The Impact of E-Commerce on Parcel Shipping Operators in The EU and The US

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2018-02-23
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Examensarbete utfört i Transportsystem vid Tekniska högskolan vid Linköpings universitet

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Norrköping 2018-02-23
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Abstract

Parcel carriers are susceptible to changes in the supply chain industry, as the carrier industry consists of many stakeholders who have an impact on the way they function. The stakeholders in the carrier industry are directly affected by the market trends that in turn affect the carrier business. Currently, E-commerce has a major influence on supply chain design, the operation of parcel carriers and the consumers. One main area of this thesis study is to analyse the impact of E-commerce on the parcel carriers in the EU and the US. Over time, E-commerce has caused a shift in the logistics industry that has made the carriers update the solutions they provide to their customers and to update their operations to accommodate the changes brought about by E-commerce. Since the operations of carriers in the EU and the US are different, this study focusses on five major parameters (Segmentation, Networks, Services, Specification and Tariff Structure) that help understand the carriers better in these two regions. This study will also help European Logistics Software Providers to re-organise themselves so it may help them to perform better integration processes between the carrier and their customers. It is evident that E-commerce has affected the parcel carrier industry and that the Logistics Software Providers must consider these parameters to have harmonized collaboration between the stakeholders in the supply chain. It is also difficult to normalise the selection of factors to be considered in the selection of a parcel carrier since the factors have a different effect in different regions around the world.

**Keyword**- E-Commerce, Parcel Carriers, Logistics Software Providers, Logistics Service Provider, Mail and Post, Logistics Services, Networks, Customer, Retail, Logistics Operations
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List of Abbreviations

EU - European Union
US / USA – the United States of America
E-Commerce – Electronic Commerce
3PL/TPL – Third Party Logistics
LSP – Logistics Service Providers
PM – Performance Management
CPT – Compatibility
CST – Cost
QLT – Quality
RPT – Reputation
OP – Operational Performance
FP – Financial Performance
RM – Risk Management
QM – Quality Management
INF – Information Sharing
IT – Information Technology
ESP – Experience in similar products
DP – Delivery Performance
ERP – Enterprise Resource Planning
WMS – Warehouse Management Systems
SCM – Supply Chain Management Systems
SCO – Supply Chain Oriented
PP – Production Planning
VNM – Value Net Management
SCP – Supply Chain Planning
EDI – Electronic Data Interchange
ICT – Information and Communication Technology
OECD – Organization for Economic Co-Operation and Development
B2B – Business to Business
B2C – Business to Customer
C2B – Customer to Business
EPOS – Electronic Point of Sale
QR – Quick Response
VMI – Vendor Managed Inventory
ECR – Efficient Customer Response
JIT – Just in Time
KPI – Key Performance Indicators
DC – Distributions Centers
COD – Cash on Delivery
PEP – Post- E commerce-Parcel
EBIT – Earnings Before Interests and Taxes
1. Introduction

Logistics carriers are vital in delivering goods to customers and handling the transportation in a supply chain. In certain industries, carriers are considered as the final link between the supplier and the customer. Operational regulations are followed in different countries for adapted delivery of goods. The performance of logistics carriers in different countries is evaluated by certain parameters. A shipper in the EU will not have equal operating norms in the US and vice-versa. To understand the differences, we study services, segmentation, networks, tariff structure and specification as our main criteria (LogisticsDegree, 3 April 2012).

As previously mentioned there are different factors that are involved and thus pose a problem for logistics companies to expand borders with ease. Proper analysis of the all the stakeholders and factors need to be considered before any sort of movement is done. This research study will provide an understanding of how logistics carriers work and what needs to be followed for a smooth transition to newer markets (Cargo, 2016).

With expansion/growth, any company explores new markets like the US, which is one of the better strongholds of trade and economics. This study will serve as a roadmap for European logistics software companies to set up operations in the US considering different operational strategies and the impact of e-commerce on parcel carriers. A company with a strong operational footprint in the EU (Europe) will need to consider certain factors before pursuing to enter different markets similar to the US. As different countries have their own rules and regulations to follow, it is not easy to have similar functioning models for both the US and the EU. The concept of the EU, which allows easier trade between different countries, is quite different from how trade operations take place in the US (Pecheanu, 2017). The solution from the study will help companies to understand better how parcel carriers have been impacted due to E-commerce and how the operations have changed in the US and Europe.

The European company that is entering the American market is a logistics software solutions provider who provides services in E-commerce, transport management, reverse logistics, service delivery, and supply chain visibility. One of the main operations of the company is to integrate customers with their partnered logistics carriers. As there is information flow between the customer and carrier, which is not visible to this company, it makes it difficult for them to venture into new markets and open up to more carrier and customer integration. Hence, a case study comparing the parcel carrier between the US and the EU will help them gain a detailed perspective of the factors they would require to consider before expanding in the American market.

It is visible that E-commerce has changed the way the supply chain is modelled and how the parcel carriers operate. The focal company being one of the stakeholders in the supply chain would like to have an overview on how E-commerce has impacted the American and European markets, what factors have to be considered before selecting a parcel carrier and how they can improve their operations in the chain to help provide a win-win situation for their customers and other stakeholders in the chain.
1.1 Purpose
How should a logistics software company adapt entering a new market like the US having expertise from the Europe region? As there is a difference between the operations in the EU and USA, the motive of the case study is to understand both markets equally in order for the focal company to be of service to their clients. The criteria, which are considered for the comparison, will help the focal company to get an insight into the similarities and differences between these two markets.

1.2 Research question
LSP’s have grown over time and have had an impact on the supply chain. Hence, it is important for LSP has to collaborate with the stakeholders of the supply chain for efficient operations and it can be achieved through information sharing, joint planning and better innovative management. Due to different services offered by the LSP’s, the customers have developed factors for selecting an LSP like on-time deliveries, Co2 emissions, financial performance etc. Logistics software helps bring about a positive performance of the supply chain and help integrate the stakeholders of the supply chain with each other and with other LSP’s in the chain. Development of Logistics technology has let to autonomous IT systems and software systems that improve real-time tracking and increase the rate of information exchange.

E-commerce has influenced the logistics industry and changed the architecture of supply chain. Ever since the concept came into existence, businesses have found new ways to update themselves and provide customers with flexibility and different services. E-commerce has broadened the scope of products that can be sold on retail, influenced high levels of information sharing, and provoke the development of different systems like WMS, TMS and other IT systems. E-commerce has also had a negative impact on physical retail store sales as products are sold over the internet and shipped from warehouses or distribution centres.

RQ1 - How do the services and market trends develop for logistics carriers in the EU and the US markets?

RQ2 - How are the parcel carriers developing in the EU and the US due to the impact of e-commerce?

RQ3 - What developments do logistics software provider need to adopt due to the impact of E-commerce?

1.3 Limitations
Due to business confidentiality, not all information/data is available for analysis, and this affects the project scope. Hence, a great deal of publicly available information is used for analysis. Logistics carriers are present all over the globe but this study considers the EU data to compare with the American carriers. There is a limitation in this case since only the carrier side of information is considered and not the customer side information also. Comparing three carriers in the US with two carriers in the EU provides only a limited amount of information for analysis and this information may not be true for all the carriers present in a particular region. Having one representative contact for internal information is not truly
validated. This thesis study has included only five criteria from each carrier for analysis and not looked into another parameter which may affect the carriers.
2. Literature Review

2.1 Logistics

Companies that sell physical articles need logistics to achieve their process flow. There are two types of logistics directly related to the business: inbound and outbound logistics. There are also 3PL (third party logistics) who perform the logistical activities for the company and are not part of the product manufacturing business (LogisticsDegree, 3 April 2012). Logistics has been the backbone of connecting manufacturing or product sales companies with their customers. Warehousing, return logistics etc. are needed to help the company process their order and satisfy their customer.

The activities involved in preparing to ship goods/material from one place to another with means of transportation equipment are logistics. There are different operations involved in logistics like freight transportation, warehousing, distribution etc. Logistics bridges the gap in a supply chain between different players in the chain. Logistics management is part of supply chain management and focuses on the movement of goods it could concentrate on local goods transfer or also on global level depending on the supply network (Wang, Xiaobei; Persson, Göran; Huemer, Lars).

2.1.1 Parcel

A parcel is an article that weighs less than 75kgs, has dimensions smaller than a Euro-pallet and does not require a pallet for transportation. The Parcel is a wrapped bundle of articles which need transportation. (Merriam-Webster, 2017).

2.2 Logistics Networks

All the major players in a supply chain have realized that an extensive long-term network planning will help the companies plan new facilities expand distribution networks and have better collaboration between the suppliers and the customers in the supply chain (Peng, et al., 2011). Logistics networks help the movement of material in forward or reverse direction in any supply network. The network configuration with forward direction allows goods flowing from the supplier to the customer through forwards flows in production and distribution phases of the material handling. The reverse network focuses on the return flow from the customer to the retailer or supplier and may include a disposal center that helps to recover the defective product. Having integrated logistics solutions have proven to make the supply network more productive and efficient. Hence developing a robust logistics network for any company would help maintain its integrity stay competitive and react better to the variations in the logistics industry (Hatefi & Jolai, 2014).

One of the most common methods of physical parcel movements is the hub and spoke model which uses one main location (Main hub) for receiving and sorting parcels and distributing to other transfer points or distribution points. The hub and spoke model could incorporate multimodal transport methods such as rail, air and sea freight that is often considered as most effective and economical solutions for trans-continental cargo handling. It is also applicable to countries with large land mass such as the USA, Canada and Russia. This model often harvests the advantages of economies of scale and exhibit the scope of multi-type containers between hubs (Meng & Wang, May 2011). One of the other major ways of organizing physical
movements of parcels is to establish a robust reverse supply network or reverse supply chain that allows cost-effective solutions in transportation and inventory management and as better helps in handling waste disposal. Reverse logistics has also been proven to improve customer loyalty and increase future sales (Kannan, Devika; Diabat, Ali; Alrefaei, Mahmoud; Govindan, Kannan; Yong, Geng).

2.3 Logistics Service Providers (LSP’s)
LSP’s provide various classical logistics services like transportation and warehousing and have complementary services to aid logistical operations such as administration, track-trace services and handling the material claim for their customers. Since LSP’s handle a large number of activities for their customers, they are one of the major players in their customer’s supply chain. The businesses which use LSP’s are evaluated in many different ways and the performance of the businesses is greatly affected by the performance parameters of the LSP’s and the performance of the LSP is evaluated with certain parameters like lead time, flexibility, on-time delivery and responsibility sharing etc. The global business is evolving and requires a business to acquire, analyse and evaluate the performance statistic which contributes to the success factor for the LSP as the performance management (PM) is no longer from a single company but is a cross-company relationship (Forslund, 2012).

2.3.1 Logistics Carrier
A carrier governs a set of rules of operational hardware that allows easy movement of goods between two points. A carrier could be local for material handling in factories like assembly buffers, overhead transport (Gantry) to global shipping hardware like containers, trucks, ships, and aircraft (Rothe, et al., 2014). A logistics carrier is a company/enterprise that has functional transportation operations to help ship the goods from the sender to the receiver with help of any means of transport (Cargo, 2016). This research study will concentrate on the American and European logistics carriers. The two entities are different as there are certain parameters implemented in the operation of carriers. The basic differences concerning revenue, segmentation, and networks are openly visible and there are few parameters, which need deeper study.

2.3.2 Collaboration in LSP’s
LSP’s have had different problems related to performance management, the factors affecting their performance had internal responsibility issues and also developing better collaborative understanding between the stakeholders in the supply chain due to lack of trust (Forslund, 2012). However, in recent years businesses have been trying to explore outside their organizational limits to collaborate with the partners in the supply chain to have increased efficiency and better responsiveness. This collaboration had led to quicker product development processes, reduced development costs and enhanced technological improvements in the ever-changing market environment. These parameters need to be updated and looked into for modern business considering the fact that life cycle of products is decreasing and every business strategy is played on a global platform and the competition depends on skills and organization in the company. Business goals might be hard to achieve as an individual entity in the supply chain and require high levels of collaboration which leads to coordinated services and operations (Hudnurkar, 2014). According to (Sandberg, 2007) the
companies which have made an effort to collaborate in their supply chain based on supply chain philosophy in the field of logistics have achieved extraordinary results, one of the best examples in the field is that of Wal-Mart where they have CPFR (collaborative planning, forecasting and replenishment) with their supplier in the supply chain. (Sandberg, 2007).

An LSP is selected based on many parameters and what the end business has to offer, the collaboration between the LSP and the business needs to be strong for a successful win-win situation. To have a strong bond between the business and the LSP, the company, which avails the services of the LSP, needs to consider three factors, Determinants, dimensions and enablers. The determinants are the basic requirement for the company to choose services from an LSP, the parameters of the determinants are compatibility (CPT), cost (CST), quality (QLT) and reputation (RPT). The dimensions are later split into a long-term relationship (LTR), operational performance (OP), financial performance (FP) and risk management (RM). These determinants and dimensions are further affected by enablers, which will help the company choose the LSP according to their needs and have an effective collaboration. The enablers for LTR are PM, flexibility in billing and payment, quality management (QM) and information sharing (INF), this means that if a company has these factors fulfilled and considers these factors to be a deciding factor for their selection of the LSP and the company would lead to having a long-term relationship with the LSP. Same way the enablers for OP include IT capability (IT), experience in similar products (ESP), delivery performance (DP) and employee satisfaction level (ESL). Market share (MS) and Geographic spread to success to the retailer (GS) are enablers to financial performance and surge capacity (SC), flexibility in operation and delivery (FOD) are enablers for Risk management (RM) (Jharkharia & Shankar, 2007).

2.3.3 Development in LSP’s

Logistics service providers have evolved over time with developments in other fields, which has also had an impact on logistics services providers and enabled them to grow, develop and expand themselves into different markets and industries. Logistics services providers are otherwise called third-party logistics providers (3PL), supplier and service provider, these names are used in various ways by different researchers as each term is interchangeable and brings out the same meaning for all. Updating the trends has also made businesses to think ways of selecting an external logistics service provider and after the 2008 global economic recession, new questions have risen on how logistics service providers need to be chosen. Businesses have started to look if the traditional way of selecting an LSP still fits if that does not work what new methods can be adopted and the third way is to develop the selection framework which allows new criteria and methods to integrate for businesses (Alkhatib, 2015). Traditional services to the customers are redefined to fit more customizability into the services the LSP’s provide. Mass customisation is offered by differentiating services to an individual customer using their present resources and methods of operation to achieve improved customer satisfaction (Liu, Weihua; Zhao, Xuan; Tang, Ou; Xu, Haitao).

There are many environmental trends that have emerged in recent years with the logistics service providers and had increased the requirement for LSP is to be more innovative (Busse & Wallenburg, 2011). It is evident that the 3PL industry has become a valuable factor for companies to establish a successful supply chain strategy (Lieb, 2005). Due to globalization,
LSP’s have to consider consolidation, handle the increased competitive pressure and deregulate themselves to improve costs and quality. LSP’s need to be innovative and be flexible towards change to be able to cope with competition and developments in the business world. Working with traditional methods might not help develop the business as the world is always updating itself and the competitions are on the rise. Hence, innovation management in a concept LSP’s has to follow which helps them adjust unspecific concepts and make them match their needs and specifications (Busse & Wallenburg, 2011).

In the last decade, there has been a huge impact on the environmental aspects of the supply chain, as the debate to a more sustainable future is considered. This has led to changes in the manufacturing and the transportation sectors where more stringent standards and required are implied. Initiative taken my LSP in moving towards green operations has had a phenomenal role in aiding manufacturers and customer also to adapt to environmental friendly strategies. These environmental tasks are very fundamental due to increase in movement of material and to keep the operations costs down. Since customer demand of green products and other factors, which influence are the pollution tax implied by governments, thus pushing the LSP is to move towards green and sustainable solutions (Centobelli, Piera; Cerchione, Roberto; Esposito, Emilio).

