the Store Operations (SO), since over the last 15 years, academic research has shown the evidence that retail store execution and operations constitute as the most substantial challenges of the retail supply chain (Raman et al., 2001; Donselaar et al., 2006; Ton and Huckman, 2008). According to Eroglu et al. (2012), even correct planning may end with undesirable results due to the poor SO execution. Moreover, according to Andersen (1997), optimization of SO is an essential component of achieving success in the retail sector. Despite that, there is a shortage of publications focused on operations at the store level, and thus, a gap in the literature can be found in relation to this topic.

#### 2.3.1. Store Operations

As mentioned previously, Store Operations are all the activities and procedures that keep the store functioning well (Martinez, 2015). According to Chen and Mersereau (2015), those are the elements that store managers can influence the interactions between associates, merchandise, and consumers, in order to increase profits for the organization. This is confirmed by Shim et al. (2002), who claim
that store managers are the key driving force behind a retail company's profit. Furthermore, as stated by Berman and Larson (2004), SO takes place both in the front room, otherwise called shop floor, and in the back room, also known as stockroom. In the shop floor, employees mainly focus on serving customers and dealing with queues. In the stockroom, on the other hand, they typically perform the unpacking, security tagging and hanging of garments, besides processing of paperwork.

An interesting model that identifies five core elements of Store Operations and provides a tool for the improvement of this area has been found. The five elements (Five Ss) of the ROIT (Retail Operations Improvement Tool) created by Pal and Byron (2003) include: space, stock, staff, systems and standards, and all of these factors have direct impact on customers’ experience. This model constitutes the guideline for this section of the literature review.

Substantial amount of articles was found in relation to the topic of inventory management and control, which corresponds to the ‘stock’ element of the ROIT model (Pal and Byron, 2003). Since one of the biggest challenges for fast fashion retailers is to have all sizes and designs available in the store at the right time, efficient stock levels are of high importance. As a consequence, size availability is one of the main customers complain (Case company, 2015) and the consumers switch brands when they do not find the credible alternative product (Gruen, 2003; Pal and Byron, 2003), which have direct impact on the company’s sales (Dubelaar et al., 2001).

A wide range of literature related to staffing was also found. Alden et al. (2013) claim that success in retail operations depends largely on people, namely customers and employees, and also the interactions between them. Thus, according to the same authors, in order to succeed, it is essential to listen to both, staff and customers. In the same report, Alden et al. (2013) suggest that administrative activities in the store should be reduced with the objective of increasing the time of store managers on the shop floor, and thus, their contact with customers. Moreover, according to Ernst & Young (2013), store labor is the largest category of controllable non-product cost for retailers and that is why major retailers have lately invested heavily in labor planning software. Aligned with this idea, McKinsey (2015) suggests that even high-end retailers find substantial room for improvement in the area of scheduling. The consequences related to this inefficiency include high labor costs, inconsistent customer service, and dissatisfied employees. However, limited literature was found in regard to the way those issues should be tackled.

Few reports were found in relation to store layout efficiency and queue management in the fast fashion industry, which translates to the ‘space’ category of the ROIT model (Pal and Byron, 2003). The article written by Newman and Foxall (2003) shows methods on how retailers can optimize space, but it is not addressed specifically to fashion retailers. Berman and Larson (2004), on the other hand, developed a model that defines the optimal number of store employees that should be in the shop floor and in the stockroom, taking into consideration number of customers in the store and potential queues. The authors of this paper believe that it is a useful model in the SO field, however it has little relation to the subject of this thesis.

The ‘standards’ and ‘systems’ elements of the ROIT model (Pal and Byron, 2003) correspond to the best practices related to stockroom process. Since this process is one of the most relevant topics within the Store Operations in relation to this thesis. There is a noticeable shortage of literature in this field and this issue will be addressed in the following section of this chapter.
2.4. Stockroom Processes

Best practices are defined by Merriam-Webster (n.d.) as ‘procedures that have been shown by research and experience to produce optimal results and that are established or proposed as a standard suitable for widespread adoption in the Store Operations’. As mentioned before, even though there is limited literature in relation to this topic, Pal and Byron (2003) suggest that large, multinational retailers require systemized operations. According to the same authors, these operations are essential for sharing the best practices across a network of stores and for harvesting their efficiencies. After performing an extensive analysis on this topic, it is believed that the reason for the lack of literature in this field is the very practical nature of it. Therefore, this subchapter will be focused on the garment handling, which, according to Zelst et al. (2009), typically forms the largest share of operational costs for the store and it is a main part of the best practices in the stores. According to Broekmeulen et al. (2006) handling of products constitutes as 38% of total operational Logistical costs (Figure 4 below). This means that even slight improvements in this area will have a large impact on company’s profits.

![Figure 4. Operational Logistical costs in the retail supply chain (Broekmeulen et al., 2006)](image)

In the fashion retailers most of the garment handling (or garment care) takes place in the stockroom, and thus, the processes and activities that occur there, are a crucial part of this study. These activities might include: unpacking, tagging garments with security tags, folding and hanging garments on the racks (Retail Minded, 2010).

The case of the Swedish fast fashion retailer Gina Tricot was specially analyzed due to the similarity of the stockroom process of this company and the one perform at the case company. According to the authors investigating Gina Tricot (Joelsson and Waller Tuvert, 2013), that company does not deliver the garments ‘floor-ready’ to the store, and instead, hangers and hard tag alarms are added, once the boxes arrive to the store (Figure 5). In the same study, Joelsson and Waller Tuvert (2013) suggest that fewer activities should be performed in the store, and therefore, alarms and hangers should be placed on the garment before getting to the store. Even though the authors do not specify how this should be done, they argue that this initiative would improve the overall performance of the business.

![Figure 5. Activities performed by Gina Tricot store employees after receiving garments from distribution center (Joelsson and Waller Tuvert, 2013).](image)
In order to understand how time-consuming those procedures are, it is essential to bare in mind the wide variety security tags and hangers the fast fashion retail employees have to cope with.

2.4.1. Electronic Article Surveillance (EAS) systems

Due to the fact that shrinkage is one of the main worldwide problems faced by the apparel industry, with shrinkage rates reaching 1.79% (Bottani et al., 2011/2012), which translates to 44 billion in losses for retailers in 2014 in the United States only (National Retail Federation, 2014), retailers need to put extra attention on their Electronic Article Surveillance (EAS) solutions (Bottani et al., 2011/2012). A wide range of literature was found in this specific area, but no literature was found about the actual alarm tagging process that retail employees need to perform. It is believed that, again, this is due to the practical nature of this practice.

According to Sensormatic (n.d.), all EAS solutions operate in the similar manner, which involves sending signal by a transmitter to a receiver, which then creates a detection zone, or a surveillance area. After the EAS label or tag enters the surveillance area, a disturbance is created, which at the same time is detected by the receiver and causes the alarm to be activated (Sensormatic, n.d.). This technology has been in use for almost 50 years now and is designed in order to increase the risk of the thief being caught (Beck and Palmer, 2011). The most common EAS technologies in the apparel industry include: magnetic systems, which are divided into Electromagnetic (EM) systems and Acousto-Magnetic (AM) systems as well as Radio Frequency (RF) systems (Bottani et al., 2011/2012; Herzer, 2003; Honeywell, 2009).

As stated by Herzer (2003), magnetic anti-theft labels are built from a thin magnetic strip, which acts as a sensor as well as a semi-hard bias magnet, which has activation and deactivation capabilities. Within magnetic EAS systems, EM systems are mostly used in libraries or for low cost apparel merchandise (Bottani et al., 2011/2012) and they normally operate in low frequencies ranging from 70Hz to 1KHz (Honeywell, 2009). AM systems, on the other hand, are, according to Honeywell (2009), the most recent innovation within the electronic article surveillance industry and are now widely used in the retail sector (Sensormatic, n.d.). Unlike EM, AM systems operate on a very specific frequency: 58 kHz and they can protect areas in excess of five meters (Honeywell, 2009).

According to Honeywell (2009), RF systems are one of the most widely used EAS systems in retail, leading even over the AM systems. They operate on the frequency ranging from 7.4 MHz to 8.8 MHz, with a center frequency of 8.2 MHz.

Another type of EAS systems is RFID, which according to Bottani et al. (2011/2012), functions in a similar way to RF system. Due to the substantial amount of literature found on this subject and the importance of this topic in relation to this thesis, RFID is described in the separate subchapter titled RFID.

2.4.2. Hangers

Even though there exist various types of clothes hangers, which implicates complicated hanging processes for fashion retailers, no literature was found on this specific topic.

Since Olds (1852) first patented a garment hanger as a device for retail display of ready-to-wear apparel, hangers have had a major impact on almost every aspect of fashion retailing, from
production to the shop floor (Farrell-Beck et al., 2000). Nowadays there exist a vast variety of hangers with different sizes, purposes and materials, which include: plastic hangers, wire hangers, wooden hangers, tubular hangers, padded hangers and specialty hangers. The latter ones are designated for unusual garments and they can be divided into the following subtypes: skirt/slacks hangers, which consist of a metal rod and plastic or metal clips on it that prevent sliding, notched hangers, which are designed for garments with straps, and salesman’s hangers, which are made from chrome and are perfect for salespeople transporting garments or trade-shows (Waters, n.d.). This variety has direct impact on the time that retail employees have to spend on hanging the garments, which directly translates to employees’ well-being (explained later in this chapter) and large labor costs for the retail organization.

2.5 Automatic Identification Systems

Due to the fact that radio frequency identification (RFID) has been adopted more and more in the retail industry lately (Grackin, 2014), it is important to understand the characteristic of this technology in relation to other automatic identification system to assess RFID full potential in fast fashion industry. At the same time, literature about the relation between RFID, electronic article surveillance (EAS) and shrinkage reduction was also analyzed.

Following Finkenzeller (2010) definition of automatic identification systems as a set of things created to obtain information about goods and products in transit, it is possible to identify several of these systems in the retail stores. The well-known barcode labels is one of them. The principal benefit of this technology is its low cost, since only a code and a reader are required. Among its disadvantages, the main one is the fact that scanning individual barcodes through a window takes time and cannot be reprogrammed after it is printed (Elrharbi and Barbu, 2013).

Another technology that is used every day in a variety of environments is the smart card, which is based upon a contact field. The main disadvantage of this system is that the card has to be swiped in the reader, which is often very impractical, especially in the retail environment. Other disadvantages include possible negative influence of dirt and degradation of the contact area, medium operating costs and the low reading speed (Finkenzeller, 2010).

As highlighted by the same author, radio frequency identification (RFID) systems seem to be more practical than the technologies mentioned before. The reasons behind this statement are that RFID can store big quantity of data, suffers no influence of dirt, degradation due to contact or direction of reader. Moreover, it has no operating cost, its reading speed is very fast and its data carrying device works far from the reader.

2.5.1 RFID

Radio frequency identification is defined by the RFID Journal (n.d.) as ‘a generic term for technologies that use radio waves to automatically identify people or objects’. Even though there are two types of RFID tags, the ones considered in this research are the passive tags, which according to the same source, are the ones without own power that can only react to the waves of the readers.

According to Das and Harrop (2015), the total market for this technology was worth $10.1 billion in 2015, up from $9.5 billion in 2014 and $8.8 billion in 2013. These figures not only include the RFID tags, but also the infrastructure needed around them in all types of industries. The same authors
forecast that by 2020 the RFID market will be worth more than 30% in comparison with 2015 figures.

Some of the biggest obstacles for RFID have been the technological challenges and the lack of universal standards. According to Grackin (2014), experts and companies have been working on those issues for the last decade and that is one of the reasons why RFID has been adopted more and more in the retail industry lately. Das and Harrop (2015) provide information that supports the fact that this technology is growing considerably in the textile industry. According to them, 4.6 billion RFID labels will be demanded in 2016, reaching almost 15% of the total garments market.

While performing the literature review, it was possible to observe that most of the information in relation to practical cases of RFID was connected to its customer experience enhancement characteristics and not to the efficiency ones.

**RFID as loss prevention device**

Due to the length and depth of his investigation, Bamfield (2011) can be considered as one of the experts in RFID acting as EAS device. He suggests that placing tags during the production process can have a lower cost and also be more efficient than tagging those products later in the supply chain process. According to him, in 2011, an average of 21.3% of total tagged products were tagged while being produced. This figure is approximately 2% higher in Europe and a bit lower in the USA. The most interesting finding of his investigation is that the product category with the highest percentage of products tagged at source is apparel, with almost 25% of total units.

Furthermore, after performing a series of interviews with prevention managers, Bamfield (2011) discovered that almost 40% of them thought that the primary function of RFID in the retail environment was related to inventory visibility and management. Just 20% of the interviewed managers believed that the main purpose of implementing RFID was related to the security needs of the stores.

Another valuable investigation is the one performed by the University of Arkansas, USA. The RFID Research Center at that university tested different shoplifting scenarios with the objective of understanding how RFID can be used a security device in those situations. Patton (2008) describes these scenarios characterized by big amount of articles equipped with RFID tags passing by antennas at a high speed. One of the most important tests performed as part of that investigation was the one where a ‘booster bag’ was used. This type of bag is covered with a thin sheet of aluminum and it is normally used to block the signal of the retailers’ antennas. In every test performed, the ultra high frequency generation RFID tags worked as well as or better than the conventional alarm systems.

Some authors emphasize the idea that RFID as EAS minimize product shrinkage (Sounderpandian, 2006; Huber, 2007). Hardgrave (2014) goes even further assuring that RFID will replace traditional alarm systems in the retail stores. This author bases his assumption on the fact that, with RFID, it is possible to prevent loss, since this technology allows the retailer to identify which items are usually stolen. By having this information, it is possible to move those items to a more visualized place in store or warn sales assistants to particularly pay attention to those pieces of garments. At the same time, fixed RFID readers in the shop floor could alert personnel while two identical items are taken to the fitting room or while a large number of items are removed from a shelf at the same time. In order to take advantage of these applications, Hardgrave (2014) argues that the RFID tags must be
embedded into the care labels of the garment or they must be sewn into apparel so they cannot be easily removed.

Several cases of companies using RFID tags as EAS were found while performing the literature review. The French sporting goods retailer, Decathlon, is currently using sewn RFID tags in all its merchandise in order to take full advantage of the deployment of this technology worldwide. In those items with high theft risk, Decathlon also uses traditional hard alarm tags that must be detached at the point of sale (Dirks, 2015). Another example is the one of the outdoor clothing and equipment retailer, Northland. In this case, the company has invested in infrastructure that provides the security company with messages every time someone leaves the store with an unpaid item. These messages provide an exact description of the missing item and therefore they help security personnel to identify the possible thief (O’Connor, 2008). Another important case of RFID used as EAS is the one of Gerry Weber. This company started using this technology in 2011 and since then its Logistics provider has stopped attaching traditional hard tags. According to the provider of its RFID tags, Avery Dennison (2011), this represents savings of about €0.35 per item.

It is possible to argue that source tagging or tagging during the production process is still not spread widely, but previously presented information demonstrates that this is currently changing. Violino (2015) report is aligned with this idea, since he forecasts wide-scale adoption of this practice in the upcoming years.

After analyzing a wide variety of publications, it is possible to conclude that nowadays there are no studies related to how RFID affects shrinkage in the stores if it used as EAS. Even though retailers that are using RFID as a security device argue that shrinkage decreases with the use of this technology, no practical study provides empirical data that confirms this allegation.

2.6. Working experience and customer satisfaction

Customer satisfaction is an essential component of any business that seeks for long-term success. In order to understand what makes employees and customers happy and the connection between employees’ satisfaction and customer service, literature in relation to these topics has been analyzed. The significance of this relation is based on the fact that both are main objectives of the area under analysis, Store Operations. Findings in this area of investigation will provide an important background for the solutions tackling the discovered areas of improvement.

2.6.1. Working Experience

After analyzing previous research in relation to what retail employees dislike the most, it is possible to say that there is no one specific activity that negatively affects employees’ well being. Instead, authors like Whysall et al. (2009) suggest that dissatisfaction in this environment is a consequence of different elements. Even though the list of these elements is quite extensive and varies among authors, the most relevant ones for this study are related to the levels of stress in the stores, the physical demands of the job and the repetitive tasks that have to be performed.

The amount of activities that have to be conducted in retail outlets is described by Babin and Boles (1996) and Broadbridge (2002) in their respective studies. According to these authors, the high number of responsibilities and the pressure of delivering everything on time to the shop floor, create pressure among employees, which has a direct impact on their health and well being. In the same studies, concerns in relation to the characteristics of the activities performed in the store were also
raised. Being standing up during long periods of time, moving heavy interior in the stores and big amount of garments, result in physical demands that must be confront everyday by retail employees. This negatively impacts their perception of a satisfactory working environment. At the same time, Miksen (n.d.) highlight in his study that repetitive tasks reduce motivation and create boredom among employees. Consequently, the level of performance decreases and the disinterest in the job rises. In relation to the same topic, Huber et al. (1985) argue that monotonous work not only lead to employee dissatisfaction, but also to chronic stress.

The amount of research found connected to the factors that affect employee satisfaction are significant. Having said that, studies connected to policies aimed to improve working experience in FF retailers are very limited.

2.6.2. Customer Satisfaction

Lack of time in modern lifestyle is a common characteristic that influences the way people buy their clothes. According to Reynolds and Beatty (1999), consumers prioritize more those everyday products or services that are easy to get. In this context, Beatty et al. (1996) suggest that customer service can be improved by just having sales assistants helping clients do their shopping.

After interviewing 113 retail customers, Reynolds and Beatty (1999) realized that customers leave stores happy when they find attentive employees that are willing to engage with them to answer their queries. The level of satisfaction increases when queries are answered with knowledge and effort to solve their problems.

In a similar study focused on fashion retailers, Islam et al. (2012) explore the relation between the quality of the service provided, the satisfaction from the customer side and the creation of a strong feeling of support for the brand. After analyzing a total of 1126 customers from 14 fashion retailers, these authors concluded that personal interaction was among the top three most important factors that influence customer satisfaction.

The literature analyzed shows the relation between happy customers and employee availability on the shop floor. Even though a wide variety of studies related to this topic was analyzed, research in relation to cultural differences and customer service was not considered, since the problems and solutions provided in this document are global.

2.6.3. Relation between working experience and customer satisfaction

In order to corroborate the idea that happy employees create happy customers, different studies were evaluated. Even though majority of the analyzed authors agree that employees’ satisfaction directly impacts customers’ satisfaction (Spinelli and Canavos, 2000; Chi and Gursoy, 2009; Wagenheim et al., 2007; Bernhardt et al., 2000; Hyo Sun, 2013), some of them believe this relation is more complex. Garlick (2010), for example, suggests that customer satisfaction is influenced by the interaction with employees, but also by the whole experience since the moment the customer enters in the store.

The analyzed literature proves that the investigation of a social factor cannot be isolated and must be considered as part of a system with inevitable interaction between its elements.
3. Theory

In this chapter outsourcing and innovation theories are presented.

3.1. Supply Chain

Since efficiency is nowadays essential to maintain competitiveness, companies focus more and more on their supply chains in order to increase profitability and the service provided to their customers (Ketchen and Hult, 2006). As mentioned previously, this phenomenon is even more prominent in clothing retailers, where on time delivery in the right place is critical (Oliver Wyman, 2015).

Taking into account that outsourcing definitions presented in the ‘Introduction’ chapter and that Store Operations can be seen as an independent organization with defined objectives, the alternative of performing the stockroom process outside the store premises, is evaluated in this study as an outsourcing practice. Therefore, outsourcing theories were analyzed and used as ground base for this research.

3.1.1. Outsourcing Theories

In order to identify what parameters should be taken into account when outsourcing is evaluated, different theories were assessed. Traditionally, outsourcing has been seen as a tool to reduce costs and not as a way to create competitive advantage (Zhu et al., 2001). Recently, a broader perspective of this practice has been developed, taking into account more than just costs. While performing the literature review, the following outsourcing theories were identified as the most relevant: transactional cost, relational view, core competences, resource-based view, evolutionary economics and neoclassical economic.

From those theories, special attention was given to transactional cost (TCT) since it has been the most used theory to evaluate subcontracting practices in the last decades (Perunović and Pedersen, 2007). According to the same author, TCT provides organizations with instruments to best determine what is the most cost efficient way of performing their operations. One of the critiques of this theory highlighted by Perunović and Pedersen (2007) is that TCT depends on individual transactions as elements of study, failing to care for those factors that are part of the context or industry. At the same time, as explained by the same author, this theory is static and that is why it can be inadequate for fast changing industries.

The other theory deeply analyzed was Resource-based view theory (RBV) since it focuses on competences and available resources that can improve the performance of the organizations involved in the outsourcing process (Barney and Hesterly, 1996). The main critique to this theory is
that, even though the strategic capabilities are identified by this theory, it doesn’t state how an organization should develop these capabilities if missing (Connor, 2002).

**Strategic Outsourcing**

Taking into consideration the characteristics of the previously presented outsourcing theories and their respective critiques, TCT and RBV were identified as the most relevant tools to successfully analyze if stockroom process should be performed outside the boundaries of fast fashion retail stores. The utilization of these two theories combined together creates a better understanding of the factors that power strategic outsourcing. The model that combines these two theories was created by Holcomb and Hitt (2006) and it is presented in Figure 6. Since this model considers economic aspects and value creation factors, it was used as a reference while performing this investigation.

![Figure 6. Theoretical model for strategic outsourcing (Holcomb and Hitt, 2006).](image)

**Transaction cost theory (TCT)**

Transactional cost theory is based on the idea that, in specific circumstances, costs of interacting with other organizations could be too high. In those cases, it is then recommended to keep activities in the organization, instead of outsourcing them (Grover and Malhotra, 2003). As suggested by Ernest (1992), transaction costs can be described by two main components: coordination costs and transactions risk.

Grover and Malhotra (2003) describe coordination costs in a simple way by saying these are the costs associated with trading and assimilating information into the decision process of the organization. This information could be related to market knowledge, product, processes, and prices, among others.

On the other hand, transactions risk is defined as the risk associated with the reduction of the responsibilities assumed by the outsourced organization after these responsibilities are accepted by contract (Clemons et al., 1993). As part of their strategic outsourcing model, Holcomb and Hitt (2006) highlight three components of the transactions risk: asset specificity, small numbers bargaining and technological uncertainty.
According to Grover and Malhotra (2003), asset specificity is related to the transferability of the elements that are necessary to maintain an efficient transaction between the outsourcing and the outsourced company. If these elements are highly specific to the interaction between two organizations, they increase outsourcing costs since these costs can not be shared with other companies. In this context, Holcomb and Hitt (2006) formulate their first proposition.

**Proposition 1:** ‘Requirements for firm-specific investments by a focal firm in exchange-specific assets between the firm and specialized firms from intermediate markets negatively affect the likelihood a firm will pursue strategic outsourcing.’

Small number bargaining is related to the number of companies that can perform the possible outsourced activities (Klein et al., 1978). This concept is significant because if the number of organizations that possess the ability to perform these activities is small, the bargaining power, and therefore, the opportunistic behavior could become a threatening problem for the outsourcing company. For that reason, Holcomb and Hitt (2006) formulate their second proposition.

**Proposition 2:** ‘The number of specialized firms from intermediate markets is positively related to the likelihood a firm will pursue strategic outsourcing.’

Technological uncertainty is related to the failure of predicting changes in technology and plan ahead accordingly (Folta, 1998). According to the same authors, it is hard for organizations to identify when technology will be obsolete. In order to respond to this phenomenon, some organizations prefer to move the technological analysis to the outsourced company. The risk of this practice is that if the technological change is high, outsourced companies can take advantage of the situation and adopt an opportunistic behavior (Grossman and Hart, 1986). As a consequence, Holcomb and Hitt (2006) formulate their third proposition.

**Proposition 3:** ‘Technological uncertainty will have a non-linear (inverse U-shaped) effect on the likelihood a firm will pursue strategic outsourcing, with the slope positive at low and moderate levels of technological uncertainty but negative at high levels of technological uncertainty.’

By just analyzing transactional costs in organizations with similar characteristics and context, different outsourcing decisions can be obtained. For example, in the fashion industry, while companies such as Zara remained historically integrated, other companies such as H&M, Mango, or Primark outsource most of its production of garments. For this reason, Holcomb and Hitt (2006) argue that economic motivators are not enough to perform a qualitative integrated outsourcing analysis and that a conceptual orientation is additionally needed. That is when resource-based view comes into place.

**Resource-based view (RBV)**

As presented previously, the strategic outsourcing model of Holcomb and Hitt (2006) considers the following aspects in relation to the resource-based view theory: complementarity of capabilities, strategic relatedness, relational capability-building mechanisms, and cooperative experience.

The first of these aspects is related to the difference, in terms of capabilities, that two organizations might have in an unstable context (Anderson, 2012). At the same time, complementarity of capabilities means that even though those capabilities are different, they should be able to be combined in such a way that an enhanced result is obtained (Luo, 2002; Hitt et al., 2001). In relation to this topic Holcomb and Hitt (2006) formulate their fourth proposition.
**Proposition 4:** ‘The extent of complementarity that exists between a firm’s existing capability endowment and capabilities available from intermediate markets positively affects the likelihood a firm will pursue strategic outsourcing.’

According to Prahalad and Bettis (1986), strategic relatedness refers to what extent different firms can use the same resources and capabilities across different organizational levels. In relation to this topic, Parkhe (1993) argues the disagreement between firms that engage in outsourcing practices decreases if they share common goals and a similar mission. On the contrary, big difference in goals could lead not only to the end of the relationship between firms, but also to long-term negative consequences for each of their businesses (Luo, 2002). In concordance to this logic, Holcomb and Hitt (2006) formulate their fifth proposition.

**Proposition 5:** ‘The degree to which firms’ objectives reinforce one another positively affect the likelihood a firm will pursue strategic outsourcing.’

The ability to assimilate, build and reconfigure resources across organizations allows firms to generate better results throughout a longer period of time (Teece et al., 1997). Relational capability-building mechanisms have direct impact on the competitive advantages of associated firm through outsourcing (Mahoney and Pandian, 1992; Makadok, 2001). For that reason Holcomb and Hitt (2006) formulate their sixth proposition.

**Proposition 6:** ‘Relational capability-building mechanisms positively affect the likelihood a firm will pursue strategic outsourcing.’

Cooperative experience is defined by Granovetter (1985) and Uzzi (1997) as the repetitive collaboration between two firms, which allows them to trust each other and increase their work together with a long-term perspective. According to Rousseau et al. (1998), this type of experience helps to develop tools that increase the chance of success in a competitive market. In relation to these concepts, Holcomb and Hitt (2006) formulate their last proposition.

**Proposition 7:** ‘Cooperative experience between a firm and specialized firms from intermediate markets, defined by the length and the quality of previous relationships, positively affects the likelihood a focal firm will pursue strategic outsourcing.’

The adoption of the presented model of strategic outsourcing simplifies the evaluation of motivators and incentives related to the decision of performing stockroom process outside the store.

### 3.1.2. Outsourcing Implementation

In order to provide the case company and other similar fashion retailers with an efficient set of steps to put the potential outsourcing plan into effect, different publications related to outsourcing implementation were analyzed. Even though considerable amount of information was found in relation to general outsourcing implementation plans, to the authors’ knowledge, there is no evidence of specific outsourcing implementation strategies for fast fashion Store Operations processes. For that reason, general outsourcing plans were analyzed and used as a guideline during this investigation.

To select the most relevant studies in relation to this topic, the amount of times these studies were cited was taken as a reference. The most relevant consulted authors (Zhu et al., 2001; Franceschini et al., 2003; McIvor, 2000) divide the outsourcing implementation plan in four different stages. Even
though the amount of stages was the same for all of them, the characteristics of every stage vary according to the researcher.

According to McIvor (2000), the outsourcing process starts by evaluating the core activities and competences of the organization in order to determine which of those could be outsourced. Once that is completed, the next step is to measure the total costs associated with the possible outsourcing practice. The last step of his framework suggests a relationship analysis with the objective of identifying possible problems associated with outsourcing part of the organization’s operation to an external player.

Franceschini et al. (2003) utilizes a similar model to the one presented by McIvor (2000). The evaluation of the possible outsourced activities and capabilities, as well as total costs and potential problems, are grouped in Franceschini et al. (2003) model as internal and external benchmarking. At the same time, these authors add two more stages: contract negotiation and outsourcing management. The contract negotiation is the step in which the relationship between the outsourcing organization and the external player incorporating the outsourced activity becomes formalized. In relation to this point, Graham (1993) suggests that, in this stage, it is important to determine expectations, ways of communications and mechanisms of control. All these elements would increase the chances of a successful outsourcing process. As previously mentioned, the last step presented by Franceschini et al. (2003) is the outsourcing management. The coordination of goals and effort allows both, outsourcing and outsourced companies, to collaborate and work together to improve the results of their agreement.

Unlike the other authors, Zhu et al. (2001) have a different approach to outsourcing implementation. These authors highlight the fact that outsourcing is not just a cost cutting decision but also a strategic choice that can increase competitive advantage and approach the implementation with a business perspective more than with an operational one. The first step of their outsourcing plan is a strong business plan that takes into consideration all the costs associated with this practice. Additionally, other aspects must be considered, like the consequences of outsourcing activities in the rest of the organization and how that affects the relationship with customers. The main objective of this business plan is to clearly evaluate the feasibility of the outsourcing project. Their second step is vendor agreement. Even though this step has the same characteristics previously presented for the step called contract negotiation in the model suggested by Franceschini et al. (2003), it takes into consideration more aspects like the business relationship, the impact on employee benefits, the employee separation plan, the outsourcing timeline and the telecommunication plan. Zhu et al. (2001) last step of the outsourcing implementation is the transition phase and post-outsourcing review. During the transition phase it is important to specify all the aspects that both organizations should consider in relation to the outsourced activities. On the other hand, the post-outsourcing review main goal is to compare the expectations of the original business plan and the real outcomes of the project. If deviations are encountered, correction tactics can be implemented and negative impact on the business can be reduced.

3.2. Innovation Theories

In order to analyze the adoption of RFID in fashion retailers, diffusion of innovation theory (DOI) was chosen, since according to Grübler (1996), innovation and its diffusion are essential while discussing changes related to technology. A vast body of literature was found in relation to this topic, especially concerning innovation adoption on individual and organizational levels. It was
discovered that significantly less research has been done that takes into consideration industry perspective, which is essential while analyzing RFID adoption in the fast fashion industry.

While Rogers (1962) defines innovation as idea, object or practice that is perceived as new by other unit of adoption, Kuczmarski (2003) develops that concept further and states that innovation is ‘a mindset, a pervasive attitude, or a way of thinking focused beyond the present into the future vision’. Since technological innovations often shape business dynamics, they require a special attention (Roh et al., 2009). As a consequence, an extensive amount of academic work was found in regard to the adoption of innovation, which is defined as a stage process that consists of the creation of a novel idea, the acceptance of that innovation and its implementation (Thompson, 1965). In order to predict the innovation adoption, a vast amount of diffusion of innovation (DOI) theories and models has been created (Mansfield, 1961; Rogers, 1962; Bass, 1969). One of the most pervasive ones is the DOI theory developed by Rogers (1962), which states that the adoption of innovation follows an S-curve, which means that diffusion rates begin slowly, which leads to a period of fast adoption and ends with a period of saturation, until the innovation is replaced by a new technology. What is more, in his model, Rogers (1962) identified five categories of users, including lead users (or innovators), early adopters, early majority, late majority and laggards. Those are presented on the Figure 7, together with the cumulative adoption of innovation curve.

According to Rogers (1962), innovators (or lead users) and early adopters usually become involved in adopting new technologies or processes during the early stages, when the diffusion rate still rises very slowly. After that, once the dominant design is visible, the early majority of users begins to adopt an innovation. Late majority, on the other hand, considers adoption only after a dominant design has become widely accepted and only incremental improvements are being added to the technology. Finally, the laggards enter when the adoption rates slowed down again and the diffusion has reached the saturation point (Rogers, 1962). Bass (1969) adds one more category of users called imitators, who, unlike innovators, are influenced in the timing of adoption by the decisions of other members of the social system. In addition, Geroski (2000) complements this by stating that DOI can be seen as a process through which technology changes and evolves in order to fulfill different users needs, instead of only seeing it as late majority imitating early adopters.

In relation to this topic, Roh et al. (2009) argue that the factors affecting early adopters and late majority are different. Early adopters are driven by the potential strategic competitiveness they can
achieve by adopting new technologies, while most of the late majority is impelled by the external and internal pressures. As a consequence, Roh et al. (2009) state that external pressures, organizational readiness, and most importantly, expected benefits are the most important factors that impact the innovation adoption. Rogers (1962) also adds that the majority adopts a new product when its price decreases radically during its diffusion process.

### 3.2.1. RFID adoption

Within the diffusion of innovation theories, a special attention has been brought to IT innovations (Fichman, 1992; Prescott and Conger, 1995). According to Lyytinen and Damsgaard (2001) this phenomenon is due to the slow and unexpected adoption of this type of innovations. Smart et al. (2010) also state that costs related particularly to the adoption of IT innovation play a fundamental role in explaining the adoption of that innovation by organizations, more than in case of any other innovation. In addition, researchers studying IT diffusion proved that entire industries can be early adopters, while other industries can act as laggards because of the differences in industry level information processing requirements (Melville and Ramirez, 2008). For that reason, it is essential to look at the adoption of this type of innovation from the industry perspective.

Within the IT diffusion literature, a large amount of research related to RFID adoption was also found. This is due to the fact that the pace of RFID adoption has risen significantly since 2000 (Leaver, 2004) and this is driven by the mandates of powerful retailers such as Wal-Mart, Tesco, or Zara (Smart et al., 2010). In this context, various models evaluating RFID adoption in the organizations have been created (Tsai et al., 2010; Bunduchi et al., 2011; Baysan and Ustundag, 2012). However, all of them agree that, while looking at RFID diffusion, it is of utmost importance to evaluate both costs and benefits.

**Benefits**

Since RFID affects the production and delivery of products, it can be qualified as a process innovation (Tidd et al., 2005). Having said that, Bunduchi and Smart (2010) identify types of benefits associated with process innovation, depending on their strategic importance. These include: (1) direct benefits obtained from the electronic transmission of information and, consequently, cost savings from reduced document handling; (2) indirect benefits obtained from the increased efficiency within the organization and changes in relationships with customers and suppliers; (3) strategic benefits obtained from the potential to generate closer business relations with customers and suppliers, which is related to indirect benefits. Within this division direct and indirect costs can be classified as operational benefits, which according to Bunduchi et al. (2011), are related to cost savings and improved efficiency in firm’s operations.

**Costs**

While describing costs associated with implementing RFID, Baysan and Ustundag (2012) classify them into three categories: (1) hardware costs, which involve costs associated with tangible elements of RFID systems, including tags and readers; (2) middleware costs, which include cost of software that supports RFID-related operations as well as cost of RFID-enabled infrastructure; (3) service costs, which involve configuration and installation costs.

Bunduchi and Smart (2010) take it further and identify six categories of costs associated with process innovation. These are presented and explained in Table 2.
### Types of costs related to process innovation adoption (Bunduchi and Smart, 2010)

<table>
<thead>
<tr>
<th>Type of cost</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Development costs</td>
<td>Costs associated with participation in the development of a new technology. This might include both the R&amp;D of a new technology in-house, and costs related to collaborative development, which are for instance, membership fees for participation in standard development consortia (Gupta et al., 2008)</td>
</tr>
<tr>
<td>Switching costs</td>
<td>Costs related to the compatibility issues between existing technological assets of the organization and a new technology. These costs are considered most important factors that hinder the innovation diffusion both from the technological (Zhu et al., 2006) perspective and from the economical (Farrell and Saloner, 1985) perspective.</td>
</tr>
<tr>
<td>Cost of capital</td>
<td>Costs resulted from the uncertainty of the innovation investment. According to Mata et al. (1995), there are two types of uncertainty costs: (1) technological, which is related to risk of the investment not meeting its time, cost and performance goals; (2) market, which is associated with risks of having negative responses from customers and suppliers.</td>
</tr>
<tr>
<td>Implementation costs</td>
<td>Costs related to implementing a new technology. According to Irani et al. (1997), these can be divided into two categories: (1) direct costs, which mainly involve equipment costs; (2) indirect costs, which are associated with human-related costs, such as job training, supervisors time and resistance to the new technology.</td>
</tr>
<tr>
<td>Relational costs</td>
<td>Costs linked to relations between the partners involved in the innovation adoption. The factor that has the biggest impact on this cost is trust, since according to Allen et al. (2000), lack of trust among innovation partners might lead to conflicts and tensions among potential adopters.</td>
</tr>
<tr>
<td>Ethical/security costs</td>
<td>Costs associated with potential breaches of privacy and environmental concerns as well as with data protection issues.</td>
</tr>
</tbody>
</table>

### Other RFID adoption theories

Apart from the costs and benefits that need to be taken into consideration, there is a vast amount of literature related to the factors that drive RFID adoption. Sharma and Citurs (2005) define four groups of drivers: technological, inter-organizational pressure, organizational readiness and external environmental factors. Technological factors include perceived benefits and compatibility, which according to the same authors, are positively correlated with the adoption intent, as well as perceived costs, which have a negative relationship with the adoption intent. Inter-organizational pressure drivers involve industry pressure, competitive pressure, favorable transactional climate as well as net supply chain exercised power, which all are positively correlated with the adoption intention. The same applies to organizational readiness factors, which include financial readiness, top management support as well as infrastructure presence and capabilities. Finally, there are external environmental drivers, which involve perceived consumer readiness, standards stability and perceived stakeholder privacy. All of them have as well a positive relationship with the adoption intent. Sharma and Citurs
(2005) also add perceived technology radicalness as a potential moderator between all the aforementioned factors and the adoption intent.

Tsai et al. (2010) goes further and identifies factors that drive RFID adoption specifically in retail chains. These include: relative advantage, complexity, supply chain integration and organizational readiness. Relative advantage consists of increasing product security, improving inventory replenishment, increasing cost efficiency as well as consolidating marketing strategy, and it is positively correlated with the adoption intention. Complexity, on the other hand, has a negative effect on the adoption intent, since it involves challenges related to compatibility, high investment and maintenance costs, as well as little harmonization between standards. Supply chain integration includes consistent IT platform, operation integration, collaboration planning as well as information sharing and it has a positive relationship with the adoption intent as well as with organizational readiness, which is the last group of factors that drive RFID adoption in the retail chains. These involve retail chain’s scale and culture, its IT expertise as well as top management support and it is positively correlated with the RFID adoption intention.

Bhattacharya and Wamba (2015) also mention that, while RFID possesses high operational and strategic value, its implementation challenges, such as infrastructure costs, resource commitment, top management leadership, environmental challenges and organizational transformation, hinder RFID adoption. Moreover, according to Ross et al. (2009), retail suppliers are currently struggling to adopt and use RFID technology cost-effectively for competitive advantage. In addition, Bhattacharya and Wamba (2015) argue that adoption of RFID in retail depends mainly on environmental, technological and value chain factors, where the most essential ones are: relative advantage, value chain complexity, competitive pressure and catalyst agents, such as development of standards or government impact. According to the same authors those four variables are the most significant facilitators of RFID diffusion in retail.

3.2.2. RFID implementation

Just like in case of outsourcing implementation, a wide variety of RFID implementation plans were analyzed. Having said that, no specific steps were found in relation to the adoption of RFID in the fast fashion retail sector. Thus, articles related to general RFID implementation plans were considered in order to create a concrete plan for the case company and other similar fashion retailers. According to Leonard-Barton (1988), new production technologies, such as RFID, can be a valuable source of competitive advantage for the organizations. However, as stated by the same author, their implementation is as challenging as their invention and development. Furthermore, according to Leonard-Barton and Kraus (1985), the majority of implementation efforts does not succeed, due to the fact that organizations tend to underestimate the importance or scope of a needed preparation. For that reason authors like Angeles (2005), Spekman and Sweeney (2006) or Reyes and Jaska (2007) developed specific guidelines for managers on how to successfully implement RFID in their organizations. While all of them involve six to eight steps plan, they vary from author to author. Since the model of Spekman and Sweeney (2006) is very technical and focuses mainly on the choice of RFID tags and infrastructure, it was decided to discard it and combine the remaining two models instead.

As seen in the Reyes’ and Jaska's (2007) guideline, the first step of RFID implementation is to comprehend all the potential benefits, threats and potential applications of this technology. According to the same authors, it is crucial to eliminate the unrealistic expectations related to RFID,
which can potentially result in artificial perceptions of this innovation. After that, it is essential to analyze the current organization’s system. According to Reyes and Jaska (2007), the final aim of this analysis is to have a benchmark providing information on which supply chain operation processes need improvement. This analysis should involve comprehensive process flows as well as opinions of all key employees who work with the present system.

As a next step both Angeles (2005) and Reyes and Jaska (2007) propose the development of a return on investment (ROI) business case. At this stage, it is essential to realize what potential benefits could be reached with RFID to maximize the ROI (Reyes and Jaska, 2007). It is possible that ROI in the traditional financial terms will not be positive. However, according to Leonard-Barton and Kraus (1985), new technology might bring other benefits and be essential to organization’s future. In order to calculate these intangible benefits, it is useful to conduct a pilot project (Angeles, 2005), which is described later in this section.

Afterwards, as stated by Reyes and Jaska (2007), the requirements of the new RFID system need to be analyzed. This involves a comprehensive understanding of both capabilities and limitations of this technology in order to make a plan of how exactly RFID will be implemented. Next, Angeles (2005) suggests to choose a suitable RFID technology, which is a critical decision in the implementation process (RFID Journal, 2003). At this stage, the needs of three stakeholders need to be taken into consideration. These include: (1) corporate environment of the organization, (2) trading partners valued by the organization, and (3) industry, to which the organization belongs. Here Angeles (2005) recommends to choose the technology that has the biggest potential for adoption available in the marketplace, since extensive technological adoption tend to lower RFID software and hardware component prices.

Later, RFID technical problems need to be anticipated. One of the most common problems associated to this technology are the false reads, which usually result from the characteristics of radio waves. Moreover, the problems with distinguishing one shelf tag from another might occur, if for instance, the reader would pass by the same shelf several times (Angeles, 2005).

After the RFID technology is selected and its technical problems are predicted, the IT infrastructure issues need to be managed. These include: (1) data management concerns and (2) integration with back-end applications (Angeles, 2005). The first one is related mainly with redesigning data structures so they can be uniform across not only the organization, but also its value chain participants (RFID Journal, 2003). Moreover, database administrators need to be able to handle the potential pressures on the databases, both in terms of speed and volume involved in processing RFID applications. When it comes to back-end applications, on the other hand, a challenge for to the organization is to find a way to make RFID data interface with related business applications, such as inventory management or accounts receivable (Angeles, 2005).

When all of the aforementioned issues are managed, the prototype needs to be tested in order to make sure that the new technology will deliver the anticipated results (Reyes and Jaska, 2007). This can be done in the form of a pilot project, which allows (1) the comprehension of how RFID works in the organization’s unique environment, (2) testing of different types of tags and readers, (3) conducting necessary back-end integration routines, and (4) upgrading software and hardware infrastructure elements (Roberti, 2003). As further suggested by Angeles (2005), at this point, it is essential to try the RFID technology into the organization’s existing IT business applications, which will help to better understand the consequences of RFID on the organization’s existing operations.
Moreover, the pilot study also enables learning from system errors and user interaction (Angeles, 2005).

According to Reyes and Jaska (2007), after the pilot test is completed, the global implementation process can begin. At this stage, it is crucial to measure the accuracy of the new system. In order to do that, the results collected from the previous system should be benchmarked with the results of the new system. The same authors further recommend to monitor and continuously improve the implemented RFID system. This will ensure that the system evolves as needed to meet the goals and expectations of the organization. It will also help in achieving competitive advantage by reducing costs and improving customer satisfaction (Reyes and Jaska, 2007).
4. Case Company

In order to provide an understanding of the organization under study, this chapter is dedicated to give an overview of the case company, specifically of its Store Operations department. Findings from the observations provide an insight on how the company currently develops its operations and how they are working with new technologies.

4.1. General Characteristics

The case company exists in six continents providing fast fashion, inspiring shopping experiences in a wide variety of markets, as well as through a growing online store. Its current growth target is to increase the number of stores by 10-15% every year. It is ranked as one of the largest global clothing retailer and recognized by having fashion trend analysis, Supply Chain Management, and Store Operations at the core of the company’s strategy.

4.2. Store Operations

Nowadays, SO department at company’s headquarters is part of the Sales and Marketing area and acts as a support entity to the different markets. From the conducted interviews, it was possible to find out that this department designs, implements and controls all the activities and procedures that take place inside the company stores. SO responsibilities can be divided in five main areas:

- Garment flow
- Garment care
- Store environment / experience
- In store staff
- Platform for new initiatives

To help with the development of the case company business, SO department has three main objectives:

- To contribute to incremental profit every year
- To improve working conditions for their employees in the store
- To improve customer shopping experience in the store

Even though the characteristics and sales figures vary considerably depending on the size of the store, Store Operations practices are standardized in all the company stores. Contracts of the store employees are characterized by its flexibility, where a considerable part of all the employees is hired on the part-time basis. In small stores, which constitutes at 35% of the total case company’s stores, employees tend to be responsible for activities that belong to different job descriptions. Even though
these stores have people that only work in the store during busy hours of the day, it is more complicated to reduce the amount of employee hours than in medium and big stores, which constitutes 65% of the total case company’s stores.

Currently, SO department is in the process of rolling out Store Operations best practices in all markets and those practices are the ones taken as a reference for the research presented in this document. The goal of best practices is to fulfill the aforementioned department’s objectives and they are divided according to the place where these activities are performed.

One of the processes described as part of the best practices that has the biggest impact on the store costs and employee satisfaction, is the stockroom process. This process is required to prepare the garments for the shop floor and it is currently performed after delivery boxes arrive to the store. The stockroom process set of activities can be seen in Figure 8.

![Figure 8. Stockroom process at the case company.](image)

In order to secure best practices, the position of SO Managers has been created in one third of the case company markets, with the final goal of having SO Managers in all market in the near future. Together with the global support office functions and area teams, SO Managers support, lead and coach store teams on SO practices to create the best possible shopping and working experience in fashion retail.

### 4.3. Store Key Performance Indicators

In order to evaluate the performance of the case company’s stores, areas, and markets, a set of different KPIs is used. These performance indicators are especially utilized to evaluate new initiatives and can be measured by existing tools. The following KPIs were used to answer the research questions of this investigation:

- **Net Sales Takt**: performance index, comparable sales in a specific period of time
  \[
  \text{Net Sales Takt} = \frac{\text{Sales Period 1}}{\text{Sales Period 2}} \times 100
  \]

- **Conversion Rate**: performance index, proportion of visitors to a store who make a purchase
  \[
  \text{Conversion Rate} = \frac{\text{Buyers}}{\text{Total visitors}}
  \]

- **Cost per hour**: performance index, total expenditure in stockroom process in a specific period of time
  \[
  \text{Cost per hour} = \frac{\text{Total unpacking cost}}{\text{Total unpacking hours}}
  \]

- **Unpacking Takt**: efficiency index, total pieces of unpacked garments in a specific period of time per employee
  \[
  \text{Unpacking Takt} = \frac{\text{Total unpacked pieces}}{\text{Total unpacking hours} / \text{Total employees}}
  \]

- **Unpacking Error**: performance index, amount of pieces incorrectly tagged or hanged in a specific period of time per employee
  \[
  \text{Unpacking Error} = \frac{\text{Total incorrectly unpacked pieces}}{\text{Total unpacking hours} / \text{Total employees}}
  \]
● Illness rate: performance index, proportion of employees who cannot work due to sickness

\[
\text{Illness rate} = \frac{\text{Sick employees}}{\text{Total employees}}
\]

4.4. Garment Flow

The case company does not own any factories, instead its products are sourced from independent suppliers, mainly in Europe and Asia. One of the main characteristics of the garment flow of the case company is the ability to coordinate different suppliers and subcontractors.

Once the garments are produced, price tags are added and shipments are divided according to the destination market. The greater part of shipments from the suppliers’ factories goes directly to Logistics centers in the case company’s markets, which support stores in their geographic region, independently of national borders. Having said that, the case company’s stores do not have any back up stocks, but instead, they receive daily replenishments from the warehouses. Even though the warehouses are owned by the case company and they are operated by own employees, subcontracted companies perform deliveries to the stores. In most of the markets, there exist two types of warehouses. The ‘allocation warehouse’ deals with the new garments deliveries, while the ‘replenishing warehouse’ deals with the refillment of existing garments in the stores. At the same time, in some geographical areas, there are ‘split points’ between warehouses and stores. These extra nodes in the supply chain are used to increase Logistics efficiency by dividing big deliveries into specific stores.

4.5. Golden Delivery

Nowadays, the case company’s products arrive to the store in hard plastic boxes and, once these boxes are scanned, the stockroom process begins. In special circumstances, characterized by high sales volumes, such as store openings or lack of space in the store, the case company performed ‘Golden Deliveries (GD)’. GD is a term used to describe the outsourcing practice of performing the stockroom process outside the case company’s stores. This way, products are tagged and hanged, either in the case company warehouse or in an extra house, arriving at the store floor-ready. Delivery boxes can then be taken from the delivery truck straight to the shop floor in order to hang garments in the selling stands. By having GD, traditionally routine work performed in the stockroom decreases considerably.

Even though GD has been tried in the past, the case company has never analyzed it as a possible new global best practice. The analyses of previous GD cases are characterized by lack of analytical investigation and the usage of different KPIs, making the identification of recommended operational specifications of GD implementation a difficult task.

Since GD can be viewed as an additional step and a disruption of the current supply chain of the case company, the general view of this practice within the organization is quite negative. Having said that, there have been successful cases of GD, where garment flow has not been hindered and the total cost of the stockroom process has been reduced.

Since the concept of GD has been now described, henceforth in this document, the outsourcing practice of performing the stockroom process outside the case company’s stores will be called GD.
4.6. RFID

One of the biggest problems that the case company is currently facing is the lack of store accuracy. The direct consequences of this deviation are lack of size availability in the store, missed sales and unsatisfied customers. In order to tackle this problem, the case company is trying RFID. With this technology the case company aims to have a stock accuracy of 98%.

In order for RFID to be used in a large scale, benefits of this technology have to be proven and that is why, a pilot study is now being developed in one of the case company markets. After performing a proof of concept and a pre-study, the RFID is currently being tested on its sales potential and fast global roll out. At the moment, this technology is being attached to the traditional price tags used by the case company in specific garment groups only. The reason behind this decision is the little disruption to the current production setup and the costs of RFID price tags. Due to the fact that RFID price tags can be detached from the garments easily, they cannot be used as a security device.

Even though right now RFID is only being tested as a way of improving inventory visibility, the case company is aware of the potential of this technology in the following areas:

- **Sales**: point of sales, self-checkout, activity tracking, store planning, customer experience self replenishment, product recall.
- **Supply Chain**: traceability, vendor pack accuracy, supply chain data.
- **Logistics**: loss prevention totes, omni-channel, picking accuracy, electronic proof of delivery, real time data.
- **Security / Accounting**: shrink reduction, EAS consolidation, yearly inventory.

All these areas of the case company, where RFID has potential impact, affect current Store Operations processes. Therefore, this department is currently involved in the RFID project and is looking at this technology with a progressive approach.
5. Method

This chapter describes the methods that were used to conduct this research. Each of them is described and justified by discussing their strengths and weaknesses, as well as, its importance in fulfilling the purpose of this study.

5.1. Choice of methodological approach

Since Store Operations within fast fashion industry is scarcely researched, and thus, there is a gap within the existing body of knowledge, an inductive approach has been chosen to conduct this study. This kind of approach enables researchers to recognize suitable theoretical explanations from individual observation to statements of general patterns or laws (Collis and Hussey, 2009). In addition to using an inductive approach, the research was of iterative nature. Essential parts, such as the problematization and the research questions, were continuously re-evaluated during the research process as new knowledge has been captured (Blomkvist and Hallin, 2015).

The main purpose of this thesis was to better understand fast fashion retailers’ Store Operations, as well as the influence of new innovative practices and technologies on the processes of this department, all with the final goal of increasing Store Operations’ efficiency. This was done through a case study approach, since its characteristics fit the purpose and aim of this thesis (Collis and Hussey, 2009). It is confirmed by Yin (2003), who states that for the explanatory research questions (“how” questions), a case study is a recommended methodology. An alternative method for this study would be an action research (Collis and Hussey, 2009), but since it requires long-lasting periods of research, this method is not viable for the master thesis project. Taking that into consideration, a case study was the most appropriate approach for this study.

This study can be defined as an explanatory and opportunist case study, since the opportunity to explore a phenomenon has emerged due to the access that was gained to a particular company with a specific problem to be solved (Collis and Hussey, 2009). In this study, different methods were used in order to obtain extensive knowledge about the research field, as advised by Eisenhardt (1989). Mainly qualitative methods, including unstructured and semi-structured interviews as well as testing of the evaluation framework, were chosen. These methods will be discussed in a detailed way in the following sections. The authors of this paper also considered conducting a questionnaire among the case company’s employees. This was mainly because the researchers believed that the insight obtained from the store managers worldwide would be a crucial component for answering RQ1. However, a lack of time and a belief that response rates would be low resulted in this method being discarded. In addition to that, the authors of this thesis decided that, as mentioned in the ‘Case company’ chapter, Store Operations managers from different countries have more comprehensive knowledge about areas of improvement in Store Operations, and thus, the semi-structured interviews with them were chosen instead. Same logic was applied when the researchers tried to answer RQ2.
Multiple interviews with case company’s employees and industry experts were chosen instead of questionnaires with potential low response rates.

5.2. Research design

The problem formulation was based on the description of the thesis, stated by the Head of Store Operations of the case company. In the early phase, the scope of the research originated from his perception that there is an existing need of improving the case company’s Store Operations. At the initial meetings the different areas of SO that should be looked upon were presented to the researchers. With this as a base, the literature review started. It provided the authors with an overview of existing research and theory in the field and gave them a better comprehension of the knowledge gap, which worked as a foundation of what to actually study during the research. The information obtained from the ongoing literature reviews constituted a base for the interviews with the case company’s employees. The answers from each round of interviews were a foundation for the next one. For the outsourcing solution, the evaluation framework for the different case company’s markets was created before the last round of interviews. First however, the pre-study was conducted.

The writing process took place simultaneously to the data collection and results’ analysis. The research design is presented in Figure 9.

![Figure 9. Research design.](image)

5.3. Pre-study

A pre-study, which is a process to become familiar with the context in which the case study will be performed (Collis and Hussey, 2009), was conducted to obtain a better holistic knowledge about the current situation of the case company and about how its stores are operating.

Different types of research methods were used to perform an effective pre-study. First, unstructured interviews with Head of Store Operations and part of his team, including Project Manager responsible for customer surveys and Store Operations Manager responsible for best practices, were performed. After that, Annual Report 2014, Three Months Report (December 2015 - February 2016), Best Practices manual, external literature, and Store Operations presentations were analyzed. Third, six different semi-structured interviews with the case company’s store employees, including Store and Department Managers, were conducted in two types of stores (one big and one small).
Finally, a benchmarking study was conducted. It was based on the observations in the natural setting in order to observe the ways of working in five of the case company’s competitors. A non-participant observation method was used, which is a type of observation where the researcher identifies what people do without being involved (Collis and Hussey, 2014). These activities were performed with the objective of having a better comprehension of Store Operations area at the case company’s competitors.

All the aforementioned interviews lasted around 60 minutes and were recorded with the permission from the interviewees. Aside from the recordings, notes were taken by one of the researchers. Both researchers were present during all the interviews with a purpose of avoiding interviewer bias (Collis and Hussey, 2014).

During the pre-study researchers also decided which markets were going to be analyzed during the entire research process. Since the case company is present on six continents (Africa, Asia, Australia, Europe, North America and South America), countries from all of those continents were selected. Initially two countries, including one expanding market and one established one, from each continent were pre-selected. However, due to the fact that both Australia and Africa contain solely one market, only one country for each of those continents was taken into account. The same applies to North America, where only Canada was viable for the analysis, due to the fact that US acts independently in terms of Store Operations. Moreover, while discussing the pre-selection of markets with the case company’s Head of Store Operations, he suggested that another country in Europe should be added due to the size of the European market. One additional requirement was to only analyze the countries with Store Operations Managers, and thus, one Asian country replaced one pre-selected country from South America. Moreover, on some of the continents, including Asia, South America and Africa, there were no established markets, and thus, only expanding markets were taken into account. The final list, containing the ten chosen markets is presented in the Table 3.

<table>
<thead>
<tr>
<th>Selected country</th>
<th>Continent</th>
<th>Type of market</th>
</tr>
</thead>
<tbody>
<tr>
<td>1    Australia</td>
<td>Australia</td>
<td>Expanding</td>
</tr>
<tr>
<td>2    France</td>
<td>Europe</td>
<td>Established</td>
</tr>
<tr>
<td>3    Great Britain</td>
<td>Europe</td>
<td>Established</td>
</tr>
<tr>
<td>4    Russia</td>
<td>Europe</td>
<td>Expanding</td>
</tr>
<tr>
<td>5    Japan</td>
<td>Asia</td>
<td>Expanding</td>
</tr>
<tr>
<td>6    Singapore</td>
<td>Asia</td>
<td>Expanding</td>
</tr>
<tr>
<td>7    South Korea</td>
<td>Asia</td>
<td>Expanding</td>
</tr>
<tr>
<td>8    Mexico</td>
<td>South America</td>
<td>Expanding</td>
</tr>
<tr>
<td>9    Canada</td>
<td>North America</td>
<td>Expanding</td>
</tr>
<tr>
<td>10   South Africa</td>
<td>Africa</td>
<td>Expanding</td>
</tr>
</tbody>
</table>

Table 3. List of the ten markets selected for the analysis.
5.4. Methods used for answering research questions

In the following sections the methods used for addressing the three sub-questions and the main research question will be explained briefly. More extensive descriptions of the methods that have been used in this thesis are given later in this chapter.

5.4.1. Methods used for answering RQ1

The first sub-question: ‘What are the most important areas of improvement affecting Store Operations?’ was addressed through the combination of literature review, semi-structured interviews and surveys’ analysis.

First of all, a literature review related to different Store Operations areas was performed. Furthermore, three existing surveys related to in-store experience were analyzed, including (1) In Store Customer Feedback, which is an internal tool that was used from January 2014 until May 2015 in 16 different countries from Europe and North America, with a purpose of identifying the drivers that make the customers recommend the case company in the future, (2) Global Customer Feedback Survey, which was done in Spain, Great Britain and Croatia, with the aim of identifying the most important factors of customers’ store experience, and (3) The case company in-store weaknesses and challenges, which was performed by an independent body. The knowledge obtained from the scientific articles, surveys, and the pre-study was used in order to create semi-structured interviews with the case company’s Store Operations Managers from the ten selected markets as well as with employees from the case company’s Head Office from different departments.

5.4.2. Methods used for answering RQ2

The second sub-question: ‘What solutions can be developed to improve Store Operations?’ was addressed through the combination of literature review and semi-structured interviews. The interviews have been conducted with experts within retail solutions and innovation, the case company’s employees from ten different markets as well as with the case company’s Head Office employees from different departments.

5.4.3. Methods used for answering RQ3

The third sub-question ‘How can RFID and Golden Delivery be implemented?’ was addressed through the combination of literature review as well as developing and testing of the evaluation framework that was created based on the results obtained from RQ2. The framework was tested in one chosen market and necessary improvements were made according to the feedback received.

5.4.4. Methods used for answering the general research question

Answering the three sub-questions constituted a foundation for answering the main research question that addresses the objective of this study: ‘How can established fast fashion retailers improve their Store Operations in order to cope with growing efficiency requirements and rapidly changing technology in their stores?’

By realizing what are the most important areas of improvement in Store Operations, identifying and analyzing solutions that can be implemented in those areas, and suggesting how to implement those solutions in the case company, the general research question has been answered.
Until now, the methods used for answering the research questions have been described only briefly. The following subchapters will discuss the methods used in this research more comprehensively.

5.5. Literature review

A comprehensive literature review was conducted on the ongoing basis during the entire research process. It provided an understanding of how other studies related to the topic under investigation have been conducted and constituted a guide on how to create the research design in an appropriate way. It also helped to shape the process of data gathering and to understand the empirical data that was collected throughout the investigation (Collis and Hussey, 2009).

A wide range of literature was found during the research process. It has been categorized into subgroups depending on their content in order to understand which sources was relevant for this study. In order to do that, a document with an overview of the relevant articles with short descriptions was created. During the research process, the analyzed topics were constantly being narrowed down.

The main sources for finding literature have been KTHB Primo and Google Scholar. Between the most popular journals that were included in the literature review, the following can be mentioned:

- The International Review of Retail, Distribution and Consumer Research
- European Journal of Marketing
- Journal of Service Theory and Practice
- International Journal of Retail & Distribution Management
- Journal of Consumer Marketing
- International Journal of Physical Distribution & Logistics Management
- Clothing & Textiles Research Journal


Both ‘Literature’ and ‘Theory’ chapters were critically evaluated using a thematic approach, in line with Collis and Hussey’s (2009) recommendations of literature analysis. By using the aforementioned keywords, the data has been sorted into different groups to keep the literature review organized.

5.6. Interviews

Interviews were the primary source for the data collection. 42 different interviews were conducted throughout the study. The participants, timing and structure of the interviews were chosen with a purpose of fulfilling different objectives at different stages of the study.
5.6.1. Pre-study interviews

As mentioned before, during the pre-study, three unstructured interviews and six semi-structured interviews were carried out in order to find out as much as possible about the case company’s Store Operations area. All these interviews lasted around 50-60 minutes and were conducted face-to-face. First, the unstructured interviews were used due to the fact that, according to Collis and Hussey (2009), this type of interviews is suitable when trying to comprehend and formulate the problem. Secondly, the semi-structured interviews with Store Managers and Department Managers from the two case company’s stores were conducted. By using semi-structured interviews, the interviewee is encouraged to talk about the main topics of interest (Collis and Hussey, 2009). The aim of these interviews was to see how the store employees perceive Store Operations and which areas within this field are most important. The questions asked during those interviews are shown in the Appendix 1.

5.6.2. First round of interviews

Based on the pre-study and the literature review, questions for the first round of semi-structured interviews were created (Appendix 2). These interviews were conducted with the case company’s Store Operations Managers from ten selected markets that are listed in the ‘Pre-study’ section. The questions included in the semi-structure interviews were aimed to obtain a global insight about the areas of improvement within the case company’s Store Operations, having in mind the impact of these areas on the business, working experience for the case company’s employees and the customer experience in the store. Store Operations Managers instead of Store Managers were selected, since the first ones support, lead and coach the store teams on Store Operations processes and routines, which is the focus of this investigation. All of the interviews had duration of about 60 minutes and were carried out via teleconference, due to the fact that all of the participants were spread all around the world. At this stage, another set of semi-structured interviews was carried out with a purpose of comprehending the case company’s Head Office employees’ perception about the Store Operations’ areas of improvement. The interviewees included: Head of Store Operations, Project Manager responsible for RFID and Head of Space Optimization. The guidelines for these interviews can be found in Appendix 3, Appendix 4 and Appendix 5 respectively. These interviews lasted around 40-50 minutes and were conducted face-to-face in the case company’s Head Office. At this point the areas of improvement in Store Operations were identified.

5.6.3. Second round of interviews

After analyzing the first round of interviews, a next set of interviews was created, with a purpose of selecting one or more of pre-selected solutions. The first interview was carried out with a Global Compliance Manager from the Security department. Here the semi-structured interview with open-ended questions was used in order to make sure that the interviewee gave answers that reflected his own thoughts rather than the ones of the researchers (Collis and Hussey, 2009). The guideline for these interviews can be found in Appendix 6. At this point two more interviews were conducted, one with Head of Store Operations and one with Project Manager responsible for RFID. In this case unstructured interviews were used, due to the fact that it was crucial to obtain interviewees’ honest opinion about the pre-selected solutions (Collis and Hussey, 2009). These interviews lasted around 60 minutes and were carried out face-to-face in the case company’s Head Office. As a result of this round of interviews, two solutions were selected.
5.6.4. Third round of interviews

A third round of semi-structured interviews was devoted to one of the solutions developed in RQ2: Golden Delivery. These interviews were conducted with five previously contacted Store Operations Managers. It was decided not to interview remaining Store Operations Managers, due to the fact that Golden Delivery was never tried in their markets. In order to effectively evaluate Golden Delivery through this round of interviews, a set of KPIs based on the economic aspect of the analysis, but also on the objectives of Store Operations department, was created (Appendix 7). At the same time, a guideline with questions was also developed and can be found in Appendix 8. All of the five interviews had duration of about 45-60 minutes and were conducted via teleconference, from the same reason as mentioned above. At this point four more semi-structured interviews were carried out with the case company’s employees working in Germany, Switzerland and Head Office, all from Logistics department. The purpose of these interviews was to obtain a better comprehension of the factors that should be taken into account while analyzing Golden Delivery, as well as, the pre-established parameters used in the GD evaluation framework. The interviews conducted with the Area Controller from Switzerland (Appendix 9) and two interviews with the Area Controller from Germany (Appendix 10 and Appendix 11) lasted about 60-70 minutes and were conducted via teleconference, while the interview with the Global Logistics Controller (Appendix 12) lasted 50 minutes and was carried out face-to-face at the case company’s Head Office. At this point one more semi-structured interview with Store Operations Manager from Mexico was conducted in order to get a deeper understanding of Golden Delivery analysis made by him. The guideline questions for this interview can be found in Appendix 13.

5.6.5. Fourth round of interviews

Equivalently, a fourth round of interviews was carried out in relation to the other solution developed in RQ2: RFID. First, two unstructured interviews were conducted with two industry experts in the field of RFID and source tagging with the objective of obtaining as much information as possible regarding current RFID solutions in retail, the costs associated with them as well as the future of RFID in this industry. The unstructured interviews were chosen in order to comprehend the field of interviewees’ expertise. In addition to that, a set of semi-structured interviews was conducted. In this case, open-ended questions were used in order to make sure that the interviewees gave answers that reflected their own thoughts rather than the ones of the researchers (Collis and Hussey, 2009). The interviewees included: (1) Project Manager responsible for RFID, who was interviewed with the aim of agreeing to a common RFID business case, (2) Head of Security, who was interviewed with the objective of obtaining all the information related to transforming current security infrastructure in the stores to the RFID infrastructure, (3) Strategic Buyer, who was interviewed in order to obtain prices of RFID labels, (4) Global Import/Export Responsible, who was interviewed with the aim of acquiring information regarding customs fees as well as (5) Business Development and Change Manager from the Production department, who was interviewed due to her experience in conducting a source tagging business case before. The first three interviews lasted about 20-60 minutes and were conducted face-to-face at the case company’s Head Office, while the last two interviews had duration of 30-60 minutes and were carried out via teleconference. The guidelines for this round of interviews can be found in Appendix 14, Appendix 15, Appendix 16, Appendix 17, and Appendix 18 respectively. At this stage, RQ2 was answered and the selected solutions were analyzed.
5.6.6. Fifth round of interviews

Finally, a last round of interviews was conducted with the purpose of testing and improving the evaluation framework that was created during the analysis of RQ2. In this round, two semi-structured interviews with Store Operations Manager from Mexico were carried out. Semi-structured interviews with open-ended questions were used in order to make sure that the interviewee gave answers that reflected his own thoughts rather than the ones of the researchers (Collis and Hussey, 2009). Moreover, the interviewee was chosen due to two main reasons: (1) he posses a vast experience in performing Golden Delivery in his country; (2) he represents a group (Store Operations Managers), to which the evaluation framework is directed. The interviews had duration of 50-60 minutes and were carried out via teleconference. The guideline questions for these interviews are shown in Appendix 19.

5.6.7. Summary of the interviews

Both researchers participated in all the conducted interviews and took necessary notes. However, one of the researchers was primarily responsible for carrying out the interview and making sure that the proper structure was preserved, while the other one was responsible for transcribing the interview. All of the interviews were held in English and were recorded for the later analysis, after obtaining the permission from the interviewees. All the interviewees are presented in Table 4, with the division on research questions. The names of the interviewees are excluded due to anonymity but are instead presented by their position within the organization.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Date</th>
<th>Interviewee</th>
<th>Interview Type</th>
<th>Round</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pre-study</td>
<td>25.01.2016</td>
<td>Head of Store Operations (1)</td>
<td>Unstructured</td>
<td>Pre-study</td>
</tr>
<tr>
<td></td>
<td>25.01.2016</td>
<td>Project Manager Customer Surveys</td>
<td>Unstructured</td>
<td>Pre-study</td>
</tr>
<tr>
<td></td>
<td>25.01.2016</td>
<td>Store Operations Manager Best Practices</td>
<td>Unstructured</td>
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<td></td>
<td>27.01.2016</td>
<td>Store Manager Store 1</td>
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</tr>
<tr>
<td></td>
<td>27.01.2016</td>
<td>Department Manager 2 Store 1</td>
<td>Semi-structured</td>
<td>Pre-study</td>
</tr>
<tr>
<td></td>
<td>28.01.2016</td>
<td>Store Manager Store 2</td>
<td>Semi-structured</td>
<td>Pre-study</td>
</tr>
<tr>
<td></td>
<td>28.01.2016</td>
<td>Department Manager 1 Store 2</td>
<td>Semi-structured</td>
<td>Pre-study</td>
</tr>
<tr>
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<td>28.01.2016</td>
<td>Department Manager 2 Store 2</td>
<td>Semi-structured</td>
<td>Pre-study</td>
</tr>
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<td></td>
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<td>Store Operations Manager France</td>
<td>Semi-structured</td>
<td>First</td>
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<td></td>
<td>05.02.2016</td>
<td>Store Operations Manager Great Britain</td>
<td>Semi-structured</td>
<td>First</td>
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<tr>
<td></td>
<td>08.02.2016</td>
<td>Store Operations Manager Russia</td>
<td>Semi-structured</td>
<td>First</td>
</tr>
<tr>
<td></td>
<td>08.02.2016</td>
<td>Store Operations Manager Japan</td>
<td>Semi-structured</td>
<td>First</td>
</tr>
<tr>
<td>Date</td>
<td>Position</td>
<td>Structure</td>
<td>Round</td>
<td></td>
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<tr>
<td>------------</td>
<td>-----------------------------------------------</td>
<td>---------------</td>
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<tr>
<td>09.02.2016</td>
<td>Store Operations Manager Mexico</td>
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<td>Store Operations Manager Singapore</td>
<td>Semi-structured</td>
<td>First</td>
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<td>11.02.2016</td>
<td>Store Operations Manager South Korea</td>
<td>Semi-structured</td>
<td>First</td>
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<td>11.02.2016</td>
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<td>Semi-structured</td>
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<td>15.02.2016</td>
<td>Project Manager RFID (1)</td>
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<td>18.02.2016</td>
<td>Head of Space Optimization</td>
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<td>Second</td>
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<td>23.02.2016</td>
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<td>Second</td>
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<tr>
<td>24.02.2016</td>
<td>Global Compliance Manager</td>
<td>Semi-structured</td>
<td>Second</td>
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<td>24.02.2016</td>
<td>Head of Store Operations (3)</td>
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<tr>
<td>25.02.2016</td>
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<td>Semi-structured</td>
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<td>25.02.2016</td>
<td>Store Operations Manager Great Britain (2)</td>
<td>Semi-structured</td>
<td>Third</td>
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<td>26.02.2016</td>
<td>Store Operations Manager South Korea (2)</td>
<td>Semi-structured</td>
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<td>01.03.2016</td>
<td>Store Operations Manager Mexico (2)</td>
<td>Semi-structured</td>
<td>Third</td>
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<tr>
<td>09.03.2016</td>
<td>Area Controller Switzerland</td>
<td>Semi-structured</td>
<td>Third</td>
<td></td>
</tr>
<tr>
<td>06.04.2016</td>
<td>Area Controller Germany (2)</td>
<td>Semi-structured</td>
<td>Third</td>
<td></td>
</tr>
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<td>08.04.2016</td>
<td>Global Logistics Controller</td>
<td>Semi-structured</td>
<td>Third</td>
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<tr>
<td>26.02.2016</td>
<td>Industry expert 1</td>
<td>Unstructured</td>
<td>Fourth</td>
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<td>02.03.2016</td>
<td>Industry expert 2</td>
<td>Unstructured</td>
<td>Fourth</td>
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<td>08.03.2016</td>
<td>Project Manager RFID (3)</td>
<td>Semi-structured</td>
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<tr>
<td>08.03.2016</td>
<td>Head of Security</td>
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<td>Global Import/Export Responsible</td>
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<td>28.04.2016</td>
<td>Store Operations Manager Mexico (5)</td>
<td>Semi-structured</td>
<td>Fifth</td>
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</tbody>
</table>

Table 4. Summary of all the interviews.
5.7. Testing

Testing phase of the project involved a test made on the GD evaluation framework, which was developed based on the extensive literature review and numerous interviews with the case company’s employees from different markets and departments, as well as with retail solutions experts. This phase can be defined as an experimental case study, during which researchers analyze the implementation of new processes and tools (Collis and Hussey, 2009). The framework will be used by Store Operations Managers and Country Controllers worldwide while evaluating if Golden Delivery should be considered in their country or not. The testing phase, however, was conducted solely in Mexico, due to the fact that this country analyzed GD recently, and thus, the results could have been compared.

This phase consisted of two parts. First, it was revised in terms of clarity. The changes that were made during this stage can be found in Appendix 26. Second, the framework was tested in terms of its accuracy. For this stage, figures from the previous GD experience of the case company’s Mexican market were used. This experience corresponds to 11 days during Easter 2016, when garments from six different stores were tagged and hanged in the warehouse of the case company instead of in the stores. The detailed information of the Mexico’s case can be found in Appendix 27 and the ‘User Interface’ sheet of the Excel tool with the values from this case can be seen in Appendix 28. These values were obtained in the third round of interviews and confirmed in the fifth one, with Mexico’s Store Operations Manager.

5.8. Data analysis

Data collected from the aforementioned interviews was analyzed using a content analysis with categories derived from the interview transcripts. This type of analysis was chosen in order to avoid using predetermined categories and instead allowing them to emerge from the collected data (Hsieh and Shannon, 2005).

Data analysis began with reading all the transcripts one by one to obtain a sense of the whole (Tesch, 1990). Later on, the data was read by each researcher separately so they would not become influenced by each other. Next, the interview transcripts were read word by word to extract codes and themes (Morse and Field, 1995) by underlining the exact words that appeared to apprehend a key thought. In order to completely comprehend the entire data to be able to create separate descriptions of interviewees’ opinions, the transcripts were also read repeatedly. This was later used to recognize the themes. Based on how these themes were interrelated, they were classified into different categories. After that, they were matched with the findings and theories that were derived from the literature review (Tesch, 1990).

5.9. Quality of analysis

When conducting a case study research there are three important tests that need to be evaluated in order to assess the credibility of the performed analysis (Collis and Hussey, 2009). Thus, in this section, reliability and validity of the literature review, interviews, and the evaluation framework are examined as well as the generalizability of the study is discussed.
5.9.1. Reliability

According to Collis and Hussey (2009), the research can be considered reliable if the measurements it includes are accurate and precise and if there were no differences if the research would be conducted again.

The reliability of the literature review can be considered rather high, since all the secondary sources that were used for the analysis of the empirical findings are presented with relation to the areas of improvement within Store Operations in the fast fashion industry as well as to the solutions available in those areas. This does not leave much space for interpretation and increases the likelihood of obtaining the same results if the research was repeated.

However, all the conducted interviews were either unstructured or semi-structured, which tends to lower the reliability of the research, since questions might differ between the interviews, depending on who is performing them (Collis and Hussey, 2009). To increase the reliability of this study, a detailed description of all the interviews is given in this chapter and the guidelines of all the semi-structured interviews are enclosed in the appendices. Moreover, by triangulating the data, i.e. by collecting the same data from different Store Operations Managers, the reliability was also increased. Nevertheless, another issue with unstructured and semi-structured interviews is that it is difficult to transcribe all the questions and answers, and thus, it is challenging to analyze them (Collis and Hussey, 2009). This problem was addressed by having all the interviews recorded, which facilitates analyzing the answers multiple times. Lastly, all the measurements can be considered accurate and precise, due to the fact that follow-up questions were asked by the interviewees during all the interviews in order to gain a better comprehension of the topic (Collis and Hussey, 2009).

Finally, the reliability of the evaluation framework for the Golden Delivery might be considered low, due to the fact that it was created entirely by the researchers. Even though all the factors and formulas were obtained from the interviews, they were not confirmed by the theories, and thus, other researchers might develop this framework in a different way. The reliability was increased by enclosing all the relevant findings gathered during the interviews in the ‘Results and analysis’ chapter of this paper.

5.9.2. Validity

According to Collis and Hussey (2009), the research can be considered valid if it accurately describes the phenomena under the study and it measures what the researchers intended to measure.

The validity of the literature review is relatively high, since the majority of the secondary sources was gathered from established journals in the field of retail, Logistics and marketing, mentioned before in this chapter. Furthermore, the outsourcing and innovation theories that were used to analyze the findings are widely accepted and have a great impact on many fields of research. Finally, all the literature was critically evaluated by the researchers, which further increases the validity of this study.

As far as the interviews are concerned, this study can also be considered valid. This is due to the fact that interviewees had the possibility to ask the follow-up questions at all times in case they did not understood the question asked by the researchers. Moreover, following the advice of Collis and Hussey (2009), the purpose of the study was explained and the guideline questions were always sent to the interviewees in advance to enable them a proper preparation for the interviews. Furthermore, by using multiple sources for answering the same questions, the validity was also increased. This
was not done only in several cases, where the answer could have been obtained only from one case company’s employee, due to his or her expertise, which might slightly decrease the validity of this research. Finally, despite having limited time of four months, a vast amount of interviews (42) was carried out, which highly increases validity of this study.

The interviews were analyzed with the content analysis method, which might result in failing to identify the key themes and categories (Hsieh and Shannon, 2005), and thus, decreasing the validity of this study. This issue was addressed by performing the content analysis by each researcher separately, and afterwards, comparing the results.

Finally, another thing that might lower the validity of this study is the evaluation framework for Golden Delivery, since it was tested only in one market. Even though this market was selected with the utmost care and can be considered representative, there is a possibility that for other countries the results that this framework provides, might not be fully accurate.

5.9.3. Generalizability

According to Collis and Hussey (2009), generalizability is the extent to which the findings that researchers obtained can be applied to other cases. Since this research was a case study conducted in a single case company, the generalizability can be considered rather low. However, since the proposed solutions are applicable for other retailers, and according to Collis and Hussey (2009), it is possible to generalize the findings from one setting to a similar setting, the generalizability of this research is increased.

5.10. Ethical aspects

The entire study was carried out at the case company and, in order to have it authorized and valid, a non-disclosure agreement (NDA) had to be signed and respected by both of the researchers throughout the entire research process. It was agreed to not disclose the case company’s name or any sensitive data that was provided to the researchers. Hence, all the numbers or any specific information that could be related to the case company were concealed. Furthermore, all the interviewees were informed about the purpose of the study in order to obtain their consent and they were assured the anonymity, which according to Collis and Hussey (2009), encourage people to give more open responses. For that reason, in this paper, all the interviewees are stated by their positions in the case company, and not by their names.
6. Results and Analysis

This chapter presents the results that were obtained with the previously described methods. At the same time, the empirical findings are analyzed utilizing innovation and supply chain management theories in order to answer the research questions.

The research methods utilized to answer each research question and the relationship between them are presented in Figure 10. This should facilitate the understanding of the results and analysis provided in this chapter.

![Figure 10](image)

Figure 10. Elements considered to answer each of the questions that lead to the general research question.

6.1. RQ1 - What are the most important areas of improvement affecting Store Operations?

Even though during the research process areas of improvements related to different departments were recognized, only areas related to Store Operations department were taken into account. These are shown in Table 5.
Table 5. Areas of improvement related to Store Operations.

While analyzing the answers from different interviews, it was interesting to see that the understanding of what should be improved in the stores according to the members of the Sales and Marketing department and the Store Operations Managers in the selected countries, was quite similar.

The most discussed area of improvement with both groups was garment flow in the store. This is not surprising since the control and movement of merchandise in the store is at the core of the areas being analyzed. According to 80% of the interviewed Store Managers, garment flow is the area where improvements would have the greatest impact on the business for the case company. In relation to that topic, both groups agreed on the fact that stockroom process is the most disliked set of activities among store employees and that big deliveries in high seasons create an overwhelming
situation for store employees. These findings correlate to the previously presented investigation of Whysall et al. (2009), since stockroom process is repetitive and require physical effort. For that reason, both researchers and managers highlighted that this set of activities creates lack of motivation and that it has a negative consequence on efficiency and customer service.

After performing the literature review as well as the analysis of the case company it was possible to determine that, in comparison to other fast fashion retailers, the case company is behind in terms of innovation and incorporation of technology in the store. One example is the daily schedule that is currently created manually in each store being inadaptable to possible contingencies that might appear throughout the day. Another example is the current alarm systems used by the case company, which have been used for almost 50 years now (Beck and Palmer, 2011) and which are considered obsolete by several authors (O’Connor, 2008; Hardgrave, 2014). Thus, the lack of technology can be considered a factor currently affecting the efficiency of Store Operations.

Another important point that was identified in every analyzed survey, was the low quality of the service provided to the customers. According to those reports, customer service in the store depends not only on the employees’ availability on the shop floor, but also on their friendliness and willingness to serve the customer. This idea is endorsed by Beatty et al. (1996), who suggest that customer service can be improved by having sales assistants helping clients do their shopping. At the same time, it is possible to suggest that one of the causes of customer dissatisfaction is the stockroom process, since as previously shown, this set of activities is disliked by employees, which consequently has a direct impact on the customers’ shopping experience.

By analyzing how often every area of improvement was mentioned during the interviews and discussing the impact of these areas on the case company business with the interviewees of the first round of interviews, the most important areas of improvement were identified:

- Stockroom processes
- Technology and innovation
- Alarm systems
- Employee morale
- Customer service

At the same time, it is possible to observe that these areas are interrelated. Incorporation of new technological developments and alarm systems into stockroom processes can make that set of tasks more efficient. By doing so, physical demands of the job and routine work in the store could be reduced, improving well being, motivation and morale of the employees. As demonstrated in the literature review, all these factors not only have a direct impact on the customer service provided in the store, but also, on the growth rates and profitability.

In the next subsection a set of possible solutions aimed at improving aforementioned areas of improvement is presented and analyzed.

6.2. RQ2 - What solutions can be developed to improve Store Operations?

In order to identify possible solutions aimed at (1) improving the current way of handling stockroom processes, (2) addressing current technology and innovation issues, (3) improving alarm systems, (4) raising employee morale, and (5) delivering better customer service, the first round of interviews
was once again analyzed and a second round of interviews was conducted. Together with the answers obtained from the case company’s employees working in Global Departments of Merchandising, Security and Store Operations, a comprehensive literature, including information about the case company’s competitors, was analyzed. From that, a first draft of possible solutions was created. These are presented in the Table 6 below.

<table>
<thead>
<tr>
<th>Possible solution</th>
<th>Area of improvement</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Golden Delivery</td>
<td>● Stockroom processes</td>
<td>● Store Operations Managers</td>
</tr>
<tr>
<td></td>
<td>● Employee morale</td>
<td>● Head of Store Operations</td>
</tr>
<tr>
<td></td>
<td>● Customer service</td>
<td>● Literature review</td>
</tr>
<tr>
<td>RFID</td>
<td>● Stockroom processes</td>
<td>● Project Manager RFID (Merchandising)</td>
</tr>
<tr>
<td></td>
<td>● Technology and innovation</td>
<td>● Global Compliance Manager (Security)</td>
</tr>
<tr>
<td></td>
<td>● Alarm systems</td>
<td>● Head of Store Operations</td>
</tr>
<tr>
<td></td>
<td>● Employee morale</td>
<td>● Literature review</td>
</tr>
<tr>
<td></td>
<td>● Customer service</td>
<td></td>
</tr>
<tr>
<td>Beacon</td>
<td>● Technology and innovation</td>
<td>● Literature review</td>
</tr>
<tr>
<td></td>
<td>● Customer service</td>
<td></td>
</tr>
<tr>
<td>Different payment</td>
<td>● Technology and innovation</td>
<td>● Literature review</td>
</tr>
<tr>
<td>methods</td>
<td>● Customer service</td>
<td></td>
</tr>
</tbody>
</table>

Table 6. Possible solutions for the identified areas of improvement.

By analyzing once again the answers obtained from ten Store Operations managers during the first round of interviews, it has been noticed that 50% of the interviewees mentioned Golden Delivery (GD) as one of the solutions they used in the past for (1) improving the efficiency of stockroom processes in the stores and for (4) raising employee morale. It was confirmed by the Head of Store Operations, who validated GD cases from the past and mentioned that GD was never analyzed on the global scale within the organization. This solution was also supported by the literature review, where it was discovered that, in case of American retailers, all the garments are delivered to the store floor-ready (Abernathy, 2006), which also applies to Inditex - parent company of Zara (Berfield and Baigorri, 2013).

While performing the literature search within the store solutions field, an extensive amount of articles was found on RFID. As explained in the ‘Literature review’ chapter, when RFID technology is well used in a fashion retail store, sales transactions can take place instantly through the RFID reader at the cashier’s counter, since no barcode has to be read. This way, long queues to the point-of-sale (POS) are prevented and shopping experience is enriched. RFID technology can also improve the level of security within the store by detecting if items that are not being paid for are being removed from specific areas, or if a large volume of products is being removed from the store without authorization (Jones et al., 2005). Moreover, the use of RFID technology can streamline stock taking operations, strengthen customer relationships, improve working experience, facilitate promotional activities and allow retailers to allocate resources more effectively (Moon and Ngai, 2008). As mentioned in the ‘Case company’ chapter, this solution is already being tested within the
organization. However, since in the test project, RFID is placed in a price tag, it cannot act as an electronic article surveillance (EAS) device, and thus, has little impact on Store Operations. After interviewing RFID Project Manager from the Merchandising department as well as Global Compliance Manager from the Security department, it has been decided to analyze RFID as one of the possible solutions for (1) improving the current way of handling stockroom processes, (2) addressing technology and innovation issues, (3) improving the current alarm systems, (4) raising employee morale, and (5) delivering better customer service. It was also accepted by the Head of Store Operations, who agreed that creating RFID business case from the Store Operations perspective would be a valuable addition to the current RFID test project.

Another solution that frequently appears in the retail literature is Beacon, which is a device that enables retailers to communicate with customers indoors via low-energy Bluetooth (Danova, 2014). This solution would help with (2) technology and innovation problems as well as with (5) improving customer service. However, due to the fact that Beacon has no direct impact on Store Operations and it was not approved by any of the interviewees, this solution has been discarded.

The last solution that was found in the retail literature was related to having different payment methods in the point-of-sale (POS). This would (2) solve the case company’s technology and innovation problems and (5) enhance customer service by enabling the customers to pay with different options. However, like in case of Beacon, due to not receiving approval from any of the interviewees, this solution has been discarded.

Taking all of the aforementioned points into consideration, the two selected solutions are: RFID and outsourcing (Golden Delivery). In the following sections these solutions are presented and further analyzed, with the objective of identifying if they should be developed in the case company context. This evaluation is based on the aforementioned interviews, theory, literature as well as the objectives of Store Operations department.

6.2.1. RFID

With the objective of identifying if RFID source tagging (RFID sewn into the garments) should be implemented in the case company, it is essential to evaluate if it fulfills the objectives of the Store Operations department. Thus, in order for the solution to be feasible for the case company, (1) it has to be cost-effective, (2) it has to affect staff in a positive way, and (3) it needs to enhance better customer service. With that in mind, five interviews with the case company employees as well as two interviews with the industry experts were conducted, each with different purpose. The results from those interviews are presented in the tables 7 and 8 below, with the division on key learnings related to costs of RFID implementation, which constituted a base for the cost analysis, as well as to qualitative aspects of RFID adoption.
<table>
<thead>
<tr>
<th>Costs</th>
<th>Key learnings from the interviews related to costs of RFID implementation</th>
</tr>
</thead>
<tbody>
<tr>
<td>EAS tags</td>
<td>- The case company tags all the pieces that cost above 9.95 €</td>
</tr>
<tr>
<td></td>
<td>- Prices of RFID care labels are:</td>
</tr>
<tr>
<td></td>
<td>○ 0.087 € from Supplier 1</td>
</tr>
<tr>
<td></td>
<td>○ 0.074 € from Supplier 2</td>
</tr>
<tr>
<td></td>
<td>○ 0.083 € from Supplier 3</td>
</tr>
<tr>
<td></td>
<td>- Sewing RFID into garments should not implicate any additional costs</td>
</tr>
<tr>
<td></td>
<td>related to applying the labels.</td>
</tr>
<tr>
<td></td>
<td>- The labels are delivered just-in-time, so there will be no costs</td>
</tr>
<tr>
<td></td>
<td>associated to the extra storage</td>
</tr>
<tr>
<td></td>
<td>- The case company buys 100 000 000 new RF hard tags every 3 years</td>
</tr>
<tr>
<td></td>
<td>- New RF hard tag costs 0.14 €</td>
</tr>
<tr>
<td>Price tags</td>
<td>- One RFID price tag costs 0.64 SEK (0.07 €)</td>
</tr>
<tr>
<td></td>
<td>- One regular price tag costs 0.007 €</td>
</tr>
<tr>
<td>Tagging</td>
<td>- Tagging with hard security tags in the stores nowadays takes 10 seconds</td>
</tr>
<tr>
<td>Extra</td>
<td>- Additional costs are related with extra customs fees, but not with</td>
</tr>
<tr>
<td>customs fees</td>
<td>transportation</td>
</tr>
<tr>
<td></td>
<td>- The price of the garments with attached RFID care label will increase by</td>
</tr>
<tr>
<td></td>
<td>the value of the label</td>
</tr>
<tr>
<td></td>
<td>- Non-refundable tax applies only to China, and thus, should not be</td>
</tr>
<tr>
<td></td>
<td>considered in the analysis. Only import customs fees should be</td>
</tr>
<tr>
<td></td>
<td>considered.</td>
</tr>
<tr>
<td></td>
<td>- The average customs fees for the case company equal to 7.55%</td>
</tr>
<tr>
<td>Investments</td>
<td>- Changing current security infrastructure into the one required for RFID</td>
</tr>
<tr>
<td></td>
<td>would involve changing all the antennas as well as additional installation and tuning costs</td>
</tr>
<tr>
<td></td>
<td>- A new RFID antenna costs around 1000 €</td>
</tr>
<tr>
<td></td>
<td>- The amount of antennas differs from store to store, but on average it</td>
</tr>
<tr>
<td></td>
<td>is 8 antennas per store</td>
</tr>
<tr>
<td></td>
<td>- While calculating the costs, it is essential to include savings from selling the old hard tags - around 2,000,000 €</td>
</tr>
<tr>
<td></td>
<td>- Installation cost is around 20% of the total infrastructure cost</td>
</tr>
<tr>
<td>Global</td>
<td>- Additional cost of a person responsible for the coordination of source</td>
</tr>
<tr>
<td>supervisor</td>
<td>tagging globally should be added</td>
</tr>
</tbody>
</table>

Table 7. Key learnings from the interviews related to costs of RFID implementation.
**Key learnings from the interviews related to qualitative aspects of RFID adoption**

- Even though RFID is now in the global momentum, it is still not widely adopted
- There is an Internet of Things push for the retail industry, and thus, retailers need to accelerate IoT value creation
- Creating RFID business case from the Store Operations perspective would complement the current case company’s RFID business case
- Sewing RFID into garments will not cause extra shrinkage, which means it can act as an EAS device
- Current RF tags are better in terms of security than RFID labels
- Current product shrinkage of 2.29% would rise to around 5% with the employment of RFID in a care label
- There might be sustainability issue related to not re-using the soft tags

Table 8. Key learnings from the interviews related to qualitative aspects of RFID adoption.

Even though it was mentioned by one of the interviewees that current RF hard tags are a better security device than RFID labels, the findings from the literature disclosed the opposite. In fact, some authors emphasize the idea that RFID as EAS minimize product shrinkage (Huber, 2007; Sounderpandian, 2006). Hardgrave (2014) even goes further assuring that RFID will replace traditional electronic article surveillance for loss prevention in retail stores. Moreover, it was stated by the two industry experts that sewing RFID into garments would not cause extra shrinkage, which means that it can, in fact, act as an EAS device. In addition to that, according to Bamfield (2011), it is normal that managers do not believe in RFID as EAS, since only 20% of the managers that he interviewed believed that the main purpose of implementing RFID was related to the security needs of the stores. Therefore, it has been decided to continue analyzing RFID business case from the Store Operations perspective, where RFID acts as EAS device.

**Cost analysis**

With the objective of evaluating if this solution is economically profitable, a comparative cost analysis was performed. The cost of the analyzed solution was compared to the case company’s existing solution. These are the following:

- Analyzed solution: (1) RFID in the care label sewn into garments plus (2) regular non-RFID price tags
- Current solution: (1) hard alarm tags being attached to the garments in the case company’s stores by the stores employees plus (2) RFID price tags.

In order to perform a valid cost analysis, the aforementioned interviews and the literature review were taken into account and both direct and indirect implementation costs were considered.

**a. Direct implementation costs**

First, and biggest, cost that had to be taken into consideration was, what Baysan and Ustundag (2012) classify as a hardware cost, and what Bunduchi and Smart (2010) call a direct implementation cost, which mainly involve equipment costs. In this analysis this included: (1) cost of EAS tags, (2) cost of price tags, and (3) additional investments.
• EAS tags cost
In order to calculate the cost of EAS hard tags for the current solution, the amount of new hard tags purchased per year and the price of these hard tags was used. These values were obtained from the Head of Security and the following formula was used to obtain this cost:

\[
\text{Cost of EAS hard tags (current solution)} = \text{Price of EAS hard tag} \times \text{Amount of hard tags purchased per year}
\]

Calculating the cost of RFID care labels for the analyzed solution, on the other hand, proved to be more complicated, since not all the items that the case company sells are possible to be source tagged with a care label. Thus, the amount of pieces bought in 2015 was obtained from the case company’s internal database, with the division on garment types and only the source tag-enabled garments were selected. Moreover, garments valued below 9.95€ (value obtained from the Head of Security) and above 30€ (value estimated by the researchers, based on the assumption that pieces above this price would have to be hard tagged, due to possible increase in shrinkage, like in case of Decathlon) were excluded. The final percentage of garments taken into account is called ‘Tagging quota’ and the calculations leading to obtaining this value are presented in Appendix 20. The final amount of selected garments, together with the price of RFID care label obtained from the suppliers, enabled the calculation of the total cost of RFID EAS tags. Due to the conservative approach of the researchers, the most expensive value given by the suppliers was taken into account. The formula that was used to obtain the cost of RFID care labels is presented below:

\[
\text{Cost of RFID care labels (analyzed solution)} = \text{Amount of pieces bought by case company in 2015} \times \text{Tagging quota} \times \text{Price of RFID care label}
\]

• Price tags cost
Another hardware/implementation cost (Baysan and Ustundag, 2012; Bunduchi and Smart, 2010) that needed to be taken into consideration was the cost of price tags. In case of the current solution, the price of the RFID price tag was taken into account. For the analyzed solution, a price of a regular price tag (without attached RFID) was considered. Both values were obtained from the RFID Project Manager. The following formulas were used to obtain this cost, depending on the analyzed solution:

\[
\text{Cost of price tags (current solution)} = \text{Amount of pieces bought by case company in 2015} \times \text{Tagging quota} \times \text{Price of RFID price tag}
\]

\[
\text{Cost of price tags (analyzed solution)} = \text{Amount of pieces bought by case company in 2015} \times \text{Tagging quota} \times \text{Price of regular price tag}
\]

• Additional investments cost
Lastly, cost of additional investments had to be calculated. This cost is only calculated for the analyzed solution, since no investment is needed for the current solution. Here Baysan and Ustundag (2012) mention RFID readers and RFID-enabled infrastructure (middleware cost), while Bunduchi and Smart (2010) refer to it as switching costs. These include: (1) changing the current security antennas for the RFID enabled antennas and (2) buying new RFID readers for the point-of-sale (POS). In order to calculate the cost of the latter one, (1) the price of a RFID reader, which was obtained from the online research performed by the researchers, (2) the total amount of the case company stores worldwide, and (3) the average amount of points-of-sale per store, which was
obtained from the internal case company’s database, was taken into consideration. The formula that was used to obtain the cost of RFID readers for POS is presented below:

Cost of RFID readers for POS (analyzed solution) = \( \text{Amount of case company stores worldwide} \times \frac{\text{Average amount of POS per store}}{\text{Price of RFID reader}} \)

To calculate the switching cost related to changing the current security antennas for the RFID enabled antennas, similar values were taken into account. These include: (1) the price of a RFID enabled antenna, which was obtained from the Head of Security, (2) the total amount of the case company stores worldwide, and (3) the average amount of antennas per store, which was obtained from the Head of Security. The following formula was used to obtain this cost:

Cost of RFID antennas (analyzed solution) = \( \text{Amount of case company stores worldwide} \times \frac{\text{Average amount of antennas per store}}{\text{Price of RFID enabled antenna}} \)

In addition to that, while calculating cost of additional investments, service costs, mentioned by Baysan and Ustundag (2012), needed to be considered. This includes configuration and installation costs, which were estimated to be equal to 20% of the total cost of RFID readers and antennas. This value was obtained from the Business Development and Change Manager, who did a source tagging business case in the past. The formula that was used to obtain this cost is presented below:

Cost of configuration and installation (analyzed solution) = 20% \( \times \) (Cost of RFID readers for POS \( \times \) Cost of RFID antennas)

b. Indirect implementation costs

Moreover, within the additional investment costs, the indirect implementation costs (Bunduchi and Smart, 2010) had to be taken into account. This again is calculated only for the analyzed solution and it includes project costs as well as value of the global source tagging responsible. For the latter one, 50% of average yearly full-time salary was considered, which was obtained from the Business Development and Change Manager, while the yearly labor cost was taken from the case company’s internal database. The following formula was used to obtain this cost:

Cost of global source tagging responsible (analyzed solution) = 50% \( \times \) Average yearly labor cost

Regarding the project costs, five full time project members for five years and one hour of training for every store employee worldwide were taken into consideration, which was discussed with RFID Project Manager. The salaries and the amount of store employees worldwide were obtained from the case company’s internal database. The following formula was used to obtain this cost:

Cost of the project (analyzed solution) = (5 project members \( \times \) 5 years \( \times \) Average yearly labor cost) + (Amount of case company’s store employees worldwide \( \times \) Average hourly labor cost in the stores)

One additional cost that was not mentioned in the literature was taken into account, namely the extra customs fees, which was brought up by the Industry Expert 2. The value of the customs fee was obtained from the Global Import/Export responsible and the formula that was used to obtain this cost is presented below:

Cost of extra customs fees (analyzed solution) = Cost of RFID care labels \( \times \) Customs fee
Furthermore, even though Business Development and Change Manager, who did a source tagging business case in the past, suggested that the old hard tags can be sold, due to the conservative approach taken by the researchers, this profit was not considered.

Finally, in order to conduct a valid comparative cost analysis, time that the store employees currently spend on tagging the garments in the case company’s stores had to be considered. This value was also obtained from the Business Development and Change Manager and it was multiplied by the amount of tagged garments and average store salary, which was obtained from the case company’s internal database. The following formula was used to obtain this cost:

\[
\text{Cost of tagging (current solution) = Amount of pieces bought by case company in 2015} \times \text{Tagging quota} \times \text{Average time spent on tagging the garments} \times \frac{\text{Average hourly labor cost in the stores}}{\text{Number of seconds in 1 hour}}
\]

The summary of all the costs taken into account, together with the formulas is presented in Table 9.

<table>
<thead>
<tr>
<th>Costs</th>
<th>Hard EAS tags + RFID price tags</th>
<th>RFID EAS tags</th>
</tr>
</thead>
</table>
| EAS tags | ● Amount of new hard tags per year  
        |   ● Price of the hard tag | ● Amount of pieces bought by case company in 2015  
|        |                               |   ● Tagging quota  
|        |                               |   ● Price of the RFID tag |
| Formula: | \(\text{Cost of EAS hard tags} = \text{Price of EAS hard tag} \times \text{Amount of hard tags purchased per year}\) | \(\text{Cost of RFID care labels} = \text{Amount of pieces bought by case company in 2015} \times \text{Tagging quota} \times \text{Price of RFID care label}\) |
| Price tags | ● Amount of garments with care label between 9,95 and 30 €  
         |   ● Price of the RFID price tag | ● Amount of garments with care label between 9,95 and 30 €  
|        |                               |   ● Price of the RFID price tag |
| Formula: | \(\text{Cost of price tags (current solution)} = \frac{\text{Amount of pieces bought by case company in 2015} \times \text{Tagging quota} \times \text{Price of RFID price tag}}{\text{Price of regular price tag}}\) | \(\text{Cost of price tags (analyzed solution)} = \frac{\text{Amount of pieces bought by case company in 2015} \times \text{Tagging quota} \times \text{Price of regular price tag}}{\text{Price of regular price tag}}\) |
| Tagging | ● Amount of garments with care label between 9,95 and 30 €  
         |   ● Average store salary  
<pre><code>     |   ● Time spent on tagging one garment | - |
</code></pre>
<p>| Formula: | (\text{Cost of tagging} = \frac{\text{Amount of pieces bought by case company in 2015} \times \text{Tagging quota} \times \text{Average time spent on tagging the garments} \times \text{Average hourly labor cost in the stores}}{\text{Number of seconds in 1 hour}}) | - |
| Extra customs fees | - | ● Customs fee (%) |</p>
<table>
<thead>
<tr>
<th>Formula:</th>
<th>-</th>
<th>Cost of extra customs fees = Cost of RFID care labels * Customs fee</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investments</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
| RFID readers | - | ● Total amount of case company’s stores  
● Average amount of POS per store  
● Price of RFID reader for the POS |
| Formula: | - | Cost of RFID readers for POS = Amount of case company stores worldwide * Average amount of POS per store * Price of RFID reader |
| RFID antennas | - | ● Total amount of case company’s stores  
● Average amount of antennas per store  
● Price of RFID antenna |
| Formula: | - | Cost of RFID antennas = Amount of case company stores worldwide * Average amount of antennas per store * Price of RFID enabled antenna |
| Configuration and installation | - | ● Cost of RFID readers for POS  
● Cost of RFID antennas |
| Formula: | - | Cost of configuration and installation = 20% * (Cost of RFID readers for POS * Cost of RFID antennas) |
| Indirect implementation costs | | |
| Project | - | ● Average yearly labor cost  
● Average hourly labor cost in the stores  
● Amount of store employees worldwide |
| Formula: | - | Cost of the project = (5 project members * 5 years * Average yearly labor cost) + (Amount of case company’s store employees worldwide * Average hourly labor cost in the stores) |
| Global supervisor | - | ● Average yearly labor cost |
| Formula: | | Cost of global source tagging responsible = 50% * Average yearly labor cost |

Table 9. Summary of costs considered in the comparative analysis between current and analyzed solutions.
The share of each cost in case of the analyzed solution is presented in Figure 11. This shows that the cost of the tag itself has the highest share, which means that even slight reductions in RFID care label price will have a large impact on the final result of the comparative cost analysis.

![Figure 11. Share of each analyzed cost (analyzed solution).](image)

Finally, all the aforementioned costs were summarized with the objective of obtaining the final result of the comparative cost analysis. In order to compare the cost of the two solutions (current and analyzed), four scenarios of RFID care label prices were taken into account, since according to Rogers (1962), the price of an innovation decreases during its diffusion process.

(1) In the worst case scenario, that is when price of the RFID label is equal to 0.087 €, the savings obtained from putting RFID in the care label, compared to having it in the price tags and additionally having hard security tags, equal to 4.24%. (2) In the scenario, where the price of RFID label is equal to 90% of 0.087 € (0.078 €), the savings rise to 12.28%. (3) When taking 80% of 0.087 € (0.069 €), they are equal to 20.32%. (4) And finally, in the scenario, where the price of RFID label is equal to 70% of 0.087 € (0.061 €), the savings amount to 28.37%, which means that, while taking only cost perspective into account, RFID placed in the care label should be implemented in the case company. This is summarized in Table 10 and the complete comparative cost analysis is shown in Appendix 21.

<table>
<thead>
<tr>
<th>Scenario</th>
<th>Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td>100% of the highest price: 0,087 €</td>
<td>4,24%</td>
</tr>
<tr>
<td>90% of the highest price: 0,078 €</td>
<td>12,28%</td>
</tr>
<tr>
<td>80% of the highest price: 0,069 €</td>
<td>20,32%</td>
</tr>
<tr>
<td>70% of the highest price: 0,061 €</td>
<td>28,37%</td>
</tr>
</tbody>
</table>

Table 10. Savings obtained from putting RFID in the care label, instead of having it in the price tags and additionally having hard security tags for each scenario.
Due to the fact that economical perspective is not sufficient when making a decision about adopting new technology, qualitative aspects of RFID adoption are described in the next section.

Qualitative analysis

After proving that implementing RFID will contribute to the incremental profit of the case company every year, it is essential to examine if it also fulfills the remaining objectives of the Store Operations department, which are: to improve working conditions for the employees in the store as well as to enhance customer shopping experience in the store. In order to do that, strengths, weaknesses, opportunities and threats of RFID adoption were evaluated, taking into account the concepts presented in the ‘Literature review’ and ‘Theory’ chapters.

a. Strengths and opportunities

RFID possess many strengths, which can be classified as perceived benefits, according to Sharma and Citurs (2005), or relative advantage, according to Tsai et al. (2010) and Bhattacharya and Wamba (2015). RFID benefits can be divided into four categories: (1) shop floor, (2) customer relationship, (3) marketing and promotion, and (4) Logistics and inventory (Moon and Ngai, 2008).

Within the shop floor category, the biggest advantage of RFID is improvement of merchandize visibility in the stores, due to the fact that it gives a more precise understanding of what is in the stores and enables a faster reaction, when specific items are missing in those locations where they were required (Collins, 2006; Sangani, 2004). This enables an automatic and prompt replenishment when the items are sold, which corresponds to effective stock availability. This, as a consequence, results in a sales uplift (Moon and Ngai, 2008). In this way, accuracy and visibility are increased, there is a larger size availability for the consumers, and handling of products is reduced, which according to Bunduchi and Smart (2010), is a direct benefit of RFID.

Another relative advantage (Tsai et al., 2010; Bhattacharya and Wamba, 2015) in relation to shop floor management (Moon and Ngai, 2008) is the RFID’s possible application at the point of sale (POS), since in this case, according to Jones et al. (2005), the need for scanning each product separately is eliminated. Instead, the RFID reader automatically identifies all the items and the system is automatically updated with the new sale. This results in a faster check-out service at the POS (Moon and Ngai, 2008), which directly translates to a better customer experience. It also improves employees’ morale, since it reduces repetitive tasks that reduce motivation and create boredom among employees (Miksen, n.d.). Moreover, according to Finkenzeller (2010), RFID is a suitable solution for the POS, due to the fact that, unlike barcodes and smart cards, it can store big quantity of data, suffers no influence of dirt, degradation due to contact or direction of reader. It also has no operating cost, very fast reading speed and a big possible distance between data carrying device and reader.

Tsai et al. (2010) also mention product security as one of the RFID’s relative advantages. This point is especially relevant for the case company, since analyzed solution involves implementing RFID in the care label attached to the garments, so it can act as an electronic article surveillance (EAS) device. Some authors even emphasize the idea that RFID as EAS minimize product shrinkage (Huber, 2007; Sounderpandian, 2006). According to Hardgrave (2014), with RFID it is possible to prevent loss, since this technology allows the retailer to identify which items are usually stolen. By having this information, it is possible to move those items to a more visualized place in store or warn the sales assistants to particularly pay attention to those pieces of garments. At the same time, fixed
RFID readers in the shop floor could alert personnel while two identical items are taken to the fitting room or while a large number of items are removed from a shelf at the same time. This is an important opportunity of RFID that the case company is missing in its current RFID business case, which is described in the ‘Case Company’ chapter. Furthermore, as stated by Jones et al. (2005), if the RFID tags are used as a security device, no alarms need to be detached from the garments, which again reduces routine tasks mentioned by Miksen (n.d.). Finally, according to Jones et al. (2005), RFID could be used to improve the control of missing items in the store. By having readers distributed on the sales floor, it is possible to identify when big quantities of merchandize are removed from the shelf or taken to the fitting rooms. This is also a big opportunity for the case company, since nowadays, as stated by RFID Project Manager, the difference between the system store stock and the real one in the case company is of approximately 15%, and thus, there is a large space for improvement in this area.

Another relative advantage of RFID mentioned by Tsai et al. (2010), namely consolidation of marketing strategy, belongs to two of the Moon and Ngai (2008) categories: customer relationship and marketing and promotion. According to the RFID Journal (2006), it is possible to obtain a better knowledge about the customer and his or her purchase history by giving them loyalty cards that can be identified through RFID readers located at the entrances of the stores. In this way, sales assistants can provide the customer with tailored suggestions and personalized promotions on the spot. Another marketing strategy that involves the use of RFID is an automatic generation of mix and match suggestions via the RFID enabled mirrors in the store, which allow the customers to see the garments in different colors and add matching accessories (Yoshida, 2003). This can be classified as a strategic benefit of RFID (Bunduchi and Smart, 2010), since it enables generating closer business relations with the customers, and thus, creates another opportunity for the case company to enhance customer experience in the store.

Finally, RFID sewn into garments in the form of the care label enables better Logistics and inventory management, since it eliminates one activity (tagging the garments with security tags) from the stockroom processes, and thus, makes them more efficient (Moon and Ngai, 2008). This improves employees’ morale, since it reduces routine tasks that highly reduce motivation among employees (Miksen, n.d.) and contributes to the incremental profit of the company every year due to large savings in time and labor costs (Moon and Ngai, 2008). It is also an indirect benefit of RFID (Bunduchi and Smart, 2010) obtained from the increased efficiency within the organization.

### b. Weaknesses and threats

One of the factors hindering RFID adoption that is mentioned in all of the three theories presented in the ‘Theory’ chapter is complexity of RFID implementation (Sharma and Citurs, 2005; Tsai et al., 2010; Bhattacharya and Wamba, 2015). This involves mainly challenges related to compatibility in supply chain as well as little harmonization between standards (Tsai et al., 2010). In fact, lack of international standards when it comes to communication protocols, collision handling algorithms and the format in which the information is saved in the RFID chip, is one of the biggest problems that this technology is facing (Michael and McCathie, 2005; Want, 2006; Mandeep et al., 2011). This, according to Rekik et al. (2007) makes the cooperation between different stakeholders in the supply chain very difficult. Tsai et al. (2010) confirms it by stating that collaboration planning and information sharing between supply chain partners is crucial for positive RFID adoption.

Another weakness of RFID related to complexity is its cost, which involves both investment and maintenance (Tsai et al., 2010). This was confirmed by five out of seven interviewees. In fact,
according to RFID Project Manager, the price of a RFID price tag is as much as ten times higher than the price of a non-RFID tag. It is also reaffirmed by the literature, where it is stated that even though price of RFID tags have decreased significantly with time and only costs cents, the price of a RFID tag is still approximately ten times higher than a normal tag (Want, 2006). In the previous section of this chapter, however, it is proven that in spite of those high costs, implementing RFID in the form of the care label is, in fact, economically profitable for the case company. In addition to that, according to diffusion of innovation theory (Rogers, 1962), as more and more fashion retailers adopt this technology, its price will keep decreasing.

Moreover, both Sharma and Citurs (2005) and Tsai et al. (2010) mention organization readiness as potential threat that can hinder RFID adoption. This involves financial readiness, infrastructure presence and capabilities (Sharma and Citurs, 2005), top management support, IT expertise as well as scale and culture of the company (Tsai et al., 2010). Since the case company is one of the largest fashion retailers in the world, the two latter factors do not constitute a problem. Furthermore, since the case company is already involved in successful RFID business case, it means that it is financially ready and counts with the support of top management. When it comes to infrastructure, the case company’s Head of Security confirmed that it is necessary to update all the antennas and POS readers in order to transform them into RFID enabled systems. Moreover, both Sharma and Citurs (2005) and Tsai et al. (2010) mention organization readiness as potential threat that can hinder RFID adoption. This involves financial readiness, infrastructure presence and capabilities (Sharma and Citurs, 2005), top management support, IT expertise as well as scale and culture of the company (Tsai et al., 2010). Since the case company is one of the largest fashion retailers in the world, the two latter factors do not constitute a problem. Furthermore, since the case company is already involved in successful RFID business case, it means that it is financially ready and counts with the support of top management. When it comes to infrastructure, the case company’s Head of Security confirmed that it is necessary to update all the antennas and POS readers in order to transform them into RFID enabled systems. Another factor that affects RFID adoption within the organization is the external environment (Sharma and Citurs, 2005), which involves government impact (Bhattacharyya and Wamba, 2015), perceived consumer readiness as well as perceived stakeholder privacy (Sharma and Citurs, 2005). Due to the fact that a vast amount of large, popular retailers, such as Wal-Mart, Tesco (Smart et al., 2010), Gap, Decathlon, or Benetton (Yoshida, 2003) is already successfully using RFID, it can be assumed that consumers are ready for this innovation. Since RFID tags can be embedded into the garments, however, authors like Garfinkel et al. (2005) highlight the potential privacy implications of having this type of tracking devices on products. As the use of RFID grows among retailers, the concerns about the erosion of privacy also increase. This is due to the fact that the communication between the RFID tags and remote readers is invisible and does not provide any type of warning signal to the person carrying the tracking device (Want, 2006).

RFID conclusions

In spite of the possible weaknesses and threats of RFID adoption, it has been proven that implementing this innovation in the form of care label sewn into garments would fulfill the objectives of the case company’s Store Operations department, which are: to (1) contribute to incremental profit every year, (2) improve working conditions for their employees in the store, and (3) improve customer shopping experience in the store. Moreover, as it was stated by the two interviewed industry experts in the RFID field, since there is a large Internet of Things (IoT) push for the retail industry, it is essential for the retailers to accelerate IoT value creation and adopt RFID now, when it is in its global momentum.

6.2.2. Golden Delivery

After analyzing the answers obtained from the third round of interviews, which were aimed at investigating the previous cases of Golden Delivery (GD), it was discovered that most of them did not include any quantitative data. Apart from Mexico and Germany, the rest of the countries provided mostly qualitative information.
Evaluated aspects of Golden Delivery

The following subsections present different aspects of GD that were evaluated during the assessment of previous successful and unsuccessful experiences at the case company. As mentioned in the ‘Methods’ chapter, all the results presented in these subsections were obtained from Store Operations Manager France, Store Operations Manager Great Britain, Store Operations Manager South Africa, Store Operations Manager Mexico, Area Controller Switzerland, Area Controller Germany and Global Logistics Controller.

**a. Selection of products and stores for Golden Delivery**

GD can be performed in all the stores of a specific region or in some of them. The selection of stores will determine the main objective of the project. In big stores, there are employees with flexible contracts that exclusively perform stockroom processes. On the other hand, in small stores, the employees that perform stockroom processes usually perform also other activities in the store.

If only big stores are selected for GD, the total amount of hours dedicated to this practice can be deducted entirely from the hours currently dedicated to stockroom process in those stores. Therefore, in this case, the main objective of the project would be cost reduction. If only small stores are selected for GD, there is a risk that not all the hours can be deducted from the hours currently dedicated to stockroom process in those stores. Therefore, in this case, the main objective of the project could be improving customer service with the gained extra time.

It was discovered that in order for GD to be efficient, only textile garments should be taken into account.

**b. Efficiency of Golden Delivery**

The unpacking efficiency (unpacking TAKT) in the warehouse or in an extra house has always been lower than the unpacking efficiency in the stores. Depending on the case, the difference was up to 35%. At the same time, due to the nature of the unpacking activities, the efficiency always decreased after the fourth hour of performing that task. It was also observed that the efficiency at the beginning of the project was usually low but improved with time.

In terms of the amount of garments that are incorrectly hanged, the percentage error varied from 1% to 20%. A key aspect to reduce these errors was the use of own personnel to train and audit those who were performing GD.

To ensure the maximum efficiency, it is essential that Store Controllers are informed in advance about the amount of garments that will arrive to the store shop floor-ready, in order to manage the amount of necessary employees in the store. Moreover, the best way of assuring high levels of unpacking efficiency outside the store is by paying employees per piece, or by having strict rules of payment related to efficiency.

**c. Space required by Golden Delivery**

The space required to perform GD is eight square meters per employee. If the total space required is available in the company’s warehouse, there is no need to rent an extra house to perform this practice. On the contrary, if the total space required is not available in the company’s warehouse, an
extra house close to the existing warehouse must be rented. The distance between these two places is important, since it has an impact on the cost and time of the extra delivery.

Since the Logistics department might be the outsourced organization, coordination between Store Operations and Logistics is crucial from the planning phase of GD.

The incorporation of an extra house should not have a negative impact on the sustainability report of the case company due to the fact that energy from renewable sources could be used for its operations. This is a normal practice in the case company, which is already using 100% renewable electricity for own operations in all possible markets.

d. Delivery during Golden Delivery

The most efficient way to transport garments during GD is by using delivery boxes, not rails or bags. Since with GD the garments are transported with alarms and hangers from the warehouse to the stores, volume and weight of the delivery is bigger. Extra delivery cost due to GD varies considerably depending on two main factors:

- The ability of the Logistics department to negotiate with the company performing deliveries
- The way that deliveries are currently charged. Depending on the market, deliveries are charged by truck, weight or box. If they are charged by truck, the extra cost will be lower than if charged by box or weight.

While calculating the extra cost of the delivery, it is important to take into account the extra cost due to volume mentioned before and also the delivery cost from the warehouse to the extra house, in case an extra house is needed. In terms of Golden Delivery, the generation of additional movement of garments due to incremental volume and the incorporation of an extra house would increase, in most cases, the current amount of produced greenhouse gases. Having said that, the emissions produced by Logistics in the case company represent only 3% of the total emissions produced by its operations and most of these emissions are produced to transport garments across continents.

e. Garment Flow during Golden Delivery

During GD, Logistics’ employees at the warehouse must place the garments into the delivery boxes, as early as possible in the morning. This activity is called picking and it must be done early in order to have enough time to perform GD and assure that the garments are in the shop floor at the same time, or earlier, than without GD.

In those cases where there is not enough time between picking and delivery to the stores, GD is unlikely to be successful.

f. Manpower of Golden Delivery

The labor cost is a key indicator of the Golden Delivery’s success. If the employees outside the store have higher salaries than the ones in the store, GD cannot succeed.

The employees outside the store can be either own employees of the company already working for the Logistics department in the warehouse, or external workers hired from a third-party company.
The selection of type of employees is based on costs. It has been observed that usually the cost of third-party employees is lower than own employees in the warehouse.

g. Sales during Golden Delivery

Conversion rates in stores are higher during periods with GD than without it, which means that more visitors made a purchase in stores were garments arrived floor ready (hanged and tagged). The reason behind this could be that the employees provide a better customer service due to the fact that they do not need to perform stockroom process, the activity that is the most disliked in the stores.

h. Working experience during Golden Delivery

In all the analyzed cases, store employees enjoyed GD and were satisfied with its implementation, in spite of the fact that the initial phase of the project usually requires extra effort. This is due to the fact that, at the beginning of the project, the tagging and hanging errors might be higher. For that reason, store controllers must plan in advance for this type of contingencies.

There is also a history of illness rates reduction in the stores during periods with GD. This means that less store employees called sick during periods with GD, in comparison to periods without it.

i. General costs during Golden Delivery

In the unsuccessful cases, costs of GD were higher than traditional stockroom process, however there was no specific quantitative data to support this. In successful cases, on the other hand, costs of GD were up to 40% lower than traditional stockroom process. As mentioned before, the main part of the total cost is the labor cost.

Golden Delivery conditions for success

Unlike RFID, which is a global solution, GD is a more flexible practice that can be developed only in certain markets. After analyzing the general characteristics of GD and its implications on the case company, it is possible to say that GD should be only developed under certain circumstances in order to fulfill the objectives of the Store Operations department. These circumstances are the following:

- Having lower employees’ salaries outside the store in comparison to the ones in the store.
- Selecting only big stores if the main objective of the project is cost reduction and any type of stores if the objective is the improvement of customer service.
- Taking into account only textile garments.
- Coordinating fluent communication between GD supervisor and Store Controllers.
- Assuring low cost space to perform stockroom process in, or close to, the existing warehouse.
- Performing deliveries in currently used boxes.
- Assuring low prices for possible extra delivery costs.
- Having minimum four hours between the moment the garments are ready to be picked and the time when the delivery to the stores is performed.
- Selecting the labor type with the lowest cost outside the store.
- Paying to the outsourced organization per piece in order to maintain high levels of efficiency.
In order to fulfill the objectives of Store Operations, the aforementioned conditions are necessary but not sufficient. Besides meeting these conditions, it is necessary to also have low transactional cost and competences and resources that can improve the performance of the organizations involved in the outsourcing process. With the objective of evaluating these elements, Holcomb and Hitt (2006) strategic outsourcing model, presented in the ‘Theory’ chapter, was used.

**Strategic evaluation of Golden Delivery**

The strategic evaluation of GD was performed by using the seven propositions of Holcomb and Hitt (2006) in relation to this topic. For this evaluation the analysis of the third round of interviews were utilized and special attention was given to the contribution of the Global Logistics Controller.

Implementing GD implies the discontinuation of stockroom process as an internal set of activities and the initiation of procurement from outside suppliers. According to Holcomb and Hitt (2006), these outside suppliers are called specialized firms from intermediate. In case of this study, those firms are either the Logistics department of the case company or a third-party organization external to the case company.

Both transactional costs and resources jeopardized due to the implementation of GD were analyzed by using the propositions of Holcomb and Hitt (2006) presented in the ‘Theory’ chapter. The transactional costs analysis can be found in Table 11, while the resource based-view evaluation is presented in Table 12. The propositions marked in green positively affect the outsourcing decision, while the proposition marked in yellow negatively affects that decision.

<table>
<thead>
<tr>
<th>Proposition</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Transactional Cost Theory</strong></td>
<td></td>
</tr>
<tr>
<td>‘Requirements for firm-specific investments by a focal firm in exchange-</td>
<td>The required investment for GD can be considered low, since extra facilities can be rented (only if needed), no expensive equipment is</td>
</tr>
<tr>
<td>specific assets between the firm and specialized firms from intermediate</td>
<td>required (just extra boxes and wheels), low supervision is recommended, and basic training is provided to the new employees performing</td>
</tr>
<tr>
<td>markets negatively affect the likelihood a firm will pursue strategic</td>
<td>stockroom process.</td>
</tr>
<tr>
<td>outsourcing.’</td>
<td></td>
</tr>
<tr>
<td>‘The number of specialized firms from intermediate markets is positively</td>
<td>Since specialized skills are not required in order to perform stockroom process, the number of firms from intermediate markets able to</td>
</tr>
<tr>
<td>related to the likelihood a firm will pursue strategic outsourcing.’</td>
<td>provide GD should be high.</td>
</tr>
<tr>
<td>‘Technological uncertainty will have a non-linear (inverse U-shaped) effect</td>
<td>GD is a practice characterized by non-technology intensive activities. The variety of hanger types, security tag placement spots and</td>
</tr>
<tr>
<td>on the likelihood a firm will pursue strategic outsourcing, with the slope</td>
<td>types of garments, make the utilization of high technology an unlikely practice. Low skilled labor force is required to perform this</td>
</tr>
<tr>
<td>positive at low and moderate levels of technological uncertainty but</td>
<td>activity.</td>
</tr>
<tr>
<td>negative at high levels of technological uncertainty.’</td>
<td></td>
</tr>
</tbody>
</table>

Table 11. GD Transactional Cost analysis.
<table>
<thead>
<tr>
<th>Proposition</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>‘The extent of complementarity that exists between a firm’s existing capability endowment and capabilities available from intermediate markets positively affects the likelihood a firm will pursue strategic outsourcing.’</td>
<td>Due to the fact that no special capabilities are required to perform GD, there are no competence gaps during changing conditions, or situations in which specialized capabilities enhance the value creation potential of the case company.</td>
</tr>
<tr>
<td>‘The degree to which firms’ objectives reinforce one another positively affect the likelihood a firm will pursue strategic outsourcing.’</td>
<td>Labor unions’ demands and different long-term objectives between the case company and these unions, could result in conflicts and the development of opportunistic behavior. This could represent a threat to GD.</td>
</tr>
<tr>
<td>‘Relational capability-building mechanisms positively affect the likelihood a firm will pursue strategic outsourcing.’</td>
<td>Due to the fact that the case company is characterized by outsourcing most of its operations, constantly adapting its processes due to the high growth rates and the flexibility of their store employees’ contracts, it is possible to say that this organization has an outstanding ability to assimilate, build and reconfigure resources.</td>
</tr>
<tr>
<td>‘Cooperative experience between a firm and specialized firms from intermediate markets, defined by the length and the quality of previous relationships, positively affects the likelihood a focal firm will pursue strategic outsourcing.’</td>
<td>In most of the markets, the case company has already worked with Logistics employees or external ones in extra curricular activities in the warehouse. Therefore, cooperative experience is an antecedent in this matter.</td>
</tr>
</tbody>
</table>

Table 12. GD resource based-view analysis.

After analyzing transactional risks, complementarity of capabilities, strategic relatedness, relational capability-building mechanisms and cooperative experience of transferring the stockroom process outside the store, it is possible to have a better understanding of the proposed strategic outsourcing practice. It was proven that none of the possible threats suggested by Holcomb and Hitt (2006) related to strategic outsourcing represents a problem for the proposed solution, with the exception of strategic relatedness (marked in yellow). This particular point can present a danger for GD if labor unions do not share the willingness of the fast fashion retailer to develop mechanisms that will allow the organization to maintain a long term leading position in their market.

**Golden Delivery conclusions**

The characteristics of GD and the conducted investigation allow the researchers to confirm that, in the aforementioned circumstances, this practice can fulfill the main objectives of the Store Operations department, which are: to (1) contribute to incremental profit every year, (2) improve working conditions for their employees in the store, and (3) improve customer shopping experience in the store. Moreover, the implementation of GD would allow the case company to have a supply chain with superior performance. While today’s stockroom practices are focused primarily on two basic outcomes, which are speed and cost, the objective of GD is to improve cost, quality, cycle time
and flexibility. This way supply chain is not seen merely as a necessity to get the garments on the shop floor, but also as a mean to enhance key results that drive company performance (Hult et al., 2004).

6.3. RQ3 - How can RFID and Golden Delivery be implemented to improve Store Operations?

Since both RFID and GD are feasible for the case company, as they contribute to fulfillment of Store Operations objectives, the authors of this paper believe that they should be implemented, under the aforementioned circumstances. In order to make this process successful, a proper implementation plan needs to be created. Since the two analyzed solutions differ between each other substantially, one being related to innovation and the other one to supply chain, separate implementation guidelines were generated for each of them. Since part of the implementation plan of GD involves the creation of an evaluation framework that can be utilized to evaluate GD in different markets, this tool will be the main focus of this section.

6.3.1. RFID implementation

After performing a comprehensive literature review in the topic of RFID implementation, the following nine steps have been chosen for the case company and other similar fashion retailers to complete in order to successfully implement this new technology in the form of care label sewn into garments:

1. Understand all the potential benefits and threats of RFID and realize what this technology is capable of in order to eliminate the unrealistic expectations related to RFID (Reyes and Jaska, 2007).

This has been done in the ‘Qualitative analysis’ section of the previous sub-chapter. All RFID’s weaknesses together with potential threats are presented there, so that the case company and other similar fashion retailers can have a realistic perception of this technology.

2. Analyze current case company’s EAS system by interviewing all the key employees working with this system in order to have a benchmark for the further analysis (Reyes and Jaska, 2007).

Due to the limited scope of this study, this step has been performed by the researchers only briefly. According to the case company’s employees from the Security department, the radio frequency (RF) system that the case company is currently using is the best on the market right now. Furthermore, a research on different alarm systems has been carried out and it is presented in the ‘Literature review’ chapter. According to Honeywell (2009), RF systems are one of the most widely used EAS systems in retail, leading even over the acousto-magnetic (AM) systems. At the same time, it has been discovered that RFID will replace traditional alarm systems in the retail stores (Hardgrave, 2014). Nevertheless, a more thorough analysis is needed in order to conduct a more extensive benchmark that will be used in the further analysis. This can be done by RFID Project Manager or any other individual, who will be responsible for implementing RFID in the case company.
3. Develop return on investment (ROI) business case (Angeles, 2005; Reyes and Jaska, 2007), by including all the potential intangible benefits that RFID might bring (Reyes and Jaska, 2007).

As part of this study, a comprehensive cost analysis has been conducted, comparing the current solution that case company is evaluating, which involves having standard RF hard tags and RFID price tags attached to garments, to the analyzed solution, involving having RFID in the care labels acting as EAS device and regular price tags. From that, it has been concluded that the case company can achieve savings ranging from 4% to 28%, depending on the price of RFID care label. Furthermore, a ROI business case has been created by RFID Project Manager, including sales uplift predictions, as a part of his RFID investigation. Complementing this with a cost analysis developed by the researchers, will enable creation of a proper RFID ROI business case.

4. Choose a suitable RFID technology, taking the needs of three stakeholders into consideration (Angeles, 2005):
   - Corporate environment of the case company
   - Trading partners valued by the case company
   - Fashion industry

Here Angeles (2005) recommends choosing technology that has the biggest potential for adoption in the marketplace, since extensive technological adoption tend to lower RFID software and hardware component prices. This decision needs to be made by the entire RFID project team, which should consist of employees from Business Development, IT, Security, and Store Operations departments, and it should be made after analyzing all the possible case company’s suppliers. At the beginning, few different RFID systems can be selected and tested in the pilot project, which will be later described in Step 7.

5. Anticipate RFID technical problems (Angeles, 2005).

At this stage, problems related to RFID readers and their possible false reads need to be anticipated and the case company needs to be prepared for them. This should be done by the IT team responsible for RFID project.

6. Manage IT infrastructure issues (Angeles, 2005), including:
   - Data management concerns
   - Integration with back-end applications

After predicting all the technical problems related to RFID, the IT staff from the case company’s RFID project team needs to, first of all, redesign data structures so they can be uniform across the entire case company and its supply chain partners (RFID Journal, 2003). Furthermore, they need to integrate RFID data interface with related back-end applications, such as inventory management or accounts receivable (Angeles, 2005).

7. Test RFID (Reyes and Jaska, 2007) in the form of the pilot project (Angeles, 2005). This should include:
   - Understanding how RFID works in the case company’s unique environment
   - Testing different types of tags and readers
   - Conducting necessary back-end integration routines
   - Upgrading software and hardware infrastructure elements (Roberti, 2003).
This step has already been performed by the case company as a part of its RFID investigation. However, as explained in the ‘Case company’ chapter, this trial, instead of RFID care labels, involved RFID price tags, which cannot act as a security device. Thus, a new pilot project, with RFID care labels sewn into garments, should be conducted in a selected market, taking into consideration all four points mentioned in this step. As a result, the case company will be aware of the consequences of RFID on the organization’s existing operations (Angeles, 2005). With that in mind, relevant trainings for the store employees should be conducted, since by employing RFID in the care label, hard tags will be eliminated, and thus, the stockroom process will be reduced by one activity. These trainings should be carried out by Store Operations department. Finally, at this point, employees and customers feedback should be measured and taken into account in order to improve RFID implementation.

8. Implement RFID by measuring its accuracy and comparing it to the results obtained from the previous system (Reyes and Jaska, 2007).

After the pilot project is completed, the most suitable tags and readers are selected, and all the software and hardware infrastructure elements are upgraded (Roberti, 2003), the RFID system can be implemented in the case company. While implementing the new system, its accuracy needs to be measured (Reyes and Jaska, 2007). This can be done by benchmarking it to the previous system, which was analyzed in the Step 2.

9. Monitor and continuously improve the implemented RFID system (Reyes and Jaska, 2007).

This step will ensure that the system evolves as needed to meet the goals and expectations of the case company or other similar retailers, after it has been implemented. It will also help in achieving competitive advantage by reducing costs and maintaining customer satisfaction (Reyes and Jaska, 2007). Lastly, this step is necessary to further develop other applications of RFID, which are described in the ‘Literature review’ chapter.

6.3.2. Golden Delivery Implementation

After identifying the outsourced activities and giving recommendations about their development, the following three steps have been chosen to successfully implement this practice:

1. Measure the total costs associated with the possible outsourcing practice (McIvor, 2000; Franceschini et al., 2003) and create a strong business plan (Zhu et al., 2001).

With the objective of simplifying the process of evaluating total outsourcing costs and generating a strong business plan, a Golden Delivery evaluation framework was developed. This tool was designed for those Store Operations Managers and Country Controllers of fast fashion retailers who would like to evaluate and implement this outsourcing practice in their specific market. A detailed description of this framework and its testing is provided in the upcoming sections of this chapter.

2. Perform a relationship analysis with possible outsourcing companies (McIvor, 2000) and develop vendor agreement (Zhu et al., 2001; Franceschini et al., 2003).

In order to maintain acceptable levels of quality and efficiency with a long term perspective, the organizations involved in the outsourcing process should have certain characteristics and capabilities. The relationship investigation suggested by McIvor (2000) involves the analysis of the
resource based view theory, which was presented in RQ2. As mentioned before, the opportunistic behavior of labor unions outside the store environment is critical for the success of the project. Therefore, it is recommended to deeply analyze the strategic relatedness between the organizations involved in the outsourcing practice.

When formalizing the relationship between the Store Operations department and the outsourcing organization, emphasis should be put on efficiency. As discovered while analyzing RQ2, the unpacking efficiency in the warehouse or an extra house has always been lower than the unpacking efficiency in the stores. Therefore, it is recommended that compensation is performed in relation to this KPI.

As mentioned before, the cost of extra delivery depends considerably on the negotiations performed with the delivery company. For that reason, it is also recommended that for this step of the outsourcing implementation, experienced negotiators are used.

3. Perform outsourcing transition (Zhu et al., 2001) and review outcome (Franceschini et al., 2003).

Once the outsourcing company has been chosen and a detailed contract has been signed, the transition of the stockroom process to outside the store should be planned carefully. In relation to this aspect, the transition plan suggested by Zhu et al. (2001) is recommended. Fluent communication during this stage of the implementation process is crucial, as well as the timeline of reference. In order to minimize the unpacking errors at the beginning of the project, training to outsourcing employees is recommended before starting with Golden Delivery. At the same time, the role of an experienced supervisor in the warehouse or extra house is of utmost importance during this implementation step.

Furthermore, as suggested by Franceschini et al. (2003), the outsourcing implementation is not finished until this practice is evaluated and compared with the objectives previously established in the business case developed at the beginning of the implementation plan. In order to effectively perform this evaluation, the KPIs presented in the Golden Delivery evaluation framework are recommended.

Golden Delivery evaluation framework

The Golden Delivery evaluation framework, designed to simplify the first recommended step of the outsourcing implementation process, has two main components. The first one is the Golden Delivery Guideline, which provides: (1) a description of this practice, (2) the GD conditions for success, (3) an explanation of the evaluation tool and (4) the KPIs that should be used to evaluate GD after it is being implemented. The complete document can be found in Appendix 22. The other component is an Excel tool that can be utilized to simplify cost calculations. The combination of both parts allows the users to identify if Golden Delivery is a profitable alternative in their specific market.

Some of the costs associated with Golden Delivery were identified in the third round of interviews, and thus, they are already predetermined as part of the framework, while other values that are specific for each market, must be entered by the user of the framework.

The Excel tool consists of four different sheets and each of them can be found in Appendix 23. The only two sheets that should be used by the user are the ones called ‘User Interface’ and ‘Labor Costs’. Once all the values in the aforementioned sheets are entered, the user will get a series of results in the first Excel sheet. The tool will then provide the user with estimation and average
values of both costs, the one of the outsourcing practice and the one of the stockroom processes developed in the store, under the same circumstances. This is essential in order to evaluate if Golden Delivery is a profitable alternative. At the same time, this tool allows the user to know if Logistics employees or third-party ones should be used. It also gives the average amount of employees needed per day. Due to the fact that the outsourced activities can be developed in own warehouses or in externally rented extra houses, the framework also suggests what is the best option in terms of costs. Ultimately, the tool provides the user with information about how many extra delivery boxes and boxes wheels should be bought, if needed.

The pre-established parameters used in the evaluation framework are stored in the Excel sheet called ‘Pre-established parameters’ and can be found in Appendix 24. The calculations used in the evaluation framework are stored in the Excel sheet called ‘Calculation’. They can be found in Appendix 25.

In order to improve the framework and evaluate if it fulfills its purpose, the Mexican market of the case company and their previous experience with GD was used for its testing.

**Testing of Golden Delivery evaluation framework**

After introducing the values from the previous GD experience of the case company’s Mexican market in the GD evaluation framework, results were obtained. It was possible to observe that, in this case, the framework suggested the utilization of the third-party employees, since in this specific market, salaries of this type of employees are lower than the ones of Logistics employees in the warehouse. Since in Mexico’s case no extra house was needed, all the values related to category are zero. Moreover, no extra boxes or wheels had to be purchased. The final result of the evaluation framework gave a positive answer, which means that the total cost of GD was lower than performing stockroom process in the stores, and thus, GD should be tried in that market.

While comparing the results suggested by the evaluation framework (Appendix 28) with the real values of Mexico’s case (Appendix 27), it is possible to observe that there is a difference in the total cost of GD of 567,19 €. This is due to the fact that, in the framework, 487,29 € are used to cover the expenses of a full-time supervisor of GD, which was not used during Mexico’s case. The objective of adding a full-time supervisor is to reduce the unpacking errors and the decision to add this cost was made after analyzing the previous cases of GD presented in RQ2. If the cost of the full-time supervisor is added to the total cost of GD in Mexico’s case, the difference between the result provided by the framework and the real experience in Mexico only differs by 3%. This difference can be justified by variances in the exchange rates and rounding differences in the pre-established values.

On the other hand, while comparing the total cost of non GD, the difference between the estimated cost calculated by Store Operations Manager in Mexico and the one estimated by the framework, is less than 9%. Since both of those values are estimations, the authors of this research believe that this is an acceptable discrepancy.

In conclusion, it is possible to argue that the GD evaluation framework can be used by Store Operation Managers and, most importantly, it provides very similar values than the ones obtained in reality. For that reason, it can be considered a useful and accurate tool to evaluate and decide if GD should be tried in specific markets.
7. Discussion

This chapter presents a discussion about the results of this study and their analysis.

7.1. Discussion on results and analysis

Considering that RFID and Golden Delivery contribute to the fulfillment of the three objectives of Store Operations Department, the option of merging both solutions seems like a possible alternative. Having said that, the combination of both solutions would reduce the immediate individual costs benefits demonstrated in this investigation. This is because both RFID and GD cost analyses take into consideration current store employees’ salaries. If RFID is implemented with GD, those analyses should be performed again taking into consideration the labor cost outside the store, which is lower than the one in the store. On the contrary, the benefits related to employee satisfaction and customer experience would remain the same, if both solutions are combined. Moreover, implementation of both solutions would allow the case company to also benefit from other usages of RFID as well as the reduction of the stockroom areas in newly rebuilt stores.

As previously demonstrated, even in the most conservative scenario, both alternatives could contribute to incremental profit every year if executed. Having said that, it is important to clarify that the cost analysis related to RFID and GD considered that, by implementing these solution, most of the time dedicated to stockroom process in the stores can be deducted from current store employees’ hours. This assumption was reassured by the case company employees from the Sales and Marketing department due to the flexibility that characterizes store employees’ contracts. If customer service would like to be improved by incrementing store employees’ availability on the shop floor, current store employees’ working hours could be maintained, even while implementing RFID or GD. This will enhance customer experience, not only for having more satisfied employees, but also, for increasing the interaction between customers and employees.

While deciding among different solutions to improve the efficiency of Store Operations, researchers faced the challenge of choosing between deeply analyzing one or more solutions. Since RFID and GD seemed as solutions that could be combined, both were investigated. Although all the research questions were answered on time without compromising the quality of the research, if only one solution have been chosen, it is possible to infer that the study of the chosen solution could have been taken further. That way, not only framework testing but also a small pilot could have been developed.

Even though the examination of the two solutions involved both qualitative and quantitative analysis, the study of each of them was performed in a different way for two main reasons. First, the implementation of RFID in the care labels had never been analyzed by the case company from the Store Operations perspective, while Golden Delivery was tried in several markets before. Second, since the attachment of RFID care labels into garments can only be done at the production centers, it
was analyzed as a global solution. On the contrary, GD is a flexible solution that can be implemented only in some markets.

### 7.1.1. RFID

There are two main issues that need to be discussed in relation to RFID solution. First, while doing literature review and interviews, both with industry experts and the case company’s employees, different opinions regarding RFID acting as a security device were discovered. The case company’s Head of Security mentioned that current RF hard tags are a better security device than RFID care labels. Moreover, he suggested that the current case company’s product shrinkage of 2.29% would rise to around 5% with the employment of RFID in a care label. With that in mind, the authors of this thesis considered discarding RFID business case from the Store Operations perspective. However, since the findings from the literature disclosed an opposite effect of RFID on the product shrinkage, which was also confirmed by the industry experts, who stated that sewing RFID into garments would not cause extra shrinkage, it has been decided to continue analyzing RFID acting as EAS device.

Another issue is related to savings obtained from sewing RFID care label into garments. As shown in the previous chapter, these savings can range from 4.24% to 28.37%, depending on the price of the RFID label. Even though in terms of money saved, these values are not high for the case company standards (Appendix 21), the main purpose of this cost analysis was to see if these values would not negatively impact Store Operations’ objective to incrementally contribute to the company profit every year. Furthermore, even small savings can substantially contribute to the current case company’s RFID business case, which was described in the ‘Case Company’ chapter, and thus, this solution can be considered successful.

### 7.1.2. Golden Delivery

As for RFID, there are also issues that need to be addressed in relation to the Golden Delivery solution. First, special attention must be paid to the strategic relatedness of the outsourcing organization. Since on time availability on the shop floor is crucial in the fast fashion industry, the outsourcing organization and their employees must share the same goals and communication protocols than the case company. Constant collaboration and interaction between both organizations are key factors for the long-term success of this practice. The economic strength of Golden Delivery is based on stable levels of efficiency as well as the difference between employees’ salaries in and outside the store. Those two parameters must remain constant throughout time in order to maintain a healthy relationship between both organizations. As suggested by Logistics Controllers, labor unions are usually stronger in warehouses than in the retail stores and, that is why, workers’ undesired behavior must be prevented by maintaining high levels of workforce satisfaction.

Another important point of discussion is the one related to the pre-established parameters used in the Golden Delivery evaluation framework. These parameters were established through the analysis of different rounds of interviews as well as the literature review. By testing the framework it was possible to determine that, for the case company, these values are accurate. Researchers believe that, for fast fashion retailers with similar practices, these values also apply, but they should be corroborated. For that reason, those values can be accessed and modified in the Excel tool if needed.
8. Conclusions

This chapter presents concluding remarks related to the results of this study. The research questions are answered and implications on sustainability are discussed. Furthermore, limitations of this study and proposed future research are given.

8.1. Fulfilling the purpose of the research

The purpose of this thesis was to better understand fast fashion retailers’ Store Operations, as well as the influence of new innovative practices and technologies on the processes of this department, all with the final goal of increasing Store Operations’ overall efficiency. In order to fulfill this purpose, the main research question was created: ‘How can established fast fashion retailers improve their Store Operations in order to cope with growing efficiency requirements and rapidly changing technology in their stores?’ Three sub-questions were generated from the main one and were answered by conducting a case study at the case company’s Store Operations department. The answers for each sub-question are presented below:

8.1.1. RQ1 - What are the most important areas of improvement affecting Store Operations?

The most important areas of improvement affecting Store Operations are:

- Stockroom processes
- Technology and innovation
- Alarm systems
- Employee morale
- Customer service

Furthermore, it was concluded that these areas are interrelated. Incorporation of innovative ideas, new technological developments and alarm systems into stockroom processes can simplify and make that set of tasks more efficient. By doing so, physical demands of the job and routine work in the store could be reduced, improving well-being, motivation and morale of employees. All these factors not only have a direct impact on the customer service provided in the store, but also, on the growth rates and profitability.
8.1.2. RQ2 - What solutions can be developed to improve Store Operations?

Four possible solutions were considered for the case company, out of which two were selected for further analysis: RFID and Golden Delivery. This evaluation was based on different sets of interviews, theory, literature and the objectives of Store Operations department, which are: to (1) contribute to incremental profit every year, (2) improve working conditions for their employees in the store, and (3) improve customer shopping experience in the store.

RFID

RFID was analyzed both from quantitative and qualitative perspective. With the objective of evaluating if this solution is economically profitable, a comparative cost analysis was performed. The cost of the analyzed solution, which involves: (1) RFID in the care label sewn into garments and (2) regular non-RFID price tags, was compared to the case company’s existing solution, which consists of: 1) hard alarm tags being attached to the garments in the case company’s stores by the stores employees as well as (2) RFID being placed in the price tag. Furthermore, four scenarios of RFID care label prices were taken into account, since according to Rogers (1962), the price of an innovation decreases during its diffusion process, which was also confirmed by the interviewees. The savings obtained from implementing the analyzed solution can range from 4.24% in the worst scenario of the RFID price to 28.37% in the best-case scenario.

After proving that implementing RFID will contribute to the incremental profit of the case company every year, it was essential to examine if it also fulfills the remaining two objectives of the Store Operations department, which are: to improve working conditions for the employees in the store as well as to enhance customer shopping experience in the store. Despite some possible weaknesses and threats of adopting RFID, such as high complexity and cost or potential privacy implications, the number of benefits and opportunities that this technology provides is much greater. By having RFID in the care label sewn into garments as a security device, no hard alarms have to be added in most of the garments, the monotonous activities in the stores are reduced, and therefore, working conditions in the store are improved. Moreover, it has been proven that better working conditions have a direct impact on employee morale and customer satisfaction, which proves that implementing this innovation in the form of care label sewn into garments would fulfill all three objectives of the case company’s Store Operations department.

Golden Delivery

Golden Delivery (GD), which in the case company is an operation of outsourcing of stockroom process, was analyzed mostly qualitatively in this section. After performing an investigation on previous GD cases in the case company, it has been discovered that this practice contributes to the improvement of operational efficiency. This, however, is only valid under the following circumstances:

- Having lower employees’ salaries outside store in comparison to the current ones in the store.
- Selecting only big stores if the main objective of the project is cost reduction and any type of stores if the objective is the improvement of customer service.
- Taking into account only textile garments.
- Coordinating fluent communication between GD supervisor and Store Controllers.
● Assuring low cost space to perform stockroom process in, or close to, the existing warehouse.
● Performing deliveries in currently used boxes.
● Assuring low prices for possible extra delivery costs.
● Having minimum four hours between the moment the delivery is ready and the time when the delivery to the stores is performed.
● Selecting the labor type with the lowest cost outside the store.
● Paying 3rd party company or own employees per piece or with contracts including strict rules of payment related to efficiency.

When these circumstances were met, it was possible to conclude that GD could contribute to the fulfillment of the Store Operations department’s objectives. Previous cases of GD implementation have demonstrated savings up to 40% of what today is spent on stockroom process. For that reason, this is a practice that could contribute to incremental profit every year if executed. Moreover, the implementation of GD would eliminate the entire stockroom process of all textile garments in the store. Since stockroom process is the most disliked set of activities among the store employees, GD could also improve working conditions for employees in the store. Finally, as discovered in the literature, there is a close relationship between satisfied employees, availability on the shop floor and good customer service. Since GD improves employee satisfaction by reducing time on the stockroom, sales assistants could be more present on the shop floor. Therefore, GD also fulfills the third objective of the Store Operations Department, improving customer shopping experience in the store.

Simultaneously, the implementation of GD would allow the case company to have a more ‘best value supply chain’ with superior performance. While today’s stockroom practices are focused primarily on two basic outcomes such as speed and cost, the objective of GD is to improve cost, quality, cycle time and flexibility. As mentioned in the ‘Literature review’, this way supply chain is not seen merely as a necessity to get the garments on the shop floor, but also as a mean to enhance key results that drive company performance (Hult et al., 2004)

8.1.3. RQ3 - How can RFID and Golden Delivery be implemented to improve Store Operations?

In order to make the implementation of the two selected solutions successful, a proper implementation plan needed to be created. Since RFID and Golden Delivery differ between each other substantially, one being related to innovation and the other one to supply chain, a separate implementation guidelines were generated for each of them.

**RFID implementation**

The following nine steps have been chosen for the case company and other similar fashion retailers to complete in order to successfully implement this new technology in the form of care label sewn into garments:

1. Understand all the potential benefits and threats of RFID and realize what this technology is capable of in order to eliminate the unrealistic expectations related to RFID (Reyes and Jaska, 2007).
2. Analyze current case company’s EAS system by interviewing all the key employees working with this system in order to have a benchmark for the further analysis (Reyes and Jaska, 2007).

3. Develop return on investment (ROI) business case (Angeles, 2005; Reyes and Jaska, 2007), by including all the potential intangible benefits that RFID might bring (Reyes and Jaska, 2007).

4. Choose a suitable RFID technology, taking the needs of three stakeholders into consideration (Angeles, 2005):
   - Corporate environment of the case company
   - Trading partners valued by the case company
   - Fashion industry

5. Anticipate RFID technical problems (Angeles, 2005).

6. Manage IT infrastructure issues (Angeles, 2005), including:
   - Data management concerns
   - Integration with back-end applications

7. Test RFID (Reyes and Jaska, 2007) in the form of the pilot project (Angeles, 2005). This should include:
   - Understanding how RFID works in the case company’s unique environment
   - Testing different types of tags and readers
   - Conducting necessary back-end integration routines
   - Upgrading software and hardware infrastructure elements (Roberti, 2003).

8. Implement RFID by measuring its accuracy and comparing it to the results obtained from the previous system (Reyes and Jaska, 2007).

9. Monitor and continuously improve the implemented RFID system (Reyes and Jaska, 2007).

**Golden Delivery implementation**

The following three steps have been identified to successfully implement a strategic outsourcing plan for stockroom process currently performed in the stores:

1. Measure the total costs associated with the possible outsourcing practice (McIvor, 2000; Franceschini et al., 2003) and create a strong business plan (Zhu et al., 2001).

2. Perform a relationship analysis with possible outsourcing companies (McIvor, 2000) and develop vendor agreement (Zhu et al., 2001; Franceschini et al., 2003).

3. Perform outsourcing transition (Zhu et al., 2001) and review outcome (Franceschini et al., 2003).

8.1.4. Concluding remarks: How can established fast fashion retailers improve their Store Operations in order to cope with growing efficiency requirements and rapidly changing technology in their stores?

First of all, fast fashion retailers need to understand which areas affecting Store Operations have to be improved. This will provide them with a better understanding of the activities that are most disliked by their employees, of the aspects that are considered most important by their customers, as well as the new practices and technological innovations that are available today in the market.

While looking for the best solutions, fast fashion retailers need to be always focused on their employees and the customers. This is due to the fact that, according to Alden et al. (2013), success
in retail operations depends largely on people, namely the customers and the employees, and also the interactions between them. Thus, according to the same authors, in order to succeed, it is essential to listen both to the staff and to the customers.

Furthermore, fashion retailers need to embrace the technological change happening in their stores as well as having more efficient practices. Since in the last few decades, new vertically integrated players have appeared in this industry providing their customers with lower prices (Gustafson et al., 2004; Roberti, 2006), new technology and more efficient processes play a vital role in the improvement of Store Operations of these types of retailers. With that in mind, two solutions have been selected for the case company and other similar fashion retailers with the objective of improving employee satisfaction, customer experience, technology innovation, and long-term sales. These are: RFID working as a security device and outsourcing of current stockroom process. However, depending on the areas of improvement, other solutions might be more suitable for different retailers.

After selecting suitable solutions, fast fashion retailers need to develop implementation plans to successfully implement them within their organizations. Different implementation guidelines should be created for different types of solutions and areas that they are improving.

8.2. Implications on sustainability

Implications on sustainability have become a central part of any organization, since they address how the value is created for all of the stakeholders of a company and further impacts performance of the businesses (Jamali, 2006). With that in mind, it is essential to discuss sustainability in relation to the solutions presented in this thesis. The most common interpretation of sustainability is the triple bottom line, which includes economic, social and environmental aspects (Elkington, 1999). A discussion regarding the implications on sustainability in relation to all of these three aspects is presented in the following sections.

8.2.1. Economic sustainability

The economic aspect of sustainability is related to organization’s long-term profitability and competitiveness (Jamali, 2006). Since both RFID and Golden Delivery have been proven to save on labor costs, and thus, contribute to incremental profit every year, they are economically sustainable. The savings obtained from implementing RFID can range from 4% in the worst scenario of the RFID care label price to 28% in the best-case scenario. In case of GD, on the other hand, this value depends on the market, in which this solution is implemented, since these savings depend mostly on labor costs, which vary from country to country.

8.2.2. Social sustainability (ethics)

The social aspect of sustainability is mostly related to ethics and labor conditions (Jamali, 2006). First of all, since savings for the case company, both in case of RFID and Golden Delivery, are obtained from the cuts on labor costs, it means that the case company would have to dismiss some of its employees or reduce their workdays, and thus, jeopardize its labor ethics. This might have a negative impact on social sustainability of the organization. However, as suggested in the ‘Discussion’, instead of saving on labor costs, the case company can use the time saved on stockroom process to enhance better customer service, by having the staff spend more time on the shop floor and help the customers. In this case the ethical aspect would not be at risk.
Furthermore, since RFID tags can be embedded into the garment, authors like Garfinkel et al. (2005) highlight the potential privacy implications of having this type of tracking devices on products. Want (2006) argues that even if this technology is used in an honorable way and following rules of good ethics by retailers, the RFID tag can still be used in an inappropriate form outside the store. This is due to the fact that the communication between the RFID tags and remote readers is invisible and does not provide any type of warning signal to the person that carries the tracking device. Thus, the privacy issues might also negatively impact organization’s social sustainability.

8.2.3. Environmental sustainability

The environmental aspect of sustainability is related to organization’s impact on the planet’s resources (Jamali, 2006). There are both positive and negative implications of implementing the two suggested solutions on the environmental sustainability.

First, thanks to RFID, by having real time information about location of products, supply chains can be managed in a more efficient way decreasing the impact on the environment (Das, 2009; Sower et al., 2013). For instance, by knowing a shipment of a specific amount of garments is being close to the port, the retailer might wait for that shipment before dispatching half empty trucks to the Logistics center (NXP, 2011). Moreover, Das (2009) suggests that the use of RFID technology can also help to reduce the amount of deliveries to the stores since the retailer would know, in a more precise way, what is in the stores. The same author also highlights the fact that by having that information, the customers can check online what is in every store before performing unnecessary trips to the locations where the wanted product is sold out. This would also have a positive impact on the environment due to the reduction of unnecessary emissions, and thus, positively influence organization’s environmental sustainability.

Furthermore, due to the fact that the research presented in this document focuses on sew-in labels, authors like Schindler et al. (2012) suggest that, in most cases, RFID labels will be disposed with garments. For that reason the waste stream of the label will be the one of the apparel and the same authors argue that could present a problem while trying to recycle those items. As a consequence, the environmental sustainability of the organization will be influenced in a negative way. In response to that, Sower et al. (2013) claim that this statement is based on incorrect assumptions, since current recycle processes can deal with impurities, like the one produced from RFID tags.

Another environmental aspect of RFID that had to be considered is its toxicity. According to Kanth (2011), a passive RFID used in garments could have the following metallic elements: copper, silicon, silver and nickel. According to Schindler et al. (2012) cooper could be a problematic element while recycling non-ferrous metals, and thus, can negatively impact organization’s environmental sustainability. In relation to that matter, one of the biggest producers of RFID antennas, Avery Dennison (n.d.) indicates the labels antennas can be made of copper, aluminum or silver and no PET is used anymore on these labels. This denotes that there are alternatives to non-sustainable materials. Moreover, Sower et al. (2013) argues that very little amount of tags use cooper today and due to the cost of this material, the use of it in RFID tags for garments will be inexistent in the near future. Taking that into consideration, the negative impact of RFID tags and antennas on organization’s environmental sustainability will decrease over time.

In terms of Golden Delivery, as mentioned in the ‘Results and analysis’ chapter, the generation of additional movement of garments due to incremental volume and the incorporation of an extra house would increase, in most cases, the current amount of produced greenhouse gases. Having said that,
since not always an extra house is needed and when it is needed it must be close to the existing warehouse, it can be said that the impact of those emissions would be low. Aligned with this idea is the information provided by a Global Logistics Controller during the third round of interviews, which suggests that Logistics represent only 3% of the total emissions produced by the case company, while most of these emissions are produced to transport garments across continents. Thus, it can be concluded that the negative environmental impact of GD is minimal.

Another concern related to the incorporation of an extra house when the space required to perform Golden Delivery in the warehouse is not enough, is the production of more greenhouse gases due to the increased usage of energy. To avoid that, the electricity generated with the objective of being used in the extra house should come from renewable sources. Since the case company already uses 100% renewable electricity for own operations in all possible markets, this should not constitute as a problem, and thus, would not have a big impact on the organization’s environmental sustainability.

8.3. Limitations of the research and future studies

The main unit of analysis in this study is Store Operations department in the case company, and this area is delimited to five sub-areas, according to the result of RQ1. Having said that, even though the case company is one of the biggest fashion retailers in the world, and thus, can be considered representative, the areas of improvement might be different for other retailers. This has an effect on the generalizability of the findings in terms of fast fashion industry as a whole. Hence, a longer and more extensive research, including several case study companies, should be conducted in the future in order to obtain more generalizable results.

Furthermore, even though different solutions are presented to improve the areas identified in RQ1, only RFID and Golden Delivery are deeply analyzed. In order to improve this study, more solutions should be thoroughly analyzed, depending on the areas of improvement.

Moreover, despite an extensive amount of interviews conducted during this study, only two interviews were carried out with industry experts in the field of technological store solutions. Thus, a significant addition to this study would be interviewing more industry experts, both in the field of innovation, and supply chain.

Another significant limitation of this study is the testing of the evaluation framework for Golden Delivery, since, due to the limited time, it was tested only in one market. Even though this market is considered representative, due to the expertise of its Store Operations Manager in this specific topic, the results of this test could have been different for other countries. Hence, in order to improve this study, a proper testing should be conducted in all ten analyzed markets.

Accordingly, testing of RFID solution should be conducted, since within this study, only implementation plan was created. This should be done with a special focus on garments’ shrinkage measurements, due to the fact that this research is missing concrete data in relation to this topic. Only after shrinkage is properly measured and tested, fashion retailers can decide if implementing RFID as a security device is a feasible option.

This study also opens up for additional research on implementation plans for different solutions. Within this thesis, two separate implementation guidelines were suggested for RFID and Golden Delivery. Thus, there exists a research opportunity to create an implementation plan that would fit different solutions, no matter to which area they belong.
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