Service Innovation in Third Party Logistics
A Case Study of Green Cargo Logistics AB

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Abstract

For a very long time, Innovation has been viewed as technological phenomenon representing technological advancement in product or process features. A lot of research can be found in literature representing product innovation management supported by empirical studies, however, prospect of service innovation management has been largely ignored. Especially there is very limited research on service development process in third party logistics companies.

This research aims to bring a holistic view of innovation management in third party logistics (3PL) companies so that a better understanding can be developed and it can be examined if existing innovation models are valid for 3PL companies.

To achieve the objectives of this thesis, relevant literature has been reviewed extensively so that conductors of this research can get benefit of existing knowledge in the field and a duplication of research can be avoided. This research work is based on qualitative case study and Green Cargo Logistics AB (which is one of well established third part logistics (3PL) companies) was selected in order to find answers to research questions, which were resulted from the research gaps, found in existing literature. Findings from the case company are discussed in connection with theory and an analysis is made to reach on following conclusion.

Conclusions: An innovative 3PL company has better ability to stay competitive and increase its market share through a better ability to serve it with new better services. Along with technological advancement, spotted opportunity for business growth, threat from competition and customer demand, environmental concerns have also been recognized as driving force for innovations in 3PL. This thesis also shows that a small independent unit (group of people) can play role of innovative organization to prosper creativity by improving interactions with external and internal linkages. This research illustrates that contrary to existing literature (which says there should be one single strategy for innovation management process), a flexible and adaptive strategy can be equally or more effective. For balancing risks and rewards while selecting development projects, consideration of return on investment (ROI) is found to be the most important decision criterion. For implementing the selected innovative idea, a small-scale test should be conducted in order to avoid risks associated with development projects.

Key words: Innovation, Third Party Logistics, Service Innovation, Service development, Innovation management
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1 Introduction

Innovation has become highly important due to the invention of new technologies, increased competition, and ever-increasing demands for customized goods/services from customers (Bessant and Tidd, 2007). Innovation and innovation management are not only a profit multiplier function but also a matter of ‘survival and success’ for many companies, countries, and individuals. Logistics service providing companies are not an exception to this fact. Logistics companies are actively looking for new solutions to compete in a technologically advanced and globalized business environment (Nagarajan and White, 2007). However, service innovation concept has been largely ignored in research of logistics (Flint et al., 2005; Wagner, 2008).

For a very long time, innovation has been taken as a technological phenomenon, representing a technological change in industry or change in the combination of new product or process to boost economic growth. Innovation in manufacturing industry has been in the forefront of literature and focus has been on product innovation. However, innovation has also other dimensions i.e. commercial approaches, organization structure, and new input sources, therefore innovation is not limited to manufacturing companies but also to service organizations (Bessant and Tidd, 2007; Klink and Visser, 2004).

There have been a lot of research on product innovation management supported by empirical studies, but service innovation, especially innovations related to logistics’ services, have not received sufficient attention (Klink and Visser, 2004; Grawe et al., 2009).

Innovation is not self-evolving phenomenon; it needs to be managed in some way. Over the period of time, a number of innovation models have been introduced in literature. However, Logistics innovation research is immature and lacks models for innovation management in third-party logistics companies. This thesis aims to get a holistic view of innovation management in third-party logistics companies so that a better understanding can be developed and it can be examined if existing innovation models are valid for 3PL companies.
2 Literature Review

In this chapter pertinent literature is represented. Literature is reviewed to have an insight of concepts in innovation management, types of innovations, innovation models, service innovation, supply chain management, logistics management, third party logistics, and role of service innovation in market creation and in enhancement of a company’s performance.