2.4 Logistics Technology and Software

Logistics processes are complex, dynamic and spread-out on a global economy level and conventional operation that are centralized limits the efficiency, as there are many factors and parameters to be considered for effective operations. Using autonomous logistics software helps to control all the parameters with better flexibility according to transient demands. (Schuldt, 2010).

2.4.1 Technology in Logistics

Information is said to be a parameter for the proper operation of a company and in today technology-driven operations, information systems have had an increasing impact on the process realization for an enterprise. Information systems not only have the capability to acquire information, but to also generate information from different physical processes in an enterprise and thus making the information system part of the neural network on business operations. Traditionally the transport processes focused on turnaround time (shorter the better), but due to different impacts on transport processes, transport processes currently also focuses on quality of service provided (Grabara, Janusz; Kolcun, Michal; Kot, Sebastian).

Cloud computing defines the shift in computing and is underlying old obsolete IT systems and infrastructure. It allows users to virtualize hardware and software systems depending on demands by the service provider. It adapts to the dynamic changes in the logistics demands and allows scaling of the autonomous application to act flexibly. One of the requirements for the Logistics based cloud computing to work is the integration with other available logistics systems, total synchronization of data flows and materials flow provides better working of the cloud-based system (Schuldt, 2010). Detectors and sensors help report remote measurements of operating possibly in any means of transport. Exchange of information between vehicles and other external standalone systems are achieved through electronics and wireless systems. All the information is shared, is required to be stored for improvement.
of business and also as a valid record, this is done in databases and data warehouses which are also used for certain computing (Grabara, et al., 2014).

Also considering the container logistics that plays an important role in world logistics, 90% of international cargo is carried out using containers. Container logistics is dependent on RFID (Radio Frequency Identification), GPS (Global Position System) and GPRS (General Packet Radio Service) technology to have flawless information processing and effective use of available equipment and all these systems are independent, particularly GPRS and RFID. Information is stored in the e-tags of containers and this information needs to be shared with the customer who needs to be available for delivery to handle customs operations. Hence, a combined system with GPRS allows real-time information sharing, which also allows real-time read and write operations virtually. Therefore, information sharing is crucial for international logistics operations, standardization of information, development of information sharing platforms and integration of RFID, e-tags, GPS and GPRS is important to bring fundamental improvement for the container logistics. (YIN, et al., 2008).

2.4.2 Logistics Systems
Over the last few years, companies have started to adapt to information technology (IT) to enrich and update their supply chain skills. Due to increased competition in the industry, IT has become a fundamental part of business strategies to have the competitive edge and stay in competition with other players in the same field (Acar, Mehmet Fatih; Zaim, Selim; Isik, Mine ; Calisir, Fethi). Software systems are very important in current logistics process and software modules such as enterprise resource planning (ERP), warehouse management (WMS), transport planning (TMS) and Supply chain management systems (SCM) are complex and are used in different ways (Nettsträter, Andreas; Geißen, Tim; Witthaut, Markus; Ebel, Dietmar; Schoneboom, Jens).

Enterprise resource planning (ERP), has been a major tool for a corporation to manage flow ERP allows the flow of material and information between different stakeholders by using different modules of the supply chain, manufacturing and warehouse management. ERP has given companies with an improved operational performance that in turn improves financial profits (Acar, Mehmet Fatih; Zaim, Selim; Isik, Mine ; Calisir, Fethi). ERP has a positive effect on supply chain-oriented (SCO) firms as it helps the companies to build resources properly thereby incurring more benefits to the organization (Acar, et al., 2017). Production Planning (PP) and Logistics systems have been fundamental components in an ERP and SCM system, which are used to control, plan and distribute systems across the supply chain. These components are generally operated in isolation, but the information from one of the systems is input to another. Companies are adapting to an integrated framework with ERP and supply chain management (SCM) systems, this system needs to be configured and interfaced case-by-case, acknowledging different departments in the business like planning, control, execution of resources and materials and operations. This integrated framework eliminates the needs to have individual systems for ERP and SCM and thus interface with the vendor or supplier network and making it a new production planning (PP) module integrated with ERP or SCM systems. Integration of this application into and ERP systems reduce the incompatibility between the material and capacity planning across different stakeholders in
the supply chain and thereby have flexible and efficient distribution scenarios (Samaranayake & Toncich, 2007).

Originally, Warehouse Management Systems (WMS) were used to control material quantities and storage locations and are fundamentally stock management systems, now they are advanced with higher optimization and management functionalities. WMS is used to control, monitor and optimize complex warehousing and distribution activities. Clients generally have understood the possibilities of cost-cutting solutions for their warehouses with integrated systems with vendors. New functionalities in WMS have been the base to build ERP, SCM and TMS systems that are used for efficient order fulfilment. Abilities to plan routes and tours, support for vendor-managed inventories and billing processes are added in multi-client cases. Transport management (TMS) IT software performed transport related logistics operation based on customized software for the logistics service providers. TMS also covers tasks like planning and optimization of procurement taking in into account cost and time restrictions and planning multi-modal transport networks. TMS software developer provides additional modules with their system to allow other planning, control and monitoring extensions so that a combination of everything is used. Factors like industry’s’ operating scale effect the development of the systems and the integration would be categorised particular to the industry or the clients who are handled and scale of business. Currently, ERP providers moving towards providing TMS extensions with the ERP systems is increasing as compared to where the ERP systems have WMS extensions. Also considering the cost and complexity of WMS packages with ERP is more, small enterprises would prefer to have TMS if their business is going to be transporter intensive (Nettsträter, et al., 2014).

Supply chain management deals with the integrated management of production and logistics networks. SCM covers arbitrary networks and involves all business activities involved in satisfying a customer. SCM is also known as Value Net Management (VNM) as it covers areas of sourcing, transport, manufacturing and delivery. SCM software needs to keep up with the definition of SCM and encompass all logistical planning and execution activities/operation in a cross-business production and logistics platform. Logically, the SCM is developed as a design, planning and execution system for inter and intra-organizational material and information flows. The software systems with the IT support can be divided into Supply Chain Design (SCD), Supply Chain Planning (SCP) and Supply Chain Execution (SCE). SCE includes the functionalities of ERP, WMS and TMS systems and excludes functionalities from the area of event management. As the name suggests SCD attends to the design needs of the network and includes location planning, transport system design and minimizing warehouse with respect to customers’ demands and manufacturing needs/capacities. SCP focuses on planning tasks based on demand, manufacturing, sourcing and distribution patterns that are required by the customer. SCP systems are also integrated with the supplies and capacity planning of the suppliers, which ensures a collaborative operation between the supplier and the customer (Nettsträter, et al., 2014). Present day Information technology systems will be paired with the field of logistics, so to handle the complexity of logistics and to keep with the evolution of IT and Logistics systems. Although software solutions account for heterogeneous fields of application, it still has obstacles both from the user and from the software provider perspectives. Since different users have different requirements, it is essential to have this as
a base to have an effective integration. Using more accurate scheduling and identification systems to solve the minimizing problem of being just-in-time for planning and control processes in production and transportation of material. Robust logistics systems that can over-ride errors or unforeseen incidents, since the software solution is expected to sufficient dimensioning of resources and perform calculations and simulations of alternative scenarios. Having an increased interoperability between different systems also improves the information sharing and the flexibility of the users to use the software system (Nettsträter, et al., 2014).

2.5 E-Commerce

“Broadly speaking, electronic commerce includes any form of economic activity conducted via electronics connections” (Wigand, 1997). E-commerce in a larger picture includes all electronics markets and incorporates networks that are electronically supported and have cooperative connections and the field of application includes product distribution and customer services. Electronic data interchange (EDI) and e-mail (Electronic-Mail) are the platforms in which e-commerce operates and is impossible to trade over EDI without an agreement between the seller and the customer (Wigand, 1997). In the last decade, E-commerce is on the rise and logistics is accepted to be the backbone of e-commerce operations. The implications of e-commerce effect logistics in two main categories, the rise of e-marketplaces and elimination of supply chain points/elements. E-commerce is the current trend and certain researchers have predicted that it bring about competitive landscape changes in an industry as a whole thereby having an effect on stocks of companies creating a new era in the economy (Delfmann, et al., 2002). This is true to the fact as consumers we have witnessed the rise and fall of many e-commerce companies and the companies that have their business models right have a thriving business surge and growth in the industry. Looking into the failed companies, negligence of logistics is considered one of the major factors or failing to push efforts into implying prominent logistics segments (Bretzke, 2000).

For an order to be fulfilled there is always the process of the commodity being shipped to the buyer from the retailer/seller. This, in turn, leads to holding inventories and building warehouses. The final delivery to the customer is dealt by a shipping agency (logistics carriers) which fulfils the order and helps it reach the buyer. Depending on the online retailer, the shipping could be buyer specific or shipper specific. This leads to different options for the players in the supply chain, hence give them the flexibility of a logistic carrier for delivering of goods (Turban, et al., 2015, pp. 558-562). As there is an impact of E-commerce on the way logistics is managed in the supply chain, it is an important factor to study and understand the way they effect the logistics carriers. Efficient supply chain leads to better service levels, setting up DC’s near the customer could prove crucial in attaining high service levels. The delivery process is extremely difficult as the delivery is not from the warehouses to physical stores, but to consumers/individuals who are spread and not in specific locations (Sahine, 2015).
2.5.1 Impact of E-commerce on Businesses
E-commerce has had an impact on business in the last decade and thereby creating a different impact of factors that power world commerce. The principle of operation in an internet environment is different from owning and operating a physical store. The literature available is split into different groups and each group tackles a particular subject. The first and major group comprises of conducting business in the virtual internet environment, many publications also hold key on what type of business would prove successful in the e-commerce platform. E-commerce has influenced the fast and efficient service and the consumers use this as a benchmark to evaluate the services they avail on the e-commerce website. This has also affected the payment systems and these systems have developed to accommodate the flexibility of the customer. Most e-commerce retailers provide cheaper goods/services as compared to traditional stores, which has increased the online traffic (Parys, 2017).

E-Commerce sales accounted for 49.5% of total sales in 2011 in the US. In 2013, the e-commerce sales were estimated to grow 10% annually compared to normal retailers who have only percentage increase of 2.7% (Turban, et al., 2015). Hence, E-commerce has a huge impact on many factors and a major impact on the supply chain.

E-commerce has affected three areas in an economy, the firm, prices and productivity. This has pushed companies to relook their technologies and supply chain strategies. Companies are re-organizing their collaboration and coordination strategies with their stakeholders in the supply chain. Now, most transactions occur through the electronic platform and the internet to enhance processes and increase efficiencies. Over last few years, ICT has contributed 0.2% to 0.5% per year on economic growth for certain OECD countries. It is also estimated that there would be a 5% GDP increase due to the B2B and e-commerce impact. This is also allowed to trade on an international platform easier since sharing of information has become safe, efficient, reliant and faster. E-commerce has also affected the skill requirements for the companies and the trends in certain skills have changed. Due to high usage of ICT, there is a huge demand for skills where the responses are for decision-making and information processing. Hence, this has increased the demand for high-skilled labourers in many sectors and required companies to select candidates based on specialized expertise and people who can handle executive responsibilities (Terzia, 2011).

2.5.2 Impact of E-commerce on LSP’s
Logistics service providers (LSP’s) have a variety of services that their customers can choose from considering their operational criteria. Some functions/domain of services that the LSP’s provide are transportation, warehousing, inventory management, order processing, information systems (IT systems) and packaging. All the above-mentioned functions are directly involved in an e-commerce purchase and an E-Retailer might have to perform one or many of these functions in order to deliver the product/service to the end consumer. Transportation has activities like shipping, forwarding, and relocation etc. same way each function has a list of activities that need to be followed in order to deliver the product. Some of these functions affect the physical flow of goods and the other act like operations support in order for the product to be delivered, the IT systems help is sharing information through
EDI’s and create scheduling and use these systems as expert systems for order processing which leads to order fulfilment. These services are highly standardized and result in interchangeable service among other LSP and they do not coordinate any administrative functions for their customer. Standardizing LSP’s provide better control and implementation in a customer’s logistics systems and thereby having efficient outputs (Bretzke, 2000).

The e-commerce impact has also led LSP’s to have customizing options, where they tailor logistics services and logistics systems according to the needs, preferences and criteria their customers provide. These LSP’s also look into the coordinative and administrative responsibility for their customer since their core competencies are to provide customer customization, hence looking into the core competence they can better understand what they can provide as services for conceptual and coordination services and might also outsource singular logistics operations to bigger and standardized brands. Example of customizing LSP are German WM Group and Ryder systems in the US. These customization processes always work in economies of scale and therefore favour specialized providers of the services (Bretzke, 2000).

2.5.3 Impact of E-commerce on Supply Chain

E-commerce has also affected the business models of companies thereby altering the structure of the supply chain of a complete industry. As discussed earlier the e-commerce market is where the physical sales of goods are replaced by a digital environment and this e-market could be placed anywhere in the supply chain depending on the core business thereby increasing profits and decreasing lead times and more points in the supply chain network. A traditional supply chain flow used to consist of a supplier shipping material to producer and then after the product is produced it is sent to the retailer/seller where it is sold to the consumer, and all the physical flow between the supplier and producer and the producer and retailer is done by an LSP and the consumer would head out to the retailer to purchase the goods they desire. One of the major changes brought about by the e-commerce impact on the downstream segment is the replacement of retailer/seller to e-retailers and e-sellers. Where the products were pushed down in the chain and the last stretch/last mile of delivery was done with the consumer. Logistics activities that were decentralized, uncoordinated, and controlled by the supplier to some extent, which gives the supplier the flexibility to plan, design and coordinates the logistical systems. Now with the advent of e-commerce, the retailer stage is skipped and the supplier concentrate on shipping directly towards the consumer and the highly coordinated package of shipments are broken down into far less bundled shipments, which are shipped directly to the consumer. This change had led the producers and retailers to reconfigure their logistics systems from larger consolidated packages to small shipment that is shipped to a consumer (Bretzke, 2000).

In a classic upstream segment of the supply chain, the supplier is isolated from the downstream part of the chain and does not offer goods to the consumers based on their interest. There exists a supplier-producer or producer relationship, which was the partners were interconnected via EDI. Modern technologies have reduced transaction costs by use of internet and information systems with reduced protocols, the costs are reduced drastically as the electronics market is highly connected with through the internet and the internet provide
a potential to have reduced transaction cost. However, E-retailers have preselected LSPs and have a better partnership to provide a better level of service to the end customer inside their trading environment (Bretzke, 2000).

E-commerce promotes a higher level of importance towards logistics and in many cases cause different logistical tasks. These systems are not very easy to manage and thereby creating new challenges for companies in the retail industry. The companies already focus on marketing and other offline stakeholders and now will need to invest resource to have a robust logistics network to provide the end consumers with the best service possible. Having to build a secondary logistics, set up for these retailers business provide LSP with great opportunities to be innovative with their solutions (Bretzke, 2000). The studies have shown that investments in supply chain upgrade, digital marketing and IT have increased the Selling, General and Administrative (SG&A) costs by 2% to 3%, This is also reflected in the reduction of physical in-store profit by 1% to 2% (Wilson, May 3, 2016). since the e-commerce filed is also not very stable and has a fluctuation, it does not give the retailers the edge to complete convert their systems to electronic markets but also have physical stores, which is a trade-off when comparing to the future of retail. Considering the growth rate of 11 public departmental stores, the online sales declined from 39.3% in 2012 to 18.6% in 2015 and comparing 22 public speciality stores the online sales have dropped from 17.5% in 2012 to 9% in 2016 (Wilson, May 3, 2016).

2.5.4 Development Brought about by E-Commerce

The past 20 years has had a huge impact on information technology (IT) and information and communication technology (ICT) and the world has been always updating and adapting to new innovative technology. The Internet is unarguably the most versatile form of technology, which had enabled people to perform activities that were not thought to be possible. Specifically, the internet gives businesses ability to advertise, generate and perform business functions online thereby having a great reach. The biggest impact of e-commerce has been to increase competition between businesses and provide consumers with benefits by providing lower prices and more options to purchase online. The combination of internet and e-commerce has brought about improved efficiency, superior asset utilization for business and reduced order fulfilment times (Anvaria & Norouzi, 2016).

E-commerce has also facilitated the information sharing between the businesses and suppliers or businesses and customer where information such as the order of purchase, payment are shared for a streamlined flow of a physical process to have better order fulfilment. This integration of technologies with the elements of the supply chain has made businesses to aim at better SCM systems, which focus on better customer services, growth and better market presence among other competitors. Since SCM is demand led and not supply led, these integrated systems help bring about more value adding steps by optimizing all resources, materials, technology and also the information that will benefit both the business and the customer (Zairi & Al-Mashari, 2002). The excessive use of ICT and internet, in general, had given birth to e-services, which also include e-marketing which is the use of digital media like, e-mail, web and wireless media. E-mail is one of the major marketing methods in e-commerce where the business uses e-mails to increase site traffic and sales
support. Although e-mail is not considered trustworthy for customers, it is one of the most effective marketing activities for building brands, better relationships for the businesses with its customers (Martin Hudák, 2017).

Certain advanced technologies such as bar-coding, Electronic Point of Sale (EPOS) and EDI were pioneered in the retail industry for better SCM in the sector. Thus, the retail industry has developed and adapted itself to present day, Quick response (QR), Vendor Managed Inventory (VMI) and efficient customer response (ECR) were revolutionised and integrated to fit this industry. VMI brings together EPOS, EDI and just-in-time (JIT), where the POS sends data through the EDI to a JIT manufacturing hence providing producers with better flexibility and updating the supply chain without really involving the retailer. This has enabled the customers and suppliers to understand the benefits gained by working together and that operating individually is not going to be a win-win solution. SCM and e-commerce go hand in hand and have components and parameters which are both common to both or intersect each other. E-commerce has allowed the more efficient flow of information thereby improving the relationship between supplier and seller and aligned with the sourcing and delivery functions. Hence the partnership will improve its level of integration in SCM, which also give a future window for better e-commerce technologies that will improve the supply chain and the industry that it caters to (Zairi & Al-Mashari, 2002). B2B has also influenced the use of RFID (Radio Frequency Identification) and EPC (Electronics Product code). EPC is also called intelligent network, is the standard for RFID technology, and is expected to improve the efficiency and accuracy of any supply chain. These technologies have reduced the manual handling of information by employees of the company and thereby reflecting on cost-cutting solutions. They initiate a higher level of information sharing and help better synchronization of information between the supply chain members (Wamba, et al., 2008).

2.6 Summary of Literature Review
This section highlights the information and particular definitions, which are used to connect historical research in the areas of LSP’s, Logistics software and E-commerce with present day information (Data). It is important to understand how the parcel carrier industry has changed in the past and how E-commerce has influenced current business methods. The main area of focus is on LSP’s and Logistics Software Providers who are affected by other stakeholders in the supply chain and how the stakeholders are affected by various factors such as new innovative business practices, E-commerce and IT systems. Table-1 summarizes the area of focus with respect to the authors (Historic research on the focus area) and the solutions column emphasizes on the information, which is used to compare and contrast with the data collected for this study.
<table>
<thead>
<tr>
<th>Category</th>
<th>Sub-Category</th>
<th>Author</th>
<th>Focus Area</th>
<th>Solutions/Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Logistics Service Providers</td>
<td>Collaboration in Supply Chain</td>
<td>(Hudnurkar, 2014), (Sandberg, 2007),</td>
<td>Factors affecting collaboration of supply chain</td>
<td>Information sharing between stakeholders in the supply chain, Joint Planning and Orientation</td>
</tr>
<tr>
<td></td>
<td>Parameters in LSP’s</td>
<td>(Forslund, 2012), (Jharkharia &amp; Shankar, 2007),</td>
<td>Selection of LSP</td>
<td>On-Time Delivery, CO2 emissions, Long term relationship, Operational Performance, Financial Performance and Risk Management</td>
</tr>
<tr>
<td>Logistics Software and Technology</td>
<td>Software Systems</td>
<td>(Acar, et al., 2017), (Nettsträter, et al., 2014), (Samaranayake &amp; Toncich, 2007),</td>
<td>ERP, SCO, OPER, Software Systems on Logistics</td>
<td>ERP has positive effect on performance of supply chain, Integration of many isolated systems</td>
</tr>
<tr>
<td></td>
<td>IT and hardware systems</td>
<td>(Grabara, et al., 2014), (Schuldt, 2010), (YIN, et al., 2008)</td>
<td>IT Systems, Autonomous Logistics</td>
<td>Real time tracking, Exchange of information, Cloud computing provides scalable IT platforms</td>
</tr>
<tr>
<td>E-Commerce</td>
<td>Business in E-commerce</td>
<td>(Delfmann, et al., 2002), (Turban, et al., 2015), (Sahine, 2015), (Parys, 2017) (Martin Hudák, 2017), (Wamba, et al., 2008)</td>
<td>Developments because of E-Commerce in Business</td>
<td>Location of customers, Type of product sold, Development Expansion on IT, WMS, TMS systems, Online Marketing, High levels of Information Sharing</td>
</tr>
</tbody>
</table>
3. Methodology

This chapter will outline the procedure to obtain the required output from this project for selection of logistics carriers. A summary of the research methods, data collection, analysis, interviews and limitations are present in this chapter. The process flow for the project will include a literature review on which the study can be based. Knowledge of individual and industry players is used to deepen the research and obtain results (Yin, 2014).

3.1 Suitable Method

There is a difference in cases between America and Europe. Hence, a case study will be a suitable method to understand the two types of cases. Initially, the study begins with basing the research on literature or historical data. Here the data for the European market would be considered known as the company has operations here and this data can be used to gather the information needed for the American market (Yin, 2014).

3.2 Case study

A case study helps understand the complexity of the real or hypothetical problem using the knowledge base available and have applied thinking towards solving the problem (Sydney, 2013).

A case study is a preferred method compared to other methods when the case of the research questions are “how” and “why,” and there is also little control over the events. The data obtained will be from historical data from the parcel carriers/logistics carriers and it is data that cannot be altered to fit certain parameters. The conclusions of the problem from a case study are quite generic as it will be quite hard to finalize specific solutions, thus making a case study research challenging although it is said to be a soft form of research (Yin, 2014).

Case studies are required to be rigorous in the procedure flow and need to have a level of effort that is manageable. Initially, the case study begins with a definition of the case or task followed by a strong theory and literature review (Sydney, 2013). There should be a clear flow in the study after defining the problem. The problem has to be answered using certain analysis tools, which yield solutions. Obtaining the right information is important and there is a clear process to obtain the data to be analyzed. It is also important to align the information with the theories to have a base while writing the report (Sydney, 2014).
3.2.1 Strengths and Weakness of Case Study

A Case study provides in-depth study and research on the topic and always works to answer the research questions. Certain cases cannot be ethically recreated, the study is always in-depth, hence raising new questions and questing existing theories. When in-depth knowledge is gained there is always an opportunity to question the existing facts which in turn leads to new research and advancement of the topic (Class, 1999-2017).

It is difficult to have an unbiased case study as the researcher always favours one side of the case as to base his/her arguments. Classification is difficult, as there is a generalization to the problem’s solution in a case study. There is also an effect of time since case studies take a lot of time to collect data, analyze and provide solutions (Class, 1999-2017).

3.2.2 Extent of the study

As a case study has two sides/cases to analyze, in this study the selection of a parcel carrier is based on five factors or criteria. This research requires analysis with respect to the comparison between the US and the EU markets. The data collected will be for the required criteria and the analysis will provide a solution to the European company to set up operations in the US. The analysis will require interviews with professionals from the industry who are also one of the most important stakeholders of the project. The information provided by them will help shape the solution of the project.

3.3 Data collection

To perform the case study certain data has to be collected and analyzed to narrow down on the problem and provide solutions. Collecting data is a systematic approach to obtaining information to better understand the problem and analyze it.

Data collection can be complex if not approached in an organized fashion. Data collection depends on the skills and values of the case study investigator. Case study researchers need to have sufficient skills to perform the study due to the intensity of research. During the data collection, it is vital that the researcher asks good and relevant questions. Not being direct during an interview might yield useless information. The researcher should also be a good listener to gather as much information as possible. There should be flexibility towards change, most projects might end as per plan but also the researcher should be ready to adapt to change (Yin, 2014).

3.3.1 Selection of Companies

Selecting what type of companies to look at is important. As the European company works with different companies, have partnerships and are quite knowledgeable about the logistics industry, it is important to select carriers looking to set up operations in America. For this study, three carriers are selected from each region, DHL, DB Schenker and Postnord in Europe. The reason for selecting these companies is that DHL is a global giant and has a strong footprint around the globe, DB Schenker is strong in Europe, but compared to DHL has a smaller reach on a global scale, Postnord is a regional operator in Sweden and Denmark (Schwemmer, 2015/2016). Considering the American parcel operators, UPS, FedEx and USPS have been selected for the same reasons as the Europeans carriers. FedEx has a larger global footprint as compared to UPS and USPS. USPS is the regional/National postal service for the
United States of America and UPS has a strong market share in the US and has good reach from the US to Europe and Asia (PIERCE, 2011).

3.3.2 Interviews
For this research, interviews are one of the ideal ways to obtain information, as there are many moving players/stakeholders involved. As a person will answer the required question from the industry, who is also well aware of the researcher’s area of interest. As long as the researcher asks, the right questions, all the information needed to finish the case study can be obtained from interviews with representatives from the industry.

Table 2- Interview Summary

<table>
<thead>
<tr>
<th>Company</th>
<th>Position</th>
<th>location</th>
</tr>
</thead>
<tbody>
<tr>
<td>PostNord</td>
<td>Application Specialist</td>
<td>Borås, Sweden</td>
</tr>
<tr>
<td>DHL</td>
<td>Application Specialist</td>
<td>Borås, Sweden</td>
</tr>
<tr>
<td>DB Schenker</td>
<td>Application Specialist</td>
<td>Borås, Sweden</td>
</tr>
<tr>
<td>FedEx</td>
<td>Application Specialist</td>
<td>Borås, Sweden</td>
</tr>
<tr>
<td>UPS</td>
<td>Application Specialist</td>
<td>Borås, Sweden</td>
</tr>
<tr>
<td>USPS</td>
<td>Application Specialist</td>
<td>Borås, Sweden</td>
</tr>
<tr>
<td>Focal Company</td>
<td>Carrier Relation Manager</td>
<td>Borås, Sweden</td>
</tr>
<tr>
<td>DHL (DHL Express Europe)</td>
<td>IT Project Manager, Customer Integration Management</td>
<td>Bonn, Germany</td>
</tr>
<tr>
<td>FedEx (FedEx Compatible)</td>
<td>Channel Manager</td>
<td>Memphis, USA</td>
</tr>
<tr>
<td>UPS (UPS Ready)</td>
<td>Marketing and Product Manager</td>
<td>United Kingdom, UK</td>
</tr>
<tr>
<td>USPS</td>
<td>Manager, Digital Solutions</td>
<td>Phoenix, USA</td>
</tr>
</tbody>
</table>

3.3.3 Secondary data source
Information from annual reports from companies, news articles, carrier websites/Internet sources, service reports and report from investors are also important as they provide insight into the company’s operations and the financial statistics annually. Hence, information from
these sources is considered secondary data when compared to the information provided by representatives from the focal company and the carriers. Since the reports from the companies are publicly available they are easier to obtain and can be used to compare and validate the information provided by the representatives from the interview.

Table 3- Secondary Data Source

<table>
<thead>
<tr>
<th>Company</th>
<th>Data Source</th>
<th>Type of Source</th>
</tr>
</thead>
</table>
| Focal Company | • European Ecommerce Report 2017  
• European B2C E-commerce Report 2015  
• E-Stats 2015: Measuring the Electronic Economy Economy-Wide Statistics Briefs | Media Reports and webpages   |
| PostNord | • Postnord Annual Report 2013  
• Postnord Annual Report 2014  
• Postnord Annual Report 2015  
• Postnord Annual Report 2016 | Annual Reports                |
| DHL      | • 2015 Annual Report Deutsche Post DHL Group  
• DHL Press Release  
• Business Wire-DHL Announcement  
• DHL“Strategy 2020” Press Release | Annual Reports, Press release, Webpages |
| USPS     | • USPS-FY2016 Annual Report to Congress  
• USPS-FY2017 Annual Report to Congress  
• E-Stats 2015: Measuring the Electronic Economy Economy-Wide Statistics Briefs | Annual Reports, Webpages     |
| FedEx    | • Connect-Combining forces to give your business even more power  
• Creating a customer-centric supply chain for e-commerce  
| UPS      | • 2016 UPS Annual Report  
• 2017 UPS Annual Report | Annual Reports                |

3.3.4 Extent of data collection

The segmentation, tariff, services, specification and network data collected from the companies directly, through the user manual and other publications from the companies. The
data, which is company specific and confidential, will be collected through interviews with representatives from the industry and the information/data provided will be company specific and help with analysis in the later stages. Certain information is collected from literature and open source data (annual report, media articles, press releases) from the internet. Information regarding services for companies is available on their websites. Quantitative data would be volume, revenue, size figures for the companies. Qualitative data will be operation strategies and operation network; this data will provide information regarding the hubs, warehouses and transportation models. Service manuals provide information regarding the tariff structures and the services. Interviews help understand how the operations occur and help validate data.

3.4 Data Analysis
The data obtained is used to analyze the operations and differences between the EU and the US markets. The quantitative data can be analyzed using graphs, calculations, and diagrams that highlight the differences with respect to companies. KPI indicators and other scoring models can help determine the level of importance/weights of the criteria. The data collected can be used to predict the American market for the next few years which could give the European company better insight into the American market.

Factors/Parameters
There are many different parameters when comparing two different regions and it is difficult to comprehend them all. The research study will consider five important aspects related to carriers and their operations. Segmentation, Networks, services, specifications and tariff strategies (Pecheanu, 2017). These factors have been considered, as they will provide the required information to understand the difference between the EU and the American markets.

3.4.1 Segmentation
There are different segments of any industry. The data to decide the different segments of the logistics carrier industry are Revenue (size in terms of finance and profit), Fleet size and the number of tonnage served etc. The segmentation in the carrier industry could be in terms of volume served, revenue generated, fleet size etc. (Pecheanu, 2017). It is easier to obtain data and study the revenue figures compared to volume served. The data of revenue is interesting to study with respect to different factors compared to volumetric data, which would be numbers of volume served (Schwemmer, 2015/2016).

3.4.2 Networks
Logistics carriers have an operational network in which they deliver and perform various services for their customers. Hubs, Distribution Center (DC’s), transfer terminals, areas served etc. Every carrier operation is different as operation strategies vary according to areas served, customers, local laws, availability etc. all carriers would have hubs, distribution centres and certain modes of transport to satisfy customer specifications. For e.g. in the airline industry, the point-to-point model used in Europe might not be an efficient way to operate in the US, so they might use more towards the hub and spoke models (Cornell University, 2011). It would be interesting to study how materials are transported using the different operational
strategies which will provide us with an idea that could help a European company to set up operations in the US.

3.4.3 Services
Carriers provide services to their customers and charge them according to the service. There are different services and tariff models, which companies use to charge their customers. Logistics carrier companies have a number of services offered to customers. They may or may not be similar to their competitors. Certain companies have core competencies in serving specific needs and would do a better job compared to a company, which is not an expert in that particular field. For e.g. UPS is a market leader in the Healthcare industry (UPS, 2017) compared to DHL which provides services across all sectors like freight services, supply chain services, warehousing and distribution services etc. (DHL, 2017). For a company setting up operation in the US, it is interesting to know how different services affect their operations and help them understand the differences between operations with respect to the services provided.

3.4.4 Specifications
Each company has specific operational methods and technologies. Labeling, packaging, communication etc. are different for different companies and they are internal to that particular company in any industry, there are company-specific and people-specific specifications. It would be interesting to look at how these specifications help improve operation and customer satisfaction. These could be internal to how the operation of the product has to be or could be services or communication with the customer for improved material handling. Labels, communications, technologies used are a certain specification that we can look at (Pecheanu, 2017).

3.4.5 Tariff Structure
For all the services provided, companies have certain pricing strategies for their customers and this helps them make a profit on the revenue (Pecheanu, 2017). It is known that not all companies have the same pricing models, because of different service providers and different operational models. For e.g. some companies may charge their customers based on weight, some in terms of a number of items and some in terms of volume. It depends on the product transported, origin and destination pairs, transport modes etc. (Fedex, 2017).

3.5 Validation
It is important to have the study verified to prove the result of the research. An authorized person who is well versed in the field and approve the results generally does validation. The data obtained is for both the US and the European markets. The European company verifies the data by comparing the results with the present or historical data. As the results are going to help the European company, it is better if they understand the results and are able to match/compare it with the American data. The future projections are based on historical data for both European and American markets.
3.5 Research Procedure
Initially, there is a literature review done based on the parameters. The literature will give the theory behind the research and the base for the study. The companies are selected and the data is collected for the companies either by interviews or by open source data. The data is collected from both the EU and the US markets and is later compared based on the EU information. The data is later compared to understand the similarities and differences, which will help the company, set up operations in the US. The analysis will include forecasting the future of American parcel carrier industry and KPIs of criteria based on the European data. The conclusion of the project will include the feasibility of the company to set up operations in the US and provide the company with a wholesome approach to the operations ahead.
4. The Focal Company’s perspective

4.1 The Company- Logistics Software Provider
The company is a logistics software solutions provider based in Sweden having overseas operations in UK, India and the USA. The solutions are provided for e-commerce, transport management, supply chain visibility, reverse logistics and service delivery. The company helps to integrate the partnership between a customer (customer to the European focal company) and a carrier (parcel carrier/Logistics carriers). Clients of the company include Zalando, H&M, Mango etc. and the carrier partners are DHL, DB Schenker, FedEx, UPS, Postnord, USPS, and TNT etc. The customer signs a contract with the carrier for their parcel deliveries, this is updated with the focal company, and they provide solutions for integrating their operation. Services like label creation, order management, consignment assigning etc. are performed for the parcel to reach the end consumer/customer in the chain. As there is no direct information sharing between the carrier-customer and the focal company, the focal company works on the certain level of understanding with both customers and carriers to provide effective
solutions to their customer/carriers. Now the company is entering the American market for which they do not have very strong information to perform integration services for their customers with the carriers. Analysis of factors like services, pricing strategies, operation strategies will help the focal company set-up strong footprint in the US as well and help them enter the American market.

There is a certain etiquette followed by the end customer and the carrier towards the focal company. Documentation and agreements need to be followed to have a sustainable partnership and have the business working. The focal company is neutral towards the carriers or the end customer’s decision as they cannot recommend or help the customer choose a carrier or help choose a customer for the carrier; this breaks the code of their understanding. Once the customer selects the carrier based on services and other specification, they approach the focal company for integration and the company helps to complete the integration based on the accepted factors/parameters between the company-carrier and the company-end customer.

The company has a contract on technical integration with the carriers, where they are required to perform a certification before the carriers can recommend the focal company to the end customers. The focal company always remains neutral at all times and do not have any form of costs or invoices and the same goes for the carrier towards their end customers. The partnership is also depending on the size of the client and for the carrier, they have a partnership with 10-20 large carrier with whom the company has a regular meeting, communication on a central level. It is important for the focal company to know what the carrier has updated and helped them make their services better; the updates could be monthly or yearly with improvements with the carriers on services and specifications.

As the focal company is in-between the end customer and the carrier, most carriers prefer to have this arrangement as there is already an established partnership between the carrier-focal company and the end customer need to sort out agreements with the focal company to have themselves integrated with the carrier. As it takes long duration to have the integration of customers and carrier, it is easy for a middle player like the focal company to have all the credentials of the carrier and later the customers can come for information regarding the carrier and then once after the choice of carriers are listed by the customer the focal company will also help them integrate. The deal between the carrier and end customers are never known by the focal company, the same way the understanding and the details about the partnership between the focal company and carriers will not be disclosed to the customer. They all work in sort of non-disclosure agreement and the focal company or the carrier will try to remain neutral towards each other.

As all the communication is a deal at a central level it is important that the strategies of the carrier will directly affect the operation of the focal company as the focal company need to maintain, support and develop dialogue and other business systems for all the operations to run smooth. Since the carrier may introduce or remove services, it is important for the focal company to keep track of this and record the difference for the development of their integration system tool. There are no pricing strategies handled by the focal company towards
the carrier, the customer and carrier need to come to terms on prices and the focal company will never know what the customer would be paying for the service availed from the carrier.

4.2 PostNord

The focal company and PostNord have an understanding and help integrate PostNord with their customer once a contract between the customer and PostNord is finalized. The focal company has this understanding towards all the companies as discussed in the previous section. PostNord uses trucks primarily to transport in the Nordic region and has an operational reach in Sweden, Denmark, Norway and Finland. PostNord has handled 142 million parcels in the year 2016 and according to a representative from the focal company; PostNord is considered the biggest logistics operator in Sweden.

In 2016, PostNord shipped close to 1 million parcels for the end customers handled by the focal company. PostNord has hubs in major cities and over 6100 distribution points in the Nordic countries. The focal company does not have any particular information regarding the material flow of PostNord, to ship the parcel PostNord follows their own operation models and the focal company does not have any effect on their operations. PostNord provides various services to their customers like dangerous goods, parcel goods, cash on delivery (COD) etc. and perform business-to-business (B-B) or business to customer (B-C) deliveries. Regular consumer parcels are delivered to services points close to their delivery address when the end customer is not available, service points such as ICA or My-Way in Sweden handle sending and receiving of PostNord mail and parcels.

Parcels being shipped to Norway have a different way of approach as Norway is not part of the EU (European Union) and the tax and trade regulations are different. According to the representative\(^1\) of the company and the information the company has towards this operation is that consignments of the parcel will be shipped to Norway rather than individual packets/boxes. For e.g. a consignment containing 100 parcels is packed together with a label from Sweden to Norway, all the packages/parcels inside the consignment will have local Norwegian labels, the package is opened only when in Norway, and then the parcels are sorted for local distribution in Norway.

All PostNord order of the focal companies’ customer flow through the company and the information is shared for the order processing which requires labels and communication to be set up for the parcel to be shipped. PostNord uses RFID technology to track certain consignments and to have information regarding the flow of material. PostNord current focus is to adapt to the current trend of e-commerce and has recently launched a mobile app, which is focused to improve customer experience in terms of online shopping. The app uses parcel ID for real-time tracking and virtual label generation to pick up the parcel at the service points. PostNord has realized the decrease in physical mail volumes and has started to focuses on e-commerce. Postnord did not have a strong return chain as it was not required before the age of e-commerce, which provides the end consumer with different option in terms of shipping which has an obvious impact on the logistics services provided by the company, hence

\(^1\) The representative works for the Focal Company and handles PostNord as his client.
PostNord is focusing on having a strong return supply chain in order to have the best service in the Nordic region.

4.3 DHL
As PostNord the focal company and DHL do not have a formal contract or any partnership with each other, they work together on professional understanding. According to a representative\(^2\) from the focal company, DHL is one of the biggest global logistics and supply chain solutions operator and is currently quite large in Sweden and Nordics. DHL provides almost all the services in the logistics and supply chain industry being market leaders they have set certain quality in operation. Being part of Deutsche post and headquartered in Bonn, DHL has strong European presence and provides services to over 200 countries.

Over 400-500 parcels are shipped by DHL for the customers of the focal company every day. DHL has defined the parcel to be any package/mail that weighs less than 75 kilograms and anything shipped with weight more than that is considered as freight and is a pushed over to a different type of service. The focal company does not have information regarding the operations of DHL; the company only helps the customer to be integrated with DHL once the contract between DHL and the customer is fixed. The focal company will never know who the customer’s customer is and how the customer uses DHL to ship to the end customer. DHL then uses their internal operations and network flow in order to deliver the goods.

Currently, DHL also faces the challenges to adapt to increase in E-commerce parcel volumes. DHL previously had labels that were valid for 7 days, these labels are not being very useful for present generation e-commerce logistics as the customer of DHL have different services and options to their end customer which given the end consumer to return in 15 or 30 days, hence DHL is focusing on trying to adapt return supply chain and also provide labels that would be valid according to the customer’s choice. Previously normal mail services and parcel services were called DHL global mail, but now to make customers feel better in terms of services they have rebranded their global mail services as e-commerce mail.

4.4 USPS (United States Postal Service)
The focal company and USPS work with each other on a partnership/Professional understanding and the company is certified by USPS to act as a service operator for Integrating USPS with its customers. The certification enables the focal company to provide services to its customers and certify its customers for USPS. As with other carriers, the focal company has to be unbiased towards its customer when they would have to choose a carrier. Once the customer and USPS have made a contract, the focal company helps the customer integrate with USPS. USPS has the most penetration in the US and is the regional/governmental organization in the US handling the local post and parcel services. Compared to other operators like FedEx and UPS, USPS concentrates on local supply chain and operation as compared to international parcel handling, USPS is also considerably cheap than its American counterparts who focus more on delivery quality compared to local reach.

\(^2\) The representative works for the Focal company and handles DHL as his client
USPS has the potential to reach every Zip code in the US but larger international players like FedEx cannot service to every zip code as it increases their operational costs.

The customer of USPS are the locals and USPS needs to accept mail from anyone and do not differentiate their customers. USPS offers services in the domestic market and also to APO and FPO, the military address of America overseas, the address is considered as a local post and the charges are for a local post and not expensive as international services to make it easier for family and friends to ship. This type of service is not provided by any other carrier and is unique towards USPS. USPS provides a cheaper price for a pre-sorted parcel, the customers pre-sort before handing it over to USPS and get a discount on the service price that is also unique compared to other players in the industry. The packages are dropped off or collected in a post office where it is exclusive to USPS and there are no other players sharing the facility. As they have better reach they use Hub and spoke model when they ship parcels and hence could take longer lead times.

FedEx and UPS use USPS for their last mile delivery, as discussed before FedEx and UPS concentrate on the quality of service and not geographical reach in the US. It would cost more for the private operators to reach certain zip codes to which USPS has easy reach. The major journey of the chain is operated by FedEx and UPS and later handed over to USPS for the last stretch to delivery to the end customer. USPS is slow in updating to newer technologies, as there are customers in the US who still use Fax numbers and Pager numbers. To have a transition to modern technology will cost them a lot and might lose customers.

4.5 FedEx

Similar to USPS, the focal company has to undergo a certification with FedEx for the partnership to be established with the carrier. The focal company needs to pass a global FedEx program in order to receive the certification. The process includes developing the software towards FedEx specifications as provided in the development guide, then undergoes the real-time test and is finally certified. This certification is one time and is easier for integrating with customers, as they need not do a certification all over again; the process takes between 6 months to a year depending on various factors (types of services, end customers, a distance of shipping etc.) in the partnership between the customer and the carrier. FedEx is considered the largest operator in the US and has UPS as their head-on competitors for the local and the international market.

According to a representative from the focal company, FedEx is building their presence and have a decent ground transport presence in Europe. In 2016, they acquired TNT a Netherlands based international courier shipping company. This acquisition propelled them to have a stronger presence in Europe than before and expand their ground network that is vital for operation in Europe. In Europe, they have the most market presence in the UK and after the acquisition of TNT are slowly moving into central Europe. Having one-day deliveries to 60 international destinations from the US and to almost every city in the US and Canada they focus more on express delivery and quality of delivery. To achieve this level of operation their services are high compared to logistic carriers in the US or around the world. Having over 600

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3 The representative works for the Focal company and handles FedEx as his client
aircraft in its fleet that provides them with the speed to delivery, having shorter lead times due to excessive use of air transport put them as one of the leaders in express delivery. FedEx was built on the core competency of express delivery and over the year, they have grown in that particular aspect.

They do not have to pay taxes between states in the US as it is domestic shipping, this also applies to Europe due to the EU law the parcels are not taxed between countries, the trade is considered domestic. FedEx uses USPS in the US for last mile delivery, as they do not have the resources to reach the end customer in the chain. All packages are handled in a FedEx store/FedEx exclusive service point, hence making it hard for the company to service to all Zip codes in the US. FedEx has faced some problems handing over the parcel to USPS or there have been certain practical issues regarding the ownership for e.g. a person uses FedEx to ship from one city to another and FedEx hands the parcel over to USPS for the last mile delivery and if the parcel is lost or misplaced, it is hard to point out who is at fault. These issues have still not be sorted and FedEx is trying to improve on such area to provide customers with the best service possible.

FedEx provides two services to the customer one is FSMS (FedEx Ship Management Service) and the other is web-based services. FSMS is used when the customer is quite large and will avail FedEx services more often; hence, FedEx installs a server at the customer’s site and uses that for services like label generation, consignment generation etc. The web-based services are online and real-time and FedEx is currently promoting its customers to use this, as it is less complicated than installing and maintaining a server. This also helps its customer’s and FedEx to face the impact of e-commerce on logistics better.

4.6 UPS (United Parcel Service)

The focal company needs to undergo a certification with UPS to be a service provider. This certification helps UPS as a parcel carrier connects with their customers. The focal company has a software, which needs to be developed to UPS standards to their customers to use this module in their system and have a complete cooperated integration. UPS has FedEx and DHL as their competitors in the US and have large operations in the US compared to Europe although they have a European hub in Köln, Germany. Their operations were mainly built on ground transport but with an increase in parcel movements, they have switched to air transport as well. Currently, UPS is ranked second in the US in terms of head-on competition with FedEx.

The core competency of UPS is also express delivery and delivery quality, hence as a company UPS do not hide the fact that its service is expensive compared to its competitors but guarantee and assure a better level of service and delivery quality. UPS is growing in Europe with sizeable investments in the UK and Germany, with a concentration in central and southern Europe. UPS insists on having distribution points and avoid collaborating with other service centres to have exclusivity to the services they provide to their customer as stated by a representative from the focal company. UPS provides two type of service to their customer one that is web-based services, which are real-time in making an order and having the labels

4 The representative works for the Focal company and handles UPS as his client
printed, and other which is a file integration service, which prints many labels and finally sorts into a consignment later at end of the day. In terms of technology, UPS is a bit behind compared to its main rivals in the market and are speeding up development to be in the league of the best when it comes to parcel carriers.

In the US, UPS collaborates with USPS (United States postal services) for their last mile delivery, as it is expensive for UPS to operate to certain Zip codes in the US and as compared to USPS who delivers to almost every house every day and have better market penetration. This is same as what FedEx also does for their last mile delivery. Depending on the level of service, the customer has opted the parcel or package is handed over to USPS if its premium service with the value of the product being high UPS operates the last mile delivery as the customer when availing the service covers the extra operating cost. The future strategy includes UPS trying to concentrate opening more service points in the US and in Europe as well, this gives them the market penetration and access to service better. The impact of E-commerce also changed the way the first and last mile being operated and these distribution service centres will provide them with the edge to help the booming e-commerce sector.
5. Parcel Carrier perspective

5.1 Impact of E-commerce on parcel carriers in Europe and the US

In 2014 there are approximately 818 million people living in Europe out of which 564 million internet users are there and approximately 331 million e-shoppers. This e-commerce market has led to 2475 directly or indirect jobs and an estimate of 4 billion parcels was shipped in 2014, generating a total revenue of 423.8 billion Euro out of which EU-28 (The European Union with 28 countries) has a revenue of 368.7 billion (E-commerce foundation, 2015). European e-commerce has a total revenue of 530 billion euros, which is a 15% increase from the previous year and is forecasted to reach around 602 billion euros for the B2C European market in 2017, which is a growth rate of 14% (E-commerce Europe, 2017). Western countries top the list of largest e-commerce markets and the UK leading the way with 33% of total sales in Europe (E-commerce Europe, 2017).

Europe is one of the most versatile and ever-evolving e-commerce markets. There are an estimated 715000 online businesses in Europe and all these companies face several challenges to sell goods or their services. One of the major challenges this business face is to abide by the countries tax rules, laws and customs regulations which translates to more difficult cross-border commerce. One of the largest e-commerce players in the Retail industry and the industry has been having constant changes in the market and the most influential driver is the shoppers’ convenience expectation. This is said to be achieved by creating mobile internet and communication that leads to a seamless cross-channel experience. This leads to hybrid shopping format when delivery to shoppers through mobile experience looks encouraging (E-commerce foundation, 2015).

The current European commission has looked into these obstacles and is looking to prepare for the digital single market by 2019. Some of the key trends in the European e-commerce market include mobile-first strategy. In 2014, online merchants enabled features to use mobile devices to shop and pay online which has reached higher success rates now. The application of big data evolved in 2014 and is being used in data analytics and visualisation for the e-retailers and help them understand online payments better. Markets leaders have used big data to build better conversion rate optimization for their customers’ profile and thus is now used in cross-border payments, which are very complex and difficult to manage. Since cross-border payments bring more money and increase the risk of online fraud, merchants are combating these issues and have taken an impact to minimize the impact and have moved from looking at this as a cost and avoiding cross-border business (E-commerce foundation, 2015).

Now, most e-commerce stores have cross-border advertisements, which are driving the customer to shop without leaving their homes. E-retailers have started to use English on their webpage and have collaborated with local companies for a robust European transportation network. E-Retailers have also looked at the possibility to provide return services to the shopper enabling better flexibility and better shopping experience. Logistics services have evolved today to accommodate the e-market and seller prefer to sell through their online stores as compared to the centralised warehouses that were used before. The Europeans network has developed allowing traders to ship cross borders as delivery of goods is one of
the basic needs in e-commerce, the European network has expanded and has ensured safe and quick delivery of goods. The e-commerce trend has allowed logistics service providers to also offer warehouse storage with all the conditions required to keep the product safe and the companies can deliver the product when it is time and the e-retailer has received the order from an online shopper (International Forwarding Association, 2016).

America has always been the centre of attraction for commerce and high quality of economic activity. They have set new standards in commerce and updated new models and methods for innovative business. The US is said to have “the most wired population on earth” and is said to have initiated e-commerce (Sean T. McGann, 2002). In 2015, American manufacturers shipped 3506.9 billion$ shipments which are 63.2% of total manufacturing shipments. E-commerce revenues for the service industry and retail industry are 549.7 billion $ and 340.4 billion $ respectively in 2015. Which are an increase of 7.4% for the service industry and an increase of 14% for the retail industry from the year 2014, where the total revenue for the service and retail industry was 511.8 Billion $ and 298.7 billion $ (United States Census Bureau, 2017).

In 2016 online sales of e-retail in the US added up to 360.3 Billion$ and is forecasted to cross 603.4 billion $ and generate a total revenue of 121 billion$ in 2021. Amazon is the leading online retailer in the US and in 2016 generated 46.66Billion $ of the total 360 billion that year. Other major retailers in America include eBay, Wal-Mart, Apple and Target. 77% of America’s population has the facilities to use internet out of which 67% had shopped online and 42% of which started to at least purchase once every month online in 2016 (Statista, 2017). With 136 million users in 2016, e-commerce has had a growing trend in the US and has led to a high number of mobile service users and that in 2020 there would be an estimate of over 168.7 Million users. In 2016, one of the biggest contributors to the online sales is the mobile sales and it is accounted for 29% of total the US digital commerce spending. This has also pushed the population of mobile users to use non-traditional payment methods such as android pay, apple pay or in general digital wallets (Statista, 2017).

5.2 PostNord
PostNord being the leader in the Nordic region, having a strategy concentration on long-term value for owners and stakeholders, and making sure there is forethought for universal postal services. As there are constant changes in the postal market, it is difficult for PostNord to have a profitable operation business. In the meantime, as there are changes to the logistics industry and there is a visible growth in the industry, it gives the advantage for regional operators like PostNord to also expand thus promoting PostNord to be leading operator in the Nordic’s. The mission of PostNord is “connects people and businesses reliably, efficiently and on time”. The mission with the vision and values of the company lead to its strategy which aims at transposing the group in line with the market variations and progress in the Nordic market (PostNord, 2013).

Posten AB and post-Danmark A/S merged in 2009 to become the leading Nordic logistics operator and to have the best postal service in Sweden and Denmark. Having focused on the
growth of logistics and further development with e-commerce service logistics. PostNord will be an appealing place to invest regardless of the form of ownership, as PostNord will improve organization and competence within the company; it will also have a strong focus on sustainability and robust delivery structure (PostNord, 2013).

5.2.1 Strategies and Priorities
PostNord is assembling structural changes in the mail to accommodate the changes to the industry and the falling demand for physical mail services. Actions include streamlining production and further reduce cost base, increase the sharing of variable costs, optimize production methods and reducing CO₂ emissions and carbon footprint. PostNord is improving the logistics business by widening the services with the company and extending its market presence to win better market shares in the industry. The business will tend to grow and will be profitable through the possibilities of strategic partnerships and acquisitions.

PostNord will emerge as the leading E-commerce partner because of their sole regional organization. The current focus is on developing solutions that are can be offered both to the customer and to the receiver. As there is, an increase in demand for service logistics like home deliveries PostNord continues to have better offers in this area (PostNord, 2013). Improving integration with the group’s production operations provides better synergy in the organization thereby reducing expenses and increase the share of variable costs.

5.2.2 Financial Strategy
Financial targets of PostNord are set by its owners and include capital structure, returns, and dividends. Certain key financial ratios and targets regulate it, which includes cash flows, internal funds, and liquidity. A new model was adopted by PostNord to have improved efficiency, better finance allocations and value creation. A payment readiness of at least 1,5billion SEK was needed to be kept as provision and as of 31 December 2013, PostNord was financially prepared for 3973Million SEK. When the group strategy is implemented, there will be a distribution of 40% of net profit to PostNord’s owners. It is forecasted that 3-5% of group revenues would be investments in the year 2014-2016 as approximately half the investments in these years would be auxiliary investments in machinery and vehicles and the other half would comprise of new mail production organizations, small portions of total investments will be new IT platforms. Financing is tenable through updates in the cash flows used for operations and maintenance of an effective capital structure that uses finance from external sources (PostNord, 2013).

The projection for 2014 shoes there is positive effects on distribution volumes in mail and logistics because of the e-commerce boom. PostNord predicts 4-5% drop in mail volumes in Sweden and 9-11% in Denmark due to the effect of digital devices and advancement in mobility. The new strategy will involve the company reorganizing towards the accommodation of E-commerce and this way help them secure profitability with mail & communications through cost reductions and effective use of capital (PostNord, 2014).

PostNord in 2014 started with better integration in the organization that provides them with the edge to complete their end-to-end mail and logistics solutions. With E-commerce growing and having a sale of about 140Billion SEK in the Nordic region has led to better investments
in this year with a new facility in Rosersberg outside Stockholm, which is modern and also environmentally efficient terminal in the world. 2014 saw an increase of 3% with B2B related businesses and 15% for B2C related items (PostNord, 2014).

Due to the impact of digitalization, the mail business has been decreasing all over the world and in Sweden and Denmark, it reduced by 4% and 12% from a total drop of 5%. Between 2000 and 2014, 40% of physical mail distribution volume has been moved to digital forms hence having an impact on mail logistics. This has pushed PostNord to provide customers with end-to-end solutions for both physical and digital channels. Having started as a postal company, this has given PostNord the tactical advantage in Logistics and help customers to have deliveries as promised. Having the experience and knowledge of the Nordic markets, this gives PostNord the reach to perform better communications and logistics assignments. The 3-5 year strategy set by the owners projects a change in the financial targets of PostNord. The targets include the ROCE (Return on Capital Employed) of 10.5% and a net debt ratio of 10-50%, but in 2014, the numbers were 3.1% and 46% for ROCE and net debt ratio respectively. PostNord also has a target of reducing the carbon emissions by 40% by the year 2020 and was stated in the year 2009 and as of 2014, PostNord has reduced carbon emissions to 16.6% by adapting to logistics chains that are more efficient, investing in fuel-efficient vehicles and electric vehicles (PostNord, 2014).

The group adopted a strategy in 2011, which is going to be applied until 2015. However, PostNord upgraded their strategy in 2014 that promises to make PostNord the leading supplier of logistics and communication in the Nordic region. The new organization is set up with developed strategy in 2014 and the strategy includes build, reposition and advance stages, this strategy is based on certain corporate priorities. The build phase requires PostNord to adapt to new solutions to make the strategy more feasible and effective, PostNord will reduce and adapt to cost base, implement an integrated production model and improve its IT operation by upgrading to more secure and stable systems. The reposition helps PostNord to iterate its build phase in order to gain the leading position in e-commerce player in the Nordic’s. PostNord will also secure profitable growth in prioritized logistic segments; offer end-to-end Mail and communication services to its customers now and for the future. Finally to adopt a business model in the service logistics sector for efficient logistics. The advanced stage is to sustain the advancement of the strategy and allows PostNord to have harmonized Nordic product portfolio which is more customer oriented. The advance phase will also allow PostNord to have a goal-oriented performance culture (PostNord, 2016).

This new strategy was established in 2014 and will be valid until 2020. In 2014 the organization and developed strategy were established and in 2015 the build, reposition and advance stages are initiated which moves into 2016 and in 2017, for various PostNord’s stakeholder’s new value is created and to improve the financial results of the group. All these changes will help PostNord to emerge as the leading Nordic supplier of logistics and communication services (PostNord, 2016).
### Table 4-Data Summary PostNord

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5.2.3 E-Commerce

One of the group strategies has e-commerce as one of the priorities and this will be most important areas of the company for the future. The unique structure of PostNord helps connect with e-retailers as PostNord has better reach in the Nordic region. The strategy established in 2014 make sure that PostNord will reinforce as the leading e-commerce player in the Nordics. Centered on customers’ requirements PostNord offers customer services based on expertise in retail trade and Omnichannel logistics. Having high numbers of distribution points in the Nordics helps PostNord’s customers to have better reach and having collaborating customers can secure better e-commerce growth and profitability by combining logistics and communication services provided by PostNord’s for its customers. PostNord offers flexible distribution network, which helps customers to shop on their own terms online (e-commerce), hence, helping PostNord’s clients to give more options towards online shopping for their customers (PostNord, 2014).

PostNord’s long-term strategy started with the merge of Posten AB and Post Danmark A/S in 2009, aiming that PostNord would become the market leader in the Nordics. PostNord understood the decrease in physical mail distributions and had to comprehend the transitions of lower mail volumes and have better infrastructure and organization to serve the e-commerce growth. The strategy includes a 10-priority area where PostNord will reposition and accommodate itself in order to emerge as the leading Nordic Logistics and Communications Company.

There were certain milestones reached in 2015, which include cost-cutting programs, which are implemented and administered these solutions. Upgrade in IT systems, which provide a better experience for PostNord’s customers and group-wide administrations for service logistics was initiated leading to the acquisition of customers of certain Danish online food buyers. New implementation plans developed for 2016, which are more customer-centric, and has more harmonized strategic objectives. Implementations of team-based functions and a diverse group were considered (PostNord, 2014).
Integrated production

PostNord developed a new production model that allows maximum flexibility in the distribution chain for both customers and the company itself. In order to accommodate various changes in the logistical operation, PostNord has integrated the mail and logistics operations on the distribution level. This strategy was adopted in 2014 with a vision to be completed by 2020; the integration of operations will consider both Danish and Swedish markets. The major changes would be materialistic and some changes in the distribution chain, updated IT systems for increased efficiency. New distributions hubs are to be set up in an urban area to synchronize processing of all kinds of product categories harmoniously. For mail carriers to operate close to the recipients the depots are set up closer to the end of the chain and these depots will handle only loading of material and will not have any sorting. Improved transportation, which allows the vehicles to delivery, and collects empty parcels at the same time from both the partner outlets and from customers. The standard process for purchasing, operating and retiring of vehicles will concentrate more on creating better cost benefits and economies of scale. In operation, there are different types of machinery and equipment to be handled and this leads to personnel being trained in different machines and equipment’s which is added cost towards the overall operation, hence PostNord has adopted and streamlined standardization towards all machinery. This will help simplify handling of goods across platforms and borders (PostNord, 2016).
5.3 DHL

Logistics industry, on the whole, competes over size, reach, scalable products and services over a long time and in real time. The company/enterprise, which is considered prime in the industry, should have expanded in all those directions and should be sustainable with future growth potential. The demand for products from the pharmaceutical industry has doubled in the last 10 years and has affected the carrier to have regulatory requirements and modes of transport. (Deutsche Post DHL Group, 2016).

The parcel services are split between PEP (Post-e-commerce-Parcel) and Express and PEP deal with the domestic market in Europe as compared to DHL Express which focuses more on time defined international services. The core of express shipping in that customer depends on time-specific transport and delivery. The express shipping concentrates on global shipping as the domestic market is handled by PEP and use ground transportation as primary compared to air transport which is used between continent hubs of DHL. Domestic shipping is done through the DP (Deutsche post) in Europe and has better market penetration in Germany and Europe compared to other competitors but DHL as a brand compete on a global platform with the likes of FedEx, UPS etc.

A representative\(^5\) from DHL stated that DHL does not have a good market share compared to UPS and FedEx in the US. They still try to push their network to handle packages from Europe and other countries into America. Consider the countries as a playing field and DHL being from Germany knew the perks and disadvantages to working, service and growth in Europe compared to establishing itself in the US, then understand the market before expanding. FedEx and UPS being locals from America knew the country in terms of infrastructure, laws, market economics compared to DHL. It’s vice-versa for the American companies to compete in Europe since DHL has a market advantage.

DHL works with different companies in order for a win-win situation and does not have a destructive model which is going to lead a disadvantage to their partner in the transaction. DHL was looking at TNT when FedEx showed interest as well but TNT was good with ground transport and DHL already had the infrastructure to handle in Europe and FedEx used TNT to gain the extra need for ground transports in Europe. The representative\(^6\) stated that DHL already has a good name for B2B transportation and they had to focus more on B2C with the impact of e-commerce and the flexibility the end customer has to buy from the business directly.

5.3.1 DHL Operations

DHL operates from three major hubs in Cincinnati US, Leipzig Germany and Hong Kong. DHL uses the Cincinnati hub to cater to the American market and has pumped capital of 150 million$ (USD). For all domestic transport in Europe, ground transport is primary and they do not fly lower service level parcels inside the continent. DHL has approximately 28000 sales outlets in Germany and handle close to 4.3 million parcels a year in Germany and handle 60 million letters per day (Working day/Business days). 60% to 70% of vehicles used in Germany are eco-friendly for delivery the letters. They have flights that operate between these hubs

\(^{5}\) The representative works for DHL in Bonn, Germany
and are sorted close to the airport before transporting locally. 98% of parcels are sorted and arranged electronically and the facility workers do the rest 2% manually. With a parcel fails the automatic sorting it goes into an area called hospital area and it is in-scanned by workers manually with handheld scanners and these scanners correct the code and are sent in again for automatic sorting. Certain services are monitored and controlled by DHL globally, hot cash and drugs are not transported by DHL and to transport batteries/ used batteries, the shipped needs to test them and prove they are environmentally friendly in order to ship. The representative also added that DHL is quite extreme when it comes to environmental impact and are working towards reducing CO$_2$ Emissions and moving towards green transportation. DHL operates in 220 countries with 90000 Vehicles of which over 25000 vehicles are electric or environmentally friendly. In 2015 DHL had a transition year to adapt to series of changes for the betterment of the company, good wage agreement was achieved and expansion of the parcel business into new countries in Europe were made, which aligns the company closer to the strategy 2020 agenda.

### Table 5- Data Summary DHL

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<tr>
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<th></th>
<th></th>
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<tbody>
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<td>2965</td>
<td>2411</td>
<td>3491</td>
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<tr>
<td>Net Profit (In Million Euros €)</td>
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<td>2091</td>
<td>2071</td>
<td>1540</td>
<td>2639</td>
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<td>Return on sales</td>
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<td>4.10%</td>
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<td>488824</td>
<td>497745</td>
<td>508036</td>
</tr>
</tbody>
</table>

DHL has predicted to have 3% increase in the operating income because of the PEP, and all the division of DHL are on average going to constitute 10% of EBIT (Earning before Interests and Taxes) out of the total with an average increase of EBIT 8% annual for the whole group (DHL, 2015).

### 5.3.2 Impact of E-commerce on DHL

DHL has seen the increase in B2C parcel volumes and is trying to adapt and accommodate this increase. DHL looks at a potential customer when the customer that needs DHL’s expertise has a proposition, which is effective to both DHL, and the customer DHL makes deals which such clients. In certain cases, the sales team from DHL has analyzed the need for better services for a company and approached the customers who would be potential business clients. DHL targets start-up and small business as they struggle to have their business running when they need to deal with e-commerce giants like Amazon and Zalando in Germany the representative added. DHL has a plug and play system that would be linked to the customer, DHL automatically receives information regarding the parcel, and the business can choose to deliver the parcel to DHL or can fix pick-up times for DHL. DHL also offers better deals on return labels as e-commerce had enables shoppers to return the package and hence when the business ships the package to the end customer, the package already contains a return slip, which the end consumer can use to return in case he is not satisfied with the product.
Earlier DHL has had a problem to deal with return labels since the labels were valid only for 7 days now they have come up with solutions for the label to be valid for longer and the end customer can ship back to business when needed.

Once the customer receives an order it runs through DHL systems and undergoes a real-time capacity check and channel capacity check, which allows the business to register their package into DHL system and plot potential transportation options and routes, which makes the DHL operations more efficient. DHL is also including Saturday delivery services in Germany so it gives more flexibility to the business as well as the end customer to send or receive the package. DHL is also opening shipping centres and access points to have better market penetration and give flexibility to the customers. Collaborating with local stores or other convenience store is what DHL is looking into as it gives end consumers better access to send and receive packages. The representative mentioned that it costs 30% to 34% more to gain a new customer than to maintain an existing customer, hence focusing on providing better solutions to the existing customers now, which could build strong bonds in the trade.

With the boom in the E-Commerce industry DHL has predicted a 2.32% increase in GDP from the year 2015 for the year 2020, The GDP in 2015 was 16,024.11 billion$. The forecasts for the year 2020 are that the e-commerce market will increase to 503,623.4 Million $ from 325,062.3 Million $ in 2015. (Wire, 2016). This prediction also leads DHL to invest 137 million$ in the US e-Commerce infrastructure and services to fulfil its capabilities in North America. 25% of consumers originate from the US and an estimated one billion people will shop online and across borders by 2020. Hence, these investments will help DHL expand the lead in the e-commerce industry to operate cross-border logistics. DHL e-commerce has established regional centres in Columbus, Ohio and Los Angeles in 2015 and will establish one more centre in New Jersey in 2017 (Wire, 2016).

5.3.3 DHL 2020 Strategy

In 2009, “Strategy 2015” was set up by the group to bring out the full potential of the organization, which led to significant growth in revenue and increase in operating profit. In 2014, the group has established a new plan/strategy after the success of the strategy 2015 called “Strategy 2020”. The strategy aims at building on what the organization has achieved so far. The strategy’s line of “focus, connect and grow” tells more about what the organization has planned to execute in the coming years. The aspiration of the strategy is to come out of the top as the leading group in the logistics industry by 2020 and set a new definition for logistics.

The group forecast a growth of 8% per year for its earning based on the 2013 EBIT (earnings before interest and tax) of €2.86 billion. The groups major contributor is DHL division which is expected to grow approximately 10% per year over the 5 year period between 2015 and 2020, in addition, the groups parcel and mail business are improving due to the impact of e-commerce and the operating profit is predicted to grow 3% every year (DHL Germany, 2014)
5.4 USPS
According to a representative\(^6\) from USPS, the company is like any other postal service but have a slightly different mandate than other carriers are they concentrate on “universal coverage” and must accept mail and deliver mail from any type of customer. USPS has three main mail segments commercial first-class mailers, commercial direct marketers and personal mailers. E-commerce is part of the commercial fulfilment service as it involves B2C in most cases and now due to return flows has C2B as well. USPS seeks partners to fit certain specific needs of operation for e.g. air transportation, being a government group they need to follow strict regimes in order to have streamlined operations. USPS uses a hub and spoke model for its operations but letter and parcels do not have the same time of operation as there is a bit of automation involved in sorting letters. The company offers a discount to its customer who pre-sort their mail called “work share”, in which the sorting is done before USPS can ship the letters. An oversimplified network of the mail flow will include the mail received from the original sender is transferred to the origin hub, then is transported to the destination hub and then to the destination delivery unit then to the final receiver.

Currently, USPS allows self-service at post offices, other web platforms, and mobile applications for the customers to choose from. The latest addition to their technologies is informed delivery, which provides consumers with a digital preview of the mail that is going to be delivered to them. The company has two product strategies, market dominant and competitive. In the area where USPS plays a monopoly on shipping, the company uses market dominant strategies and the pricing is capped by inflation growth. In competitive pricing the products are priced in accordance with their competition in spite of prices of other private carriers may be regulated by the federal or state governments, this is to ensure there is a fair playing field and that to bring about a win-win situation.

<table>
<thead>
<tr>
<th>Table 6-Data Summary USPS</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
</tr>
<tr>
<td>Revenue (in Million $)</td>
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<tr>
<td>Operating Expense (in Million $)</td>
</tr>
<tr>
<td>Net Loss (in Million $)</td>
</tr>
<tr>
<td>Debt (in Million $)</td>
</tr>
<tr>
<td>Number of Employees</td>
</tr>
<tr>
<td>Mail volume</td>
</tr>
<tr>
<td>Delivery points</td>
</tr>
</tbody>
</table>

5.4.1 The impact of e-commerce on USPS
USPS is the largest handler of e-commerce packages as compared to the three major parcel operators in the US. In 2015, USPS had 56.5% market share as compared to its competitors in the US like FedEx and UPS, which had a market share of 12% and 29% respectively. Most SMB\(^7\) (Small and medium business) come from major internet retailers like Amazon, Etsy and E-bay

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\(^6\) The representative works for USPS in Arizona, USA

\(^7\) SMB: Small and medium business
and are the largest carrier for Amazon (Brein, 2016). The e-commerce has had a huge impact on the company as the representative explained that, it has brought about an awareness for its customers to know more information, which leads to many changes in the company where package visibility, communications and additional delivery days/hours are affected. There is also an obvious decrease in the physical mail volumes due to the dawn of the email technology the representative added. The company’s future focus include e-commerce, ship-from-store and bridging the physical-digital divide (combining the physical mail and digital impressions).

The representative\(^7\) from USPS stated the biggest change that e-commerce has brought about in the parcel sector of USPS is parcel visibility and that consumers and customers what to know where their package is, all the time, everything. The postal department is focused to improve customer experience but implementing the latest technologies to provide real-time information as the package is undergoing transit. The technology USPS is investing is “Informed Visibility” which will provide inclusive near real-time data-driven service performance measure and diagnosis, it will also be used to have better mail inventory and predictive workloads and end-to-end tracking and update for all mail handled. This operational intelligence will improve the efficiency on how USPS operates and provide the customer with a better track of their packages (USPS, 2016).

USPS first tested a service called “informed delivery” in northern Virginia in 2014, was upscaled to operate in New York and Connecticut in 2015, had planned to launch nationwide in 2017, and now is available to the end consumers. The service provides greyscale images of the mail the consumer is going to receive and the consumer can access this by signing up to USPS’s website and enable notification of the delivery (USPS, 2016). This also gives more flexibility to the consumer as it allows them to give USPS with delivery instructions for e.g. delivery the product to the neighbour or leave it close to the barn etc. Consumers are also allowed to re-route it to other post office or to their work when they are not available at their home. According to a survey from January 2017, 91% of consumers are satisfied with the service and 90% of them claimed that they would recommend it to their friends and family (USPS, 2017).

5.5 FedEx
FedEx is one of the leading carrier operators in the US and is showing better presence in Europe after taking over TNT (Netherlands). For any company to be partners with FedEx or use FedEx systems they need to undergo a global certification program where the systems are tested and developed with FedEx features and specifications. The service provider like the focal company needs to provide FedEx with a test case and that is tested in a small case and then is released to its customers. FedEx employs different service provider companies which aid their expansion in EMEA region since they are already big in the USA the concentrate more to expand in Europe, Middle East, Indian sub-continent areas. The representative\(^8\) also stated that in Europe they were ranked fourth before the acquisition of TNT, which gave them a lead and moved them to second. This acquisition has given FedEx the extra ground transport lead

\(^7\) The representative works for USPS in Arizona, USA
\(^8\) The representative works for FedEx in Tennessee, USA
that they require to operate in Europe, this move was carried out as TNT was not performing well in spite of having good market penetration so FedEx saw the potential and acquired them. TNT was able to use FedEx as their courier provider that FedEx would pick up and delivery TNT shipments this gave TNT and its customers to use FedEx ship manager system, which is more robust than what TNT, used to use. The business deal also allowed TNT to use the FedEx customer service and attain new sales (FedEx US, 1995-2017).

FedEx provides web-based and FedEx ship manager services to its customers, the web-based services are more real-time and for smaller business which allows them to print labels when the orders come in and do not require the business to hold a server. FedEx ship manager services are used when the customer hosts FedEx servers, this could be personalised according to the business, and that the business can print labels and generate consignments according to their flexibility and is local compared to web-services, which are more real time. With the world, moving towards digital solutions FedEx has also come up with cloud-based services and a mobile application, which allows the end customer to receive updates regarding the package they are going to the receiver and also plan according and gives them the flexibility to pick-up the package either at their address or at specific FedEx service points.

<table>
<thead>
<tr>
<th>Table 7-Data Summary FedEx</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue (In Million $)</td>
</tr>
<tr>
<td>Operating Income(In Million $)</td>
</tr>
<tr>
<td>Operating Margin</td>
</tr>
<tr>
<td>Net Income(In Million $)</td>
</tr>
<tr>
<td>total assets(In Million $)</td>
</tr>
</tbody>
</table>

5.5.1 The impact of e-commerce on FedEx
E-Commerce is continuously evolving and the platform with which early day supply chain networks were built need to adapt to modern standards where consumers demand to drive the retailers to come up with Omnichannel capability. This leads to fast order fulfilment and fiscally return policies. Changes could be in physical size like distributions centres where they are required to hold larger stock (SKU) as retailers are removing physically inventory from stores and move them to DC or other warehouses. These trends have brought about an Inventory balancing paradox as there is a trade-off between retailers moving the stock down the supply network and also need to maintain at stores (FedEx, 11-Jan-2017).

The representative also added that FedEx is coping to accommodate the E-commerce impact and new technologies are being tried out in the HQ at Memphis in Tennessee, USA. The technologies include integration of home automation devices with their system in order to ease certain operations like label generation etc. since E-commerce has made the customer aware of parcel delivery FedEx is developing a mobile app which can accommodate certain feature which gives the receiver options which were not available before. They are also working on integrating a shipping engine into the E-commerce website’s shopping cart which
gives the customer better options to choose from in terms of delivery options and also the e-retailer to be flexible when they give out delivery options. FedEx is having competitive prices for the smaller customer to give them fair chance to compete with the e-retail giants.

FedEx provides fulfilment solutions that use the FedEx network and implement continuous improvement updates that provide FedEx's customer with better e-commerce reach and robust supply chain, which handles the dynamic effect of e-commerce on the chain (FedEx Supply Chain, 1995-2017). Being one of the market leaders in the logistics/supply chain industry, FedEx has the market experience and culture for innovation that helps it overcome big challenges and be up-to-date on present-day commerce. FedEx fulfilment provides different services, which are tailored to better with the operations in the supply chain and provide the customer opting the services from FedEx to feel more comfortable to be working with them (FedEx, 1995-2017).

“FedEx Supply Chain works with 5 of the top 10 internet retailers”, hence the services provided to their customer needs to be of high quality or it would be hard for FedEx to stay in competition with the likes of UPS and DHL in the market. The services provided by the FedEx fulfilment include labour management and executing efficient staffing. Having the right workers ensures the quality of service and optimized work performance. Labour management systems enable a scientific approach to assigning tasks, monitoring performance, tracking productivity etc. that in the end lead to profitable outputs (FedEx, 1995-2017). FedEx fulfilment also includes solutions to optimize retail and e-commerce; solutions include providing seamless and integrated customer experience since the customers shop through various platforms (desktops, mobile-apps etc.). FedEx supply chain leads you to help customers fulfil their expectations on any platform. The solutions allow inventory visibility, transport/shipping options and easier return chain, which provides the end consumer with better flexibility. This solution hence provides flexibility to the customer as it allows customer customization and gives them the parcel/consignment visibility, which is in high demand due to the impact of e-commerce (FedEx, 1995-2017).

The impact of e-commerce has also led e-retailers to have individualistic packaging and customer customization options hence the focus has shifted to the end consumer and not the business, although the end consumer order a product from the business. It is very important for the business to satisfy the customer and since there is a need for supply chain in the middle and FedEx being one of the players provide such solutions like e-commerce integration that allows the business to optimize their digital storefront and integrate the aspects of distribution and return centres for efficient logistics between the business and the end customer. Hence, it is important for the business to have a seamless return experience, which should also yield profitable to the consumer, and the business (FedEx, 1995-2017).

5.6 UPS
The strategy UPS has is to have advanced logistics solutions, which are re-iterated and tailored using a broad portfolio of services and capabilities, which are built into a platform and integrated with their customers. This integration ensures efficient and globally balanced
multi-modal networks, which help UPS, have a longer relationship with their customers and build value in the industry. Having global presence puts UPS as one of the leading competitors with industry-leading technologies and has earned a name of reliability, which provides the customer with a broad portfolio to choose from. UPS does not ignore the fact that E-commerce has affected the trade not just with retail but also with how business operates and implementation of distribution channels (UPS, 2017).

Historically UPS has been servicing the B2B sector, has grown in that area, have a maximum presence in the US, and are currently growing globally. The services provided in the B2B has given UPS its market penetration and helped the company gain network growth. For any business to partner with UPS is done through a global certification program which gives the certified company access to use UPS specific software for other customers as proprietary software. UPS are direct competitors to FedEx in the US and also globally with other giants like DHL and DB Schenker etc. they have market presence in Europe in the UK and Germany with Köln being their European hub. There is more focus to expand in Europe, Asia-Pacific and UPS see developing countries globally as a good growth potential as much new business starts to move to those countries.

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<thead>
<tr>
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<td>1955</td>
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</table>

5.6.1 The impact of e-commerce on UPS

During a meeting with a representative from UPS, he stated the above and mentioned that they are accommodating the e-commerce impact, especially for the return services. The impact of e-commerce has affected the way UPS charges for its services and the prices vary according to the B-C markets especially depending on the relationship with the customer.

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9 The representative works for UPS United Kingdom, Europe
Since e-commerce markets are generally local/regional and the end consumer always prefer to shop locally than international, UPS is concentrating on expanding domestic transport/ground fleet in order to accommodate the increase in the parcel volumes due to e-commerce. UPS has started to update SAP and other third-party logistics provider platforms called as UPS ready to accommodate the future development of the industry. There is a trend in UPS to open more service shops in the US and the UK and this includes small “corner shops” which is going to be available for every postcode in the UK. These access points or service shops provide extra feasibly towards the customer choosing UPS and the end consumer to whom the parcel is being shipped. As there is a tracking option, the consumer can choose if he/she can collect at the service point on if it has to be delivered to his address, in case during the delivery there is no one available to collect the shipment there are options to divert it to the office/workplace or leave it with a neighbour.

There is a lot of investment in R&D towards potential technology like driverless cars and drone delivery, where they are directly or indirectly involved in the development. UPS as a company is slow in terms of adapting to e-commerce impact as the company was built on B2B services and UPS still maintains that as their primary or core business. As the shipments come in various shapes and size the package/shipment is charged for volumetric weight and not the actual weight of the product or actual volume of product for it to be fair in terms of pricing. Better, return service deals are provided as the return time is mostly depended on the end customer taking time to accept and return the package from the service point compared the shipping lead times for the carrier. Impact of E-commerce has lead UPS to add the return labels when the package is first sent as well, sometimes it might turn expensive since the label is already created in the system, but this provides flexibility to the customer and also the retailer’s customer. There is also a service when the end consumer receives an email with the return label link and it is generated when the customer wants to return, this varies depending on what service is opted by the customer. The future strategies are to have better delivery points and locations and grow in terms of setting these points and penetrate in the market. UPS is also focusing on improving the first and last mile delivery as that has been affected the most because of e-commerce.

The future investments UPS is looking into include, improving handling of capacity and new solutions which are going to help and benefit their customers regardless of their industry or business. The internet had changed what the customer expects and procurement as well, consumers/customers want to know what happens to their package at all times and package/parcel visibility is huge due to the effect of e-commerce on supply chain and logistics (UPS, 2017).
6. Analysis

![Figure 4-Focus Area of Case Study](image)

The analysis consists of the area where the carrier and the focal company have an integration and the criteria, which affect the carriers and the operation of carriers. All logistics software providers interact with both the customer and the carrier and the changes in either of the stakeholders would affect the operation of the software company. Fig.4 explains the extent of the study and how the carriers are linked to the focal company and how the factors affect the carriers.

6.1 Overview of Criteria

This section gives an overview of the criteria which has been considered for analysing with respect to the parcel carriers in the US and the EU. Parcel carriers are affected by the factors directly and this, in turn, affects the operations of the focal company. Since it is a chain of moving stakeholders and there is information flow between different stakeholders in the chain, the effect on the focal company is proportional to the change that the carriers undergo. Parcel carriers can be classified into various factors such as segmentation, networks, specification, services and tariff structure. These factors are considered for the analysis, as they were the criteria mentioned by the representatives from the carriers and the focal company.

Segmentation could further be sub-categorized depending on revenue, fleet size and volume of material handled etc. and these categories could be considered as indicators to decide how a carrier is ranked in a country or globally. According to (Schwemmer, 2015/2016) the most important category to study are the revenue figures with respect to the volumetric data. Since
the revenue figures are affected by certain factors it is also important to consider that to define at which market segment is the logistics carrier present. It is also difficult for a parcel carrier to achieve in all these aspects since it is not viable for a carrier company to spend all its resources in development in all the area, it is not practical and it is a complex goal to reach. All carriers focus on building on a core competency and providing the customers with the best service for that competency and try to venture into a new area which the carriers are comfortable in. for e.g. UPS as a company was built on express delivery for the B2B sector and were able to convert that to B2C during the initiation of e-commerce and hence have been successful in the US in terms of a number of packages handled. Considering revenue USPS has had higher numbers and in terms of fleet size, FedEx is largest in the USA.

The Network setup of any company/carriers is also strongly depended on the services provided and the area of operations. Since companies like those that UPS and FedEx were developed on the core value of express deliveries the operations they have is different from USPS, which runs a strong hub and spoke model. E-commerce has changed the business models of companies and has hence altered the supply chain of the business (Bretzke, 2000). A carrier-operating network is built over time and caters to what they have to offer during a particular time. Comparing the American carriers, we know that USPS is a local postal service for the United States and that UPS and FedEx delivery mail but came into existent based on express deliveries. USPS has better reach and market penetration as compared to FedEx and UPS as being individual private entities it is difficult for them to service all the zip codes in the US. The factors that affect their ability to reach all zip-codes is the cost of operations and the exploitation of their resources, as a result, FedEx and UPS use USPS for their last mile deliveries. The network flow is largely dependent on the service opted by the customer and would reach more hubs for least expensive package/service and would have a point-to-point delivery for an expensive service; this is true for both American and European parcel carriers. In Europe, DHL and PostNord also have a hub and spoke model and have listed different services for their customers to choose from. Depending on the service the network flow of the parcel changes. Since there has been an impact on parcel carrier due to E-commerce, carriers in both the US and the EU are refining and updating their networks in order to accommodate the rise in demand.

Each parcel carriers has its own operational method or strategy, which they execute to be better than their competitors in the market. On a very detailed level, it is hard to obtain information regarding the internal developments of companies due to confidentiality, but certain future plans which stand out for companies are presented to the public (Jharkharia & Shankar, 2007). Core competencies of each carrier define the boundaries and help carriers narrow their development process. All American carriers focus on internal technology developments, which are going to improve customer service and operations. DHL has rebranded their global mail services to E-commerce mail just to provide their customers with the idea that DHL works with E-commerce. All this development is brought about due to the impact of E-commerce on logistics wherein the development focus has moved down the supply chain and is concentrated towards the end customer. Due to E-commerce, the supplier needs to concentrate on shipping the parcel directly to the consumer and skip send a large bundle of the parcel to the retailer (Bretzke, 2000). E-commerce has also changed the way
consumer perceive the parcel carriers, the customer now demands parcel visibility and the flexibility of service.

Due to the changes that are caused to the services the carriers provided, carriers need to adapt, by having improved technology and keep up with present trends. These technology improvements go in parallel with the updates to new services, which also affect the operations (Anvaria & Norouzi, 2016). On an operational level when a change is made to a service, there is a change which implies to operations, specification and also the tariff structure for the carriers and also effects the stakeholders involved with the carrier. In accordance with the trend of e-commerce, parcel carriers have started to adapt services, which are personally tailored to the end customer. LSP’s consider looking into coordinative and administrative responsibility for their customer as their core competencies are driven by the customer needs, the customization process work in economies of scale and therefore always favour a specialized service provider (Bretzke, 2000). USPS is working on services, which are more customer-centric, licensed delivery and informed delivery, which provided the end customer with a high degree of flexibility. FedEx is encouraging their customers to used web services as compared to their FSMS (FedEx Ship Manager Service); FedEx is also working on integrating home automation services like Amazon Alexa to the transport systems to enable better flexibility to the customer. These services offered by the carriers help them to perform better in the supply chain and for stakeholders who evaluate the performances of the carrier will have a better idea of what services the company is good at; Services have a proportional effect on the performance management of the company (Forslund, 2012).

The tariff structure for all the carriers in this research remains the same. It is known that not all companies have same pricing models due to individualistic operational models of the companies. All the carriers calculate shipping costs based on volumetric weight and not on the weight of parcel or the dimension of the parcel. The prices are generally based on the origin-destination pair, the type of product shipped and the transport mode used (Fedex, 2017). Although certain companies have their own calculation formula based on a unit of weight (American carriers use pounds (lbs.) and European carriers use kilograms (kg)) or unit of dimensions (American carriers use feet and inches and European carriers use centimetres). Parcel carriers to consider this form of tariff structure helps its customers to adapt to a certain form of shipping method. These prices are fixed for a service that the customer might opt and is customized at the customer end to make it a win-win situation for both the servicing carrier and the customer who has opted for the service. With the increase in E-commerce buyers, parcel volumes handled by the carriers are growing exponentially and USPS handles approximately 5.2 billion packages a year in the US alone and UPS handles 4.9 billion packages worldwide (UPS, 2017).

All the above-mentioned criteria have changed over time and how the companies perceive these criteria has changed. The representatives from every company mentioned E-commerce to be the future of parcel carrier development and that every planned future development is to accommodate the changes brought about by E-commerce. All the data considered before tends towards business development which incorporates maximum inputs for the E-commerce development. Certain technologies, which are developed by the carrier, could be
based on E-commerce at large but could also be used in the different area. FedEx encouraging its customers to use their web services is due to the IT sectors moving towards cloud, all future businesses are going to be cloud driver, and using an FSMS system would be obsolete. Since the technological developments are growing at a fast pace which has also pushed the carriers to adapt to new technologies. In spite of maximum developments from America, US has a slow adapting rate compared to Europe. It is due to large population and the level of comfort the people have towards using new technologies. For e.g. there is still a small percentage of the population which uses pager and fax numbers when they avail the carrier services. In order to remain customer friendly, it is difficult for the carriers to dismiss this kind of actions in their operations. Carriers have also stated that Europe absorbs new technology fasters compared to America. These variations in the market trend also affect the carrier development; an American carrier model would not fit in Europe and vice versa. The government and law that govern companies to play fair in the business world have an impact on how a carrier can price and operate.

Table-8 shows the indicators, which can subclassify the criteria, these indicators, need to be followed by the focal company before collaborating with any parcel carrier in the US or the EU. The indicators have been listed according to the information provided by the representatives from the focal company and the carriers since each company uses its own method for evaluating the criteria. Hence, for selecting a carrier or for two companies to collaborate operations, they should have evaluated all these indicators, so a company like the focal company will be able to have a better perception of the carrier who they are going to work with and help them understand when they need to integrate with the customer.

<table>
<thead>
<tr>
<th>Criteria</th>
<th>Segmentation</th>
<th>Operation</th>
<th>Services</th>
<th>Tariff Structure</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Indicators</td>
<td>Fleet size</td>
<td>Hubs</td>
<td>Core Competencies</td>
<td>Cost of services</td>
<td>Technology Used</td>
</tr>
<tr>
<td></td>
<td>Revenue Figures</td>
<td>Transfer Locations</td>
<td>Number of Services Provided</td>
<td>Cost Calculation Models</td>
<td>Best Practices</td>
</tr>
<tr>
<td></td>
<td>Volume of material handled</td>
<td>Operational Reach</td>
<td>Type of Service</td>
<td>Company Specific</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Quality of Service</td>
<td>technology</td>
<td></td>
</tr>
</tbody>
</table>

6.2 Impact of E-commerce in America and Europe

It is know that investments in the digital marketing and IT have increased sales, general and administrative costs by 2% to 3% and decreased physical store profit by 1% to 2%, hence old obsolete systems do not give the sellers the edge require to compete in the E-commerce market (Wilson, May 3, 2016). Although these new systems are required to have better-optimized resources, materials and information (Zairi & Al-Mashari, 2002). The birth of ICT has not enabled the business to perform digital services like e-mail; web and wireless services, which help business, build better relationships with their customers (Martin Hudák, 2017).
The development of parcel carrier is different between the American and European carriers are distinct and may be unique to the service the carrier provides and to the location at which they are present. It is not easy to generalize how the carrier operates in Europe and the USA and this makes it difficult for any logistics software provider from Europe to adapt to the settings of America unless they are aware of what the carrier has planned and how the carrier has performed in the past. Generally, all businesses are evaluated with historical data and the potential developments planned by the carrier.

American and European carriers do not operate in the same way and they work towards different goals. DHL and PostNord have a strong presence in Europe, PostNord works towards being the best logistics carrier in the Nordic region, and DHL is developing to be a global leader in logistics. Considering the criteria mentioned before and how the carriers perform, allows the logistics company to compare based on a platform and thus helping the focal company to choose a carrier. The criteria also allow businesses evaluating carriers to understand how the carrier performs and in which category. Although they give a broad idea of how the carrier operates, they are not the only source of evaluating.

European carrier work in a very streamlined way in Europe, as carriers from different countries, are not differentiated and this helps customers to reach the end consumers easier compared to other places where inter-country trade is expensive and had many regulations to adhere to. The goals of the EU were to promote sustainable development, economic growth and price stability across borders and this has helped carriers grow both in their local country and other countries where they operate (European Union, 2017). This also helped carriers to accommodate the impact of e-commerce in recent years. E-commerce has allowed the consumer to shop online thereby creating a new trend which has led carriers to handle a large number of parcels and provide the end customer with higher degrees of flexibility.

Fig 5 shows the increase of parcel volume between the years 2012 and 2016 for two European carriers PostNord from Sweden and DPDHL from Germany. This is due to the impact of E-
E-commerce has been present from last 1990’s and started to change the phase of shopping mid-2000. Parcel volumes have grown approximately 50% between 2000 and 2010 and have had a steady 3% growth globally from 2010. PostNord and DPDHL on an average are growing at a rate of 7.25% and 6.02% annually. With the current rate of growth PostNord would handle close to 216 Million packages at end of the year 2022 and DPDHL would handle 1.7 Billion packages in 2022.

American carrier works towards different goals since FedEx and UPS were initiated as express deliveries that remain their core competency. USPS plans its development towards customer flexibility and satisfaction since USPS already delivers to every zip code that is present in the US as compared to FedEx and UPS who use USPS for last mile deliveries. In common, all the American carrier are working towards improving the customer and consumer side of the chain. This new trend is also due to the impact of e-commerce and thus the focus has moved down in the chain and current attention is with the end customer/consumer since the end customer is more sensitive and have started to affect the market directly, it is important for the carrier to fulfil their demands. Considering the material handling, the volume of parcels handled by the American carriers (refer figure 6) has been increasing and this is a global phenomenon due to a global impact of e-commerce. In the US, USPS has handled the most parcel in 2016 and surpassed UPS in 2015 (Sahiner, 2015).

FedEx and UPS compete with the like of DHL on a global level and FedEx larger air fleet helps it solve their international business model. UPS compared to FedEx has a smaller air fleet but rely on ground network and have been successful with their operation in the US and from the US to other destinations. UPS, FedEx and DHL are considered the largest lightweight carriers in the world and have always been in competition (Foxman, 2012). In 2012, UPS was interested in TNT in the Netherlands, Europe to grow in the European market but later were out bid by FedEx. The acquisition was completed in May of 2016 and this has helped FedEx to expand their ground network in Europe (FedEx, 2016).
E-commerce has been the main reason for current development and the developments planned both in Europe and the US. The visible impact of e-commerce on the carrier is the parcel volume increase. Hence carrier both in America and Europe are functional towards accommodating the increase in parcel handling and providing flexible service towards the customers. There are also other factors, which are important to the region, in Europe, the environmental laws are strict compared to the norms in the US, and hence this has motivated PostNord and DHL to use eco-friendly vehicles for their operations. DHL has also gone an extent to stop transport hazardous chemicals and batteries, as they feel it would cause permanent damage to the environment. According to the DHL representative, most last-mile delivery vehicles used are electric or hybrid. 50% to 60% of all vehicles owned by DHL are eco-friendly and they are investing in accommodating more eco-friendly means of transport. American carriers have not listed such plans, but UPS hinted they were investing in eco-friendly cars and self-driving technologies, this could be one of the major difference between American and European carriers.

The collaboration of LSP with all the stakeholders in the supply chain has changed due to the impact of E-commerce. The relationship between the stakeholders is considered for a longer duration since it takes time to adjust to a new customer and to build the relationship over time. As the goods are, being sold online the retailer has the liberty to operate from any location (Delfmann, et al., 2002). This change due to E-commerce has made the stakeholders to develop their Hardware and Software systems since there is a high level of information sharing between the players in the supply chain (Parys, 2017). Integrated IT, WMS and SCM systems are required in order to keep up with the demand from the customer and to the high degree of service quality. Logistics software providers like the focal company help integrate different players in the chain, giving them better access to information which helps improve operations individually for the company and also improve the supply chain performance. Since there are new developments in technology that affect the supply chain industry, tech companies and software companies help the logistics service providers stay updated with the market trends (Sahiner, 2015). A representative from the focal company also stated that constant updates are made to their platform, which is used by different companies in order to maintain better information flow and help the customer’s operations. For e.g. if one of the carriers updates their services or the network flow, the focal company needs to update their software in order to give optimized outputs to the carrier, which in turn will help the customer to ship parcels using the LSP.
7. Result
It is visible that not all carriers function the same way and have differences based on what their customers require, core competency and other stakeholders in the chain. The operational strategy, services of parcel carriers and how the carriers are changing/developing are the key areas to compare to understand how the parcel carriers are different between the US and the EU.

7.1 Development of Parcel Carriers in the US and the EU
This section answers RQ1. It is important for companies like the focal company to understand the similarities and difference between the EU and the US to gain a better perspective and enter the American market. From the data, we know that E-commerce has had a huge impact on parcel carrier and is constantly developing and changing. Considering the operational strategy, the carrier has current and future plans, which are in accordance with accommodating the impact of E-commerce. The major impact E-commerce has had on parcel carrier is the increase in a number of parcels. At the current rate of increase, carriers in America (FedEx, USPS and UPS) would be handling approximately 16 billion parcels per year (Refer Figure-7) with USPS growing at 9.3% per year, UPS growing at 4.3% per year and FedEx growing at 3.4% per year. As mentioned before E-commerce has allowed end customer to demand a new type of services and this has led to parcel carriers provided customer customized solutions and customer flexibility. The comparison between European and American carriers are

- Providing new services allows the carrier to expand their operations, European and American carriers are that the privately owned carriers (FedEx, DHL and UPS) are trying to expand globally and now just in the local market respectively. The entire carrier has listed plans to open more access points for their customers and to enter into new cities/countries.  
- In Europe, carriers are more focused on environmental friendly transport as compared to American carriers, which are focussing on developing new technology. DHL and
PostNord are investing on electrics vehicles and UPS had hinted they are investing in self-driving vehicles.

- FedEx and UPS use USPS for last mile delivery and that is also one of the areas of focus to have improved first and last mile delivery connections as compared to DHL in Europe where the carrier performs the last mile delivery also. As it is expensive for FedEx and UPS to perform the last mile delivery, location/zip-codes in the US, USPS operated on behalf for the last mile delivery.
- DHL has also invested 137 million$ in the US to open new facilities to accommodate the parcel increase and DHL also consider America as the largest E-commerce market by 2020. FedEx has acquired in TNT in mid-2016 and they see this as a potential to grow in Europe using TNT’s ground fleet and TNT’s expertise on Europe’s geography.
- In general, like any business strategy goals, both European and American carriers are focusing on better material handling and better customer service. Since all business, plans are for the betterment of the company and help align the company to grow better in that market.

Mail/Letter volumes are also decreasing due to the impact of digitalization and E-commerce is directly not involved in the decrease of mail volumes. Since USPS and PostNord consider mail and ship them as a postal service, they are undergoing direct effect of digitalization. The data is only available with this carrier since their core competency is postal services and they track the number of mails delivered Fig8&9. FedEx, UPS and DHL consider any postal document as a parcel/package and do not differentiate it similar to that of postal carriers.
7.2 Impact of E-commerce on Parcel carriers

This section answers RQ2. Parcel carrier has started to update their services to provide better customer service. This is also due to E-commerce. Parcel carrier wants to make sure that their customer understands that the carrier accommodates the change E-commerce has brought about in the supply chain industry. Major changes done by the parcel carriers for the future are based on customer flexibility and customer customization. Both European and American carrier are adapting to this but creating better visibility in the supply network. Carries have also rebranded their old services or created new service modules that give customers more choices to choose from.

- Consumers demand where their package is and they would like real-time updates. PostNord and USPS the two local/governmental carriers from Sweden and the USA respectively have mobile applications that allow the consumer to be notified when the parcel is in transit.
- FedEx is encouraging its customers to use cloud-based/web-based services. DHL has rebranded their global mail services to E-commerce mail, providing customers that DHL is E-commerce ready. UPS is investing in opening new access points and providing varying degrees of flexibility towards the customers.
- USPS is developing new services called licensed delivery and informed delivery, which helps provide better package tracking and increase supply chain/supply network visibility. USPS is also developing community-based post boxes, which provides ease of operation. PostNord has invested to open new access points and have recently merged with Post Danmark to gain better market share in the Nordic region.
- DHL, FedEx and UPS, in general, are invested in developing new technology for better customer service and efficient material handling. DHL has automated package sorting at certain facilities to reduce human error and FedEx is developing home automation devices to help customer book a parcel.
USPS provides discounts to pre-sorted mail/parcel for its customers when sending out a large number of packages it is easier for the customer to sort and transfer it to USPS. In Europe DPDHL or PostNord, do not provide this type of benefits towards the customer, instead provided discounts based on point of pick-up, for e.g. it might cost less to ship to an access point compared to shipping directly to a home/office address.

Comparing American and European carrier, American carrier provides a high level of customer customization as compared to European carriers. European carriers are focussed more on increasing access points and reach in Europe as compared to American carriers who focus very little on improving reach within the US. Although American carriers in Europe are attempting to open many new access points and expand their reach. Since most technological advancements happen in the US, American carrier prefers to integrate that technology into their systems, although it takes times and there are certain cases Europe updates to new technology quicker compared to the US. The European carriers also provide eco-friendly transport services and parcel services, these services are well received by the customers since they are taxed less by the government organizations, American carriers have not adapted to eco-friendly methods extensively. A summary of the comparison is presented in figure 10 and 11, where the carriers are compared with different criteria’s and the carriers are compared with each other for present and future plans.
<table>
<thead>
<tr>
<th>Current Developments</th>
<th>PostNord</th>
<th>DHL</th>
<th>USPS</th>
<th>FedEx</th>
<th>UPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Merge with Post Danmark</td>
<td>• Improving Return Lables</td>
<td>• Work-Share</td>
<td>• Acquiring TNT in Europe</td>
<td>• Strong in B2B Sector</td>
<td></td>
</tr>
<tr>
<td>• New PostNord App for Mobile Phones</td>
<td>• 60% to 70% of vehicles used in eco-friendly</td>
<td>• Web and Mobile Applications to choose from</td>
<td>• Web Based Services and FSMS (FedEx Ship Manager Service)</td>
<td>• Strong Ground Fleet</td>
<td></td>
</tr>
<tr>
<td>• New Facility outside Stockholm</td>
<td>• 98% Sorted Automatically</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Future Plans</th>
<th>PostNord</th>
<th>DHL</th>
<th>USPS</th>
<th>FedEx</th>
<th>UPS</th>
</tr>
</thead>
<tbody>
<tr>
<td>• More Distribution Points</td>
<td>• 137 Million $ in US</td>
<td>• Informed Delivery</td>
<td>• Cloud Based Service</td>
<td>• Investments for self driving cars</td>
<td></td>
</tr>
<tr>
<td>• Integrated Production</td>
<td>• More Service Points</td>
<td>• Licensed Delivery</td>
<td>• Mobile Applications</td>
<td>• More flexibility towards customers</td>
<td></td>
</tr>
<tr>
<td>• Reducing Carbon Footprint</td>
<td>• Green Modes of Transport/Lower Co2 Emissions</td>
<td>• Community based post-box</td>
<td>• More Home Automation Services</td>
<td>• Better Material handling</td>
<td></td>
</tr>
<tr>
<td>• Focus, Connect and Grow</td>
<td>• More Access Points (Post Offices)</td>
<td>• Flexibility Options</td>
<td>• Improving first and Last Mile delivery</td>
<td>• More access points</td>
<td></td>
</tr>
</tbody>
</table>

*Figure 11 - Comparison between American and European carrier.*
<table>
<thead>
<tr>
<th></th>
<th>Segmentation</th>
<th>Networks</th>
<th>Services</th>
<th>Specification</th>
<th>Tariff Structure</th>
</tr>
</thead>
<tbody>
<tr>
<td>PostNord &amp; PostNord</td>
<td>Biggest in Sweden and Denmark</td>
<td>Hubs mainly in Gothenburg, Stockholm and Malmo (Sweden)</td>
<td>Post, E-commerce parcel deliveries etc.</td>
<td>New app for PostNord package Deliveries, More delivery points</td>
<td>Volumetric weight</td>
</tr>
<tr>
<td>DHL</td>
<td>Largest operator in Europe</td>
<td>Continental hubs in Hong Kong, Germany, USA</td>
<td>Express Deliveries, Eco-friendly deliveries, high quality of delivery</td>
<td>Large investment in the US, 98% Packages are sorted electronically at Airport Facilities</td>
<td>Volumetric weight</td>
</tr>
<tr>
<td>USPS</td>
<td>Second largest in US</td>
<td>23 NDC (Network Distribution Centers) in the USA</td>
<td>delivers to all zip-codes, market penetration, ships to USA Military bases etc., Pre-Sorting</td>
<td>Informed Delivery, Licensed Delivery</td>
<td>Volumetric weight</td>
</tr>
<tr>
<td>FedEx</td>
<td>Third Largest in US</td>
<td>Hubs in Canada, USA, Europe, Middle East and Asia. With Super hub in Memphis in Tennessee</td>
<td>Express Deliveries, largest air fleet (660), Competitive rate</td>
<td>FSMS, Amazon Alexa, Cloud Based Services, More delivery points, Integration of Home automation</td>
<td>Volumetric weight</td>
</tr>
<tr>
<td>UPS</td>
<td>Largest parcel operator in the US</td>
<td>Hubs in Philadephia, Dallas, etc. (USA), Bonn (Germany), Shanghai, Shenzhen, Hong Kong (Asia), Miami (Latin American and Caribbean), Hamilton, Ontario, Vancouver, etc. (Canada) and global hub in Louisville, KY</td>
<td>Express Deliveries, Large Air Fleet (230), Medical Deliveries</td>
<td>More delivery points</td>
<td>Volumetric weight</td>
</tr>
</tbody>
</table>

*Figure 12- Comparison of Criteria*
7.3 Development of Logistics Software Providers
This section answers RQ3. Any logistics software company (focal company) must consider these criteria before integrating the parcel carrier with the customer. Since the operations in Europe and America are not the same, it is important for the focal company to understand the perquisites in each country/region before carrying out the business. The criteria differ with every company depending on the country, the customers they cater to and the scale of operations. Since it is challenging to normalise selection of a carrier globally, it is important for the focal company to consider these criteria as important indicators to help them choose or reject a carrier. On basis of analysis and the data available, the criteria are ranked in order of importance in fig-12. When the focal company need to collaborate with a carrier, they need to follow the order of importance for the criteria along with the indicators mentioned in table-8. Since the operations of carriers are different in the US and Europe, the focal company which helps integrating carriers with customers’ needs to comprehend the fact that E-commerce has changed the way the carriers operate and that carriers are adapting to new services and operational methods to accommodate the change.

These criteria are the primary requirements to select the carrier, as they include the indicators that will give any logistics software company a good overview before collaborating with other companies. Since it is difficult to have normalised standards for selecting a carrier, it would be helpful for the focal company to have a selection model based on Europe (since they are based in Europe and have better expertise in the region) for selecting carriers in America considering these criteria as a foundation. As the future of transportation is strongly based on eco-friendly methods, it is important for any company that has business with the logistics carrier to consider what methods have been adopted by the carrier to be environmentally

Based on the analysis and the future trends there are some other factors that could affect the focal company. Since only 5 factors (segmentation, specification, service, Tariff structure and networks) are being used to provide solutions to the focal company, there are some factors such as Environment, Historical data, Flexibility and E-commerce that the focal company does not consider now. It is very important for logistics service providers to consider E-commerce in their software platform since it has influenced the parcel carrier industry. Due to the effects of the E-commerce’s impact, end customer demands higher levels of flexibility that the carrier would require to provide in order to be considered for integration. A suggestion to all logistics software providers is that they should have parameters in their software systems, which correlates E-commerce with parcel carrier flexibility, hence providing the best service for the end customer. The environment has been the talk after 2015, it might not be a huge factor to consider now but it is the future factor applicable to sustainable transport and since parcel carriers are a huge part of transport users, it is important for them to move towards sustainable transport methods. Hence, Environment could also be one of the parameters for considering selecting a parcel carrier.
8. Conclusion

E-commerce has had a huge impact on the parcel carrier industry and has changed the way traditional carriers operate. Comparing parcel carriers from the US and the EU, it is understood that the carriers do not function the same way and have different goals to achieve. The main area of focus for carriers is to implement streamlined E-commerce solution for their customers and most development happening now and which are planned for the future is based strongly on the impact of E-commerce. Both American and the European carriers focus primarily on customer satisfaction but achieve it in different ways. American carriers are more focused on first-hand technologies that make it easy for the customer to send and receive parcel as compared to the European carriers who consider the better operational network to achieve good customer satisfaction.

It is important for logistics software providers (focal company) to include E-commerce as one of the criteria in their software models or services they provide to their customers. It is essential that logistics software providers have these criteria for selecting a parcel carrier in a new location like the US, as it helps the company evaluate the logistics carrier better. Due to this fact, there are different factors affecting the carriers at different periods, it is incomprehensible to have normalised standards to have an unbiased selection of a parcel carrier. Previously E-commerce was not a factor that used to affect the logistics carrier sector but now it is a principle for the European logistics software company to consider the difference in operation between EU and the US and also the fact that E-commerce is changing the carrier industry to a large degree before entering into the new market.

To have better information regarding the selection of parcel carrier, it would be advisable to consider the customer side of information for analysis. The customer is a stakeholder in this supply chain and has a large impact on the parcel carriers and logistics software companies since the customer is one of the main drivers of the chain. Analysing more carriers in both America and Europe will give information that is more detailed about the region. Considering smaller players but who have a larger impact on a region would be more interesting to analyse. Most of the data used were publicly available information, due to confidentiality, not all data required was collected. Companies could provide mock data that could help researchers to have a benchmark to start analysing. Information from inside the company could be more verified compared to publicly available information that is to provide the reader with a general image of the company and not detailed information. It would also be interesting to consider more criteria for analysis, there are other criteria like law, Governments and environment which affect the operations of the carriers in that region.
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10. Appendix

10.1 Interview Questions

Understanding the Focal Company

1) If a carrier has a usual operating procedure and changes the operating network, how does it affect the company? For e.g., if Zalando uses DHL to ship from Germany to Sweden and the usual shipping procedure was from Lubeck, Toftanäs, Orebro and Norrkoping and instead of this if the parcel moves from Lubeck to Amsterdam then to Copenhagen and then to Norrkoping if this happens how does it affect the focal company?

2) Obviously, there are changes made by carriers because of the e-commerce impact but what would be its effect on the company directly or indirectly, for e.g., if PostNord comes up with a new mobile phone app how does that affect the company.

3) Influence of E-Commerce on partnership/client relations, does the company have a direct impact on it is just with the customer and carriers?

4) Impact of E-Commerce on customer relations between the e-retailers and the carriers and the company and how is that different from a normal retailer, carrier and company?

5) How has the company adapted to the e-commerce growth (current plans)?

6) Future trends/future strategies towards better e-commerce? Because all the retailers and carriers are updating, so is Company updating as well?

General Carrier Understanding Questions

1. **Basic summary of how the partnership works?** (carrier Perspective)
   - How are the clients selected? Criteria considered.
   - Do you approach or do they client companies approach?
   - How does the partnership work?
   - More Information?

2. **Segmentation**
   - What range of size is the company at?
     - Fleet size
     - Revenue figures (for parcel handling)
     - Operational reach
     - Volume of material (Parcel’s) handled
   - How is the size or segment of operator defined?
   - Any other specifics?

3. **Operations**
   - How is the network design? (Locations)
     - Hubs
     - Distribution centres
     - Transfer locations
     - Material flow (parcel)
   - Given a specific territory, how do they operate?
   - Other partnerships/code sharing etc.
4. Services
   • What are all the services available?
   • Any core competent service? Special service?
   • Handling of Dangerous goods?
   • More information?
5. Specification
   • General technologies used?
   • Company-specific technology?
   • Company and country-specific technologies?
   • Types or labelling/ Communication etc.?
   • Any other specifics?
6. Tariff Structure
   • Cost of services?
   • Cost calculation models?
   • Pricing strategies?
   • Any other specifics?
7. The current impact of E-Commerce on the parcel logistics industry?
8. Company-specific current and future trends?

Questions Based on E-commerce Focus

1) Impact of E-Commerce on Operations/network flows
2) Impact of E-Commerce on Pricing models/Tariff structure
3) Impact of E-Commerce on Transportation
4) Impact of E-Commerce on partnership/client relations
5) Impact of E-Commerce on customer relations
6) How has the company adapted to new technologies/ innovations?
7) How has the company adapted to the e-commerce growth (current plans)?
8) What defines a parcel (dimensions, weight, type of product etc.)?
9) How does the company differential between an e-commerce parcel and a normal (an individual shipping) parcel?
10) Future trends/ future strategies towards better e-commerce?