2.1 Innovation

2.1.1 Definition of Innovation

Innovation is derived from Latin word ‘innovare’ that means to make something new or to change (Bessant and Tidd, 2007). Rogers (1995) defines innovation as an idea, object or the process that seems new to individuals or the adoption unit. There has been great misconception about considering invention and innovation as a same thing while truth is that a new idea, object or process is merely an invention unless it is refined in such a manner that it can be successfully brought to market value. Hence, an invention that is successfully brought to market value is called innovation. Maital and Seshadri (2007) added that innovation is application of creativity to every facet of value chain in an organization, which creates value for their customers. Zairi (1998) also took innovation as value creating activity by means of improved methods.

In their policy statement, UK Department of Business Innovation and Skills (2011) defined innovation as a process of successful exploitation of new ideas to create economic, social and environmental value.

A comprehensive definition of innovation is ‘the market realization of new or significantly improved products, process or methods (organizational or marketing) in business practices, workplace organization or external relations. In other words innovation is in itself implementation of one or more type of innovations (Wagner, 2008).

Considering above definitions of innovation by different authors, Innovation can be defined as newness in product (goods/service), process (methods of
producing, organizing and delivering) and/or organizational practices which create value for business.

2.1.2 Importance of Innovation

In current era being innovative is not an option for many of companies, countries and individuals. It has become a matter of ‘survival and success’ due to increased competition. As Brogren (2011), in her welcome speech at Awareness Raising Event in Sweden stated:

“We are more and more competing on global market, for Europe and specifically for Sweden, who is far away from the large markets and we have the cost level which is not lowest in global perspective. We have to climb up in order to compete on global market”

Innovation plays a critical role in climbing up the value chain in an increasingly competitive environment (Grawe et al., 2009). Hult et al. (2004, p 429) consider innovation as a key component for success as they stated:

“It is through innovativeness that industrial managers devise solutions to business problems and challenges, which provide the basis for the survival and success of the firm well into the future”

Innovation is important for individuals, companies, countries and the whole world. By looking at economic growth occurred in last century; almost all of that growth can be attributed to innovation. New ideas give birth to new businesses, numerous examples can be found around us (Bessant and Tidd, 2007; Baumol, 2002).

As this paper focuses on innovation, logistics service providers and particularly service innovation and third party logistics, it is very important to mention here that Logistics industry is not an exception and innovation has become equally important for logistics service providers. Logistics companies are actively looking for new solution to compete in technologically advanced and globalized business environment (Nagarajan and White, 2007).
2.1.3 How does Innovation occur?

There have been different views about occurrence of innovation; two schools of thought have made arguments. Individualistic school argued that innovations are result of individual efforts and innovators are born with innovativeness. While social deterministic school argued that innovations resulted from external social factors and forces as cultural changes, economic forces, and demographic changes and they argued that innovation would occur when the conditions were right (Trott, 2008).

Historically, innovation was viewed as result of unexpected outcome and from many cases of innovation; importance of serendipity or luck has been highlighted. In reality serendipity is rare and prior knowledge about the area is required in order to advance with the discovery. Famous saying of Louis Pasteur, ‘chance favors the prepared mind’ fits for innovation. After the world war two linear model of innovation got popularity. According to this model of innovation, there are two types of innovation occurrences i.e. technology driven (technology push) and customer need driven (market pull) innovations. Linear model of innovation was the first in which it was accepted that innovation is not result of serendipity (Trott, 2008) but there are some drivers of innovation. Later simultaneous coupling model of innovation was brought to theory, according to this model there is not a single driver of innovation rather innovation occurs in result of simultaneous combination of knowledge from all three organizational functions (‘Marketing’, ‘Manufacturing’ and ‘Research and Development’) that promote innovation and there is no starting point (Trott, 2008). Interactive model is further development of previous models and links together market-pull and technology-push models. According to this model an innovation process is the result of a complex set of communication paths on which innovative ideas are formed and transferred. Since this topic is beyond the scope of this paper therefore to understand these models more in depth readers are referred to (Trott, 2008).

As focus of this research is innovation in relation to logistics, Lin (2007) states that innovation in logistics and logistics related technologies result from both
internal and external factors. As shown in Figure 1 there are some internal factors like organizational encouragement and quality of human resources in combination of external factors like environmental uncertainty, customer needs, competition threats, technological advancement and governmental support that push organization to produce innovative products and services.

![Diagram of Motivating Factors for Innovation in Logistics](image)

**Figure 1: Motivating Factors for Innovation in Logistics (Lin, 2007)**

### 2.1.4 Types of Innovation

Innovation has many forms and dimensions that can range from technological to administrative, internal to external, incremental to radical, product to process, component level to system level and many more to name. (Bessant and Tidd, 2007) reduced them to four and named the model as 4P model of innovation to explore innovation space. 4 Ps stand for product, process, position and paradigm.

- **Product innovation** is novelty of things (goods or services) an organization offer.
- **Process innovation** is new way of producing and delivering things (goods or services).
- **Position innovation** is newness of the context in which goods or services are introduced.
- **Paradigm innovation** is total changes of mental models or image of the company i.e. shifting belief about what organization does.

Each of these four Ps are then further divided into two dimensions incremental and radical innovations as shown in Figure 2
Figure 2: Types of Innovations and Dimensions (Bessant and Tidd, 2007)

2.2 Innovation Management Models

Despite innovation’s importance, it is very difficult to manage innovation due to involvement of high uncertainty and risk in whole process. And despite its criticality, managing innovation is a huge challenge. It is not enough to simply wish innovation to happen itself (Bessant and Tidd 2007; Maital and Seshadri 2007). Every company cannot rely on serendipity because it does not happen for all. Many authors on innovation research believe that innovation needs a systematic management approach therefore over the time a lot of models for innovation management have been brought to theory by different authors, a few of them will be discussed here.

2.2.1 The Innovation Funnel

Irrespective of the type of innovation, innovation comes into reality after going through different phases. Innovation funnel as shown in Figure 3 is a representation of these phases. A number of Ideas come from outside and also generated within organization and then filtered out at initial stage, some goes to second phase of concept development, some ideas are recycled and finally they go through implementation phase before coming to market in form of new
products, new services, new processes, new business or a combination of two or more.

In all conversion process of an idea into an innovation, many concepts and projects are rejected and few of them reach to final fully functional innovative product.

![Development Funnels](image)

**Figure 3: Development Funnels (Goffin and Mitchell, 2005)**

### 2.2.2 The Pentathlon Framework

Principles for effective and efficient innovation management are different from principles of general management. This requires matching technical expertise with social skills to promote creativity. Technical expertise is closely related to engineering, technology and project management while social skills are closer to social science, management of humans. Presence of innovation strategy is also an essential element to keep balance between different projects and the efficient use of resources. Innovation funnel though is simple representation of innovation phases but it does not show the link to organizational culture and strategy. Pentathlon framework as clear from its name and shown in Figure 4 identify five elements of innovation management namely, Innovation strategy, Ideas, Prioritization, Implementation and ‘people and organization’ to develop an innovative product, process or service.
2.2.3 Bessant and Tidd Model

Bessant and Tidd (2007) represented another version of the above model and added need of proactive linkages across boundaries i.e. inside the organization and with agencies outside the organization. Figure 5 represents Bessant and Tidd’s model of innovation. Since this is the most comprehensive general model of innovation management found in literature so far and it comprises the components of all previously presented models, therefore every component of this model is presented in detail on following pages. This model will also form the basis of analysis while comparing innovation management process in our case company.

Figure 5: Bessant and Tidd Model for Managing Innovation (Bessant and Tidd 2007)
Creation of Innovative Ideas

For innovators, opportunities rest in other’s problems. In other words innovation in true sense is the ability to spot these opportunities and to devise new methods to make use of them. Innovative ideas can come from a number of sources from another context, from research, from user feedback, from inspirations, by combination of existing ideas with new ones and by visualizing alternatives for future needs (Bessant and Tidd, 2007).

New Ideas do not come directly; rather they flow around in interactive and complex social networks. Bessant and Tidd (2007) named this kind of network social spaghetti, where different peoples interact with each other to discuss different ways and on different topics. This complex interaction enhances the knowledge of network and hence seeds the new ideas for innovation.

Authors on Innovation have agreed that successful innovative ideas are customer centric (Flint et al., 2005; Zairi, 1998; Brady, 2010; Panayides, 2006; Wallenburg, 2009; Yazdanparast et al. 2010). By knowing your customer needs and building a close relationship with them help companies to co-create what actually add value in the value chain. Especially in service sector and particularly in logistics services due to direct and very close interaction with customer, their involvement can multiply innovative ability of a company.

Chesbrough (2011); Chesbrough (2007); Chesbrough et al. (2006) in their writings have stressed that businesses should open up their boundaries for rapid and effective generation of innovative ideas. According to Chesbrough et al. (2006), in open innovation model ideas from outside the business should pour into innovation funnel and innovative products and ideas should outflow the innovation funnel of the organization if company do not have ability to carry on the project.

Selection of Innovation Projects

This is most tricky part in innovation process because innovation process is full of guesswork and uncertainty. The only way to find out whether or not an idea is good is to develop it. The question “can we do it?” can be answered only from
the experience of an organization, which have tested that idea. As Bessant and Tidd (2007, p10) state:

“If we are going to succeed we need to build rich and varied ways of picking up on all the potential trigger signals which offer us interesting variation opportunities”

While selecting from many possibilities, limitation of resources should also be considered. This is a big challenge because if a wrong project is selected and resources are consumed all in vain, company can end out of the business (Bessant and Tidd, 2007). A single innovation project does not define future of the company; a set of projects does define; therefore companies need to make an aggregate project plan (Wheelwright and Clark, 1992).

**Implementation of Innovation Projects**

Bringing an innovative idea into reality, from raw concepts to fully-fledged product, process or service which people use – is a long journey and in whole this journey Murphy’s Law dominates – “if things are going to get wrong there is good chance they will!” Implementing an innovation project is not just matter of project management, uncertainty should be considered while balancing budgets against time. This is well explained in the words of Bessant and Tidd (2007, p 10)

“If even if we can steer a project through rocks of making it real in terms of new product, service or process proposition there’s no guarantee that people will adopt it and it will diffuse widely”.

**Innovative Organization**

An innovative organization has open environment for those having great ideas and motivations to bring new solutions to the organization. In this type of organization bureaucratic obstacles and inter-organization communication difficulties have been minimized in order to open new gate to everyone’s ideas. This open environment needs to be strategically structured, in order to avoid internal chaos. Every potential idea requires be counting and encouraging.
Appropriate and strategically structured process is a must in this type of organization (Bessant and Tidd, 2007).

**Strategic Leadership, Direction and Deployment**

Although innovation is about exploring the unexplored and risky areas, organizations cannot waste their resources on every idea and therefore a quite well developed strategy is required. Innovation is not one–night happening event but instead it has been based on well–designed process of innovation’s generation and implementation. It will not be enough to rely only on a strategically designed structure but motivated leader is an inevitable factor, who has courage to steer the organization away from the path which others are following or what previously have been followed (Bessant and Tidd, 2007).

**Proactive Linkages**

Innovation is not a solo act in 21th century. There are many factors impacting the chain from great idea to great product, service and or process. In order to be successful, both internal and external resources needed to be deployed. Customers, suppliers, sources of finance, skilled people and other effective resources are essentials. Knowledge transfer throughout the innovation process, chain and external environment is unavoidable. This proactive boundary finds forms and deploys creative relationships from outside to inside of organization and vice versa (Bessant and Tidd, 2007).

### 2.3 Service Innovation

For a very long time innovation has been taken as a technological phenomenon, representing a technological change in industry or change in combination of new product or process to boost economic growth. Innovation in manufacturing industry has been in forefront of literature. However, innovation has also other dimensions i.e. commercial approaches, organization structure and new input sources therefore innovation is not limited to manufacturing companies but also to service organizations. (Bessant and Tidd, 2007;Klink and Visser, 2004)

To understand service innovation, it is very important to understand service itself. Hernandez (2010, p 360) states that:
“Services are intangible economic goods in form of offered promises, which require the integration of external factors into the provision process and leads to tangible and/or intangible results”

Inherent intricacy in studying intangible feature of service; makes service and service innovation difficult to be measured and analyzed. Also, there are lack of methods, indicators and adequate data for analysis and measures (European Commission, 2007).

Service industry is formed from spinning off and outsourcing of formerly integrated service functions such as human resource, communication, customer relations and logistics in manufacturing industry. This resulted in rapid formation of independent service providing companies and hence growth of service sector (Chapman et al., 2003).

Service innovation stands for development of new intangible economic goods that are perceived as new and helpful service by its users. Since about seventy percent of world’s economic activity is generated from services –service innovation is relevant to every field of life to some level (Flint et al., 2005; Klink and Visser, 2004; Grawe et al., 2009).

Provision of services require high level of customer interaction therefore it is critically important to establish good relationship with customer for gaining insight into customer’s service needs that will ultimately enhance both cost efficiency and operational effectiveness (Stank et al., 2003).

2.3.1 Market Creation with Service Innovation
In highly competitive markets, to rely only on developing new product is not a success key anymore. More often companies race into market with their new product offerings, with latest and highest capabilities and technologies, for which they face, direct competition. Service improvement and service-based approach can empower organizations to appropriately response to the existing competition and can add value to the organization (Grawe et al., 2009; Chesbrough, 2011).
Many companies have realized that in order to survive in this competitive market they need to improve their service offerings but few of them succeed. In order to create new market or reshape the existing market, companies require an ability to detect and decide where and how to create and grow new markets (Bessant and Tidd, 2007). Next step is to deliver new services, which require service innovations (Berry et al., 2006). Innovation is one solution to create and enhance market share and to influence the business performance (Hult et al., 2004). Chesbrough (2011) emphasizes that by deploying service innovations companies will obtain huge successes in their market creation that they had never experienced before.

Maital and Seshadri (2007) have found that there is a correlation between market share and return on investment in service innovation. As shown in Figure 6, at 20% pre-tax return on investment, market share exceeds 40% in average.

![Figure 6: Relationship between Market Share and Pre-Tax Return on Investment in Innovation (Maital, Seshadri 2007)](image)

Nine service innovations have viewed by Berry et al. (2006). These innovations have been deployed in most successful and innovative companies for market creation. According to them these drivers of market creation are:

- A scalable business model
Comprehensive customer experience management
Investment in employee performance
Continuous operational innovation
Brand differentiation
An innovation champion
A superior customer benefit
Affordability
Continuous strategic innovation

These nine drivers determine the holistic approach toward market leadership. Service innovations that create new markets need to be categorized under benefits offered and the degree of service separate ability, which promise the greater and more potential growth in market creation than those imitative or incrementally improvements of service offerings (Berry et al., 2006).

To be able to create effective service innovations, a new business model needed to be designed. This business model should connect internal innovation creativities to external activities. This linkage will encourage both internal and external resources and will bring profits and value to the entire business (Chesbrough, 2011). This business model named “open innovation process” by (Chesbrough, 2011)emphasizes on transparent and open system that enable all the players in chain to play their part in the process of innovation creation by including customers, suppliers, makers of ‘complementary goods and services’ and even competitors. This model has been discussed in the open innovation model part of this thesis.

Not only manufacturing but service sectors also need to co-create new service offerings based on customer’s service experience. To deliver desired service to the customer and enhance market share, customer-relationships are inevitable. Tricky question in this regard is that; what varieties of services customers want? Service innovations created in cooperation with customers to meet unsolved customers problems and therefore without deep connection with customers
experience proper service cannot be designed and hence cannot respond to their requirements (Wallenburg, 2009; Chesbrough, 2011).

2.4 Supply Chain Management

Supply chain is integration of process in which raw materials are converted into finished products and then delivered to final customers. It spans all and related functions from purchasing to manufacturing and then to delivering to final customers. In a supply chain number of different businesses work together for delivering final products to customers (Beamon, 1999). Supply chains can be used as a platform for transferring and upgrading suitable practices and inter-organizational learning (Bessant et al., 2003).

Supply chain can be defined as a team of integrated logistical processes, which span activities from sourcing of material from suppliers to deliveries of the products and services to the final customers. Supply chain management has been defined by control based on integration and networking of all the processes throughout functional, geographical and organizational interfaces (Hoek, 1998).

Basically the main objective of each supply chain management is to have a close relationship with all chain parts and to increase collaboration; so that final value can be delivered to final customer in better way by means of cost reduction and perceived value addition.

Christopher (2010, p 3) defines supply chain management as

“The management of upstream and downstream relationships with suppliers and customers in order to deliver superior customer value at less cost to the supply chain as a whole”

2.4.1 Logistics Management

Logistics is part of large integrated network, called supply chain. This is a support function and an extension of physical distribution management of raw material and finished products. Logistics management covers both handling of material and information flow through a supply chain (Chapman et al., 2003; Beamon, 1999; Christopher, 2010; Germain, 1996).
Wagner (2008) defines logistics as a mix of processes which include strategic procurement management, storage of raw materials, parts, semi-finished and finished products, physical movement and related information flow through the supply chain in a manner that profitability is maximized by cost effective handling of customer orders. Figure 7 explains this definition, material flows from supplier, through the organization and conversion process to the final customer, while requirement information flows the other way. Hernandez (2010) links these tasks related to logistics with general definition of service and states that provision of service must meet or exceed the customer’s expectation.

![Flow of Information and Materials in Supply Chains](Christopher, 2010)

Recently logistics industry has crossed turnover level of $100 billion worldwide and logistics management have become very vital activity for minimizing the distance and time in global supply chains. Effective logistics management defines the extent to which an organizations distribution program meets the customer expectations (Klink and Visser, 2004; Rhea and Shrock, 1987).

### 2.4.2 Third Party Logistics (3PL)

Increased competition and cost effective solutions from external logistics service providers have forced companies to focus on their core functions and outsource logistics related activities to those who are specialists in logistics. Many companies are outsourcing this function and percentage of such companies is at record high level (Klink and Visser, 2004; Lin, 2007; Lieb and Bentz, 2005).

A company, who solely operates for provision of logistics-related single or multiple services on contractual basis, is called Third Party Logistics Company
True third party logistics companies provide solution to problem in the supply chain by incorporating multiple logistics services that are managed solely or together (Schary and Larsen, 1995).

Typical examples of logistics services provided by third party logistics companies as identified by Lieb and Bentz (2005) and Hernandez (2010) are:

- Freight payment
- Shipment consolidation
- Direct transportation service
- Customs brokerage
- Warehouse management
- Freight forwarding and Carrier selection
- Tracking and tracing
- Measurement of carrier
- Rate negotiation
- Relabeling and repackaging
- Order fulfillment
- Product returns
- Reverse logistics
- Operation of IT systems
- Merge in transit
- Fleet management and operations
- Order processing
- Customer spare parts
- Selection of software
- Contract manufacturing
- Assembly and installation
- Consulting services
- Purchase of materials
- After sales service and Product testing

2.5 Innovation Management and Third Party Logistics

One reason of failure of many companies is that they do not anticipate need for change, what goes up can come down at the same pace (Bessant and Tidd, 2007). Innovativeness is vital competence required to succeed for many companies (Flint et al., 2005; Maital and Seshadri, 2007). It is empirically proven fact that companies that have better innovation management systems are more profitable than those who do not have proper innovation management system (Maital and Seshadri, 2007).
Being competitive and maintaining competitive advantage has become very difficult for companies because of increasingly complex and hyper-competitive environment. Customers are demanding more customized products/services. These factors are forcing individuals, companies and supply chains to develop innovative solutions and to gain and maintain competitive advantage (Yazdanparast et al., 2010). Stagnant organizations, which do not consider innovation, lose its competitiveness (Johnson et al., 1997) and logistics management is not an exception. Logistics service providers have to innovate so that they can meet the challenges while maintaining profitability (Klink and Visser, 2004).

Innovation does not only lead to development of new markets, rather it also offers new ways of serving established businesses (Bessant and Tidd, 2007). Third party logistics companies must create large range of services to meet their distinct needs (Coltman, Gattorna and Whiting, 2010). Ability to Innovate have influence on quality of third party logistics services, it helps in creating the value for their customers (Panayides, 2006). Service innovation takes place at third party logistics when, customer of their service find new or improved service which can result in improved performance of their business (Wagner, 2008).

Hence innovation in relation to logistics management or simply logistics innovation can be defined as development and implementation of any logistics related service, which is seen as new and helpful for its customers. This can be in any form i.e. improvement of operational efficiency or provision of better service to customers (Klink and Visser, 2004; Mena et al., 2007).

Logistics innovations are ranged from basic to complex innovations. For example new packaging designs, creation of new deliver system, development of new software, and provision of new services and building of new infrastructure / innovative facilities (Flint et al., 2005). Although organizations create profit from these types of innovations; however, adoption of new technologies and first step taken by competitors as well as customers put new challenges for the organizations. Lieb and Bentz (2005) give example that adoption of RFID radio
frequency identifier technology by manufacturers put challenge against third party logistics providers to adopt RFID technology and meet requirement of their customers.

Chapman et al. (2003) concluded that the logistics companies, which are redesigning their relationship and structure, building knowledge networks for improving data communication, information and knowledge are harvesting fruits in forms of greater efficiency, greater customer satisfaction, greater flexibility for adoption to market changes, better decision making and improved strategic planning, which are ultimately leading to rapid innovation capabilities.

2.5.1 Types of Logistics Innovation

As shown in Table 1, authors on logistics innovation classified types of logistics innovation from three perspectives; first classification as presented by (Germain, 1996) was done with respect to degree of novelty/ radicalness of innovation, i.e. incremental, intermediate and radical innovations. Radical innovation in logistics is one that brings fundamental and significant change in whole system. Examples of Radical innovations are AS/RS (automated storage and retrieval system), automated material handling equipment and use of robotics. Incremental innovations in logistics are those, which do not bring abrupt and significant change in whole system but are subject to incremental improvement of single basic function; hence bring the incremental improvement in the bigger context. Examples of incremental innovation are use of In-process inventory control, Vehicle routing, Warehouse short interval scheduling, warehouse order selection, order entry, warehouse online receiving, warehouse workload balance, warehouse merchandise locator, sales forecasting, freight audit payment and freight consolidation software(s). Intermediate innovation in logistics bestrides other two type of innovation example of this type of innovation are introduction of Optical scanner, EDI (electronic data interchange), DRP (distribution requirement planning), Distribution modeling software, MRP (material requirement planning) software, Direct productivity and profitability software, Handheld devices, Bar Codes and Order Processing software. In his research, Germain (1996) also noted that adoption of radical innovation is less then
adoption of intermediate innovation and adoption of intermediate innovations are in turn less than adoption of incremental innovation. While cost involved in adoption are inversely related.

Mena et al. (2007) stated that innovations could be classified as technological versus administrative innovations in logistics. Technological innovation refers to deployment of new technological solution in order to enhance competitive advantage. Examples of this type of innovations are telemetric, Information technology infrastructure, satellite tracking systems, RFID, Vehicle routing and scheduling, transport management systems, warehouse automation, electronic signature for proof of delivery, electric vehicles and automated check in system etc. Administrative Innovation refers to changes in business process, customer and supplier relationship management, organizational structure and knowledge management, which lead to innovation. Examples of administrative innovation are customer collaboration, labeling postponement, late assembly, co-packing, co-manufacturing, just in time system, mass customization and green logistics.
<table>
<thead>
<tr>
<th>Publication Year</th>
<th>Author</th>
<th>Classification of Types of Innovation</th>
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<tbody>
<tr>
<td>Wallenburg (2009)</td>
<td>Multiple Customer Related Innovation</td>
<td></td>
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<td></td>
<td>2.a. Single Customer Related Innovation</td>
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<td>2.a.i. Proactive Innovation</td>
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<td>2.a.i.α. Proactive Cost Improvement</td>
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<td>2.a.ii. Reactive Innovation</td>
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<td>2.a.ii.α. Innovation on beginning of Relationship</td>
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<td></td>
<td>2.a.ii.α.β. Reactive Innovation</td>
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<tr>
<td>Mena et al. (2007)</td>
<td>Internal Innovation</td>
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<td></td>
<td>Administrative Innovation in Logistics</td>
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<tr>
<td>Germain (1996)</td>
<td>Technological Innovations in Logistics</td>
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<td>Intermediate Innovation</td>
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<td>Radical Innovation</td>
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Third classification as presented by (Wallenburg, 2009) is pure internal innovation versus customer related innovation in logistics. As shown in Figure 8, Wallenburg (2009) further classifies customer related innovation in two types i.e. first as single customer related innovation namely relationship specific innovation and second as multiple customer related innovation or market innovation. Then he classifies relationship specific innovation in two categories; first as single customer related innovation or market innovation and second as multiple customer related innovation or market innovation.
ongoing relationship. Then he classifies innovation in ongoing relationship into reactive and proactive relationship. Finally he classifies proactive relationship into proactive cost improvement and proactive performance improvement.

![Diagram](image.png)

**Figure 8:** Types of Innovations for Logistics Service Providers (Wallenburg, 2009)

### 2.6 Effect of Innovation on Performance in Logistics Industry

Global competition and continued price and margin pressures are forcing companies to develop their logistics performance in order to fulfill their customers’ requirements and deliver services with higher quality at reasonable price (Wilding and Juriado, 2004). Customers are not just seeking for lower costs but also to use logistics services as competitive advantage in both domestic and international markets (Lieb and Bentz, 2005). Just to deliver standardized services and to provide them at lower cost is not sufficient for third party logistics companies; instead more customized, higher capabilities and value added
services are required to capture the customers. Therefore to provide more standardized services by 3PL firms, innovations and new services are crucial for these companies.

Third party logistic companies are focusing on their customers as their service users by developing their service capabilities, which brings variety of business opportunities and more customer accessibilities (Liu and Lyons, 2010). It is obvious that these capabilities have positive impacts on entire logistics performance, which the relationship between service capabilities and performance has been investigated by different researchers (Liu and Lyons, 2010). In all parts of supply chain; the aim is to increase efficiency and to satisfy the customers in each part of the chain (Lin, 2007).

Logistics performance has been defined as organization and firm’s “subset of larger notion of performance” (Chow et al., 1994 p 23). Another question in this field is that which indicator or indicators create the best framework for logistic performance among different indicators such as on-time delivery, customer satisfaction, flexibility, keeping promises and ‘low loss and damages’. One of the best examples as a framework to indicate logistics performance has been defined as “The extent to which distribution programs satisfy customers” (Rhea and Shrock, 1987 p35). Customer service is to response to the buyer needs with “customized, high quality products and delivery systems at reasonable price” (Tracey, 1998 p65).

Research about logistics are about finding relevant information and analyzing in order to solve problems in the field of logistics (Chow et al., 1994). It has been argued that there is not only one measurement for logistic performance since it is multi-dimensional and it depends on managers objective which to capture most part of performance dimensions which customer satisfaction is one of them (Chow et al., 1994).

Among different performance definitions one explains better to distinguish between efficiency and effectiveness which efficiency is “doing things right” and effectiveness is “doing the right things”. Authors on logistics performance have
divided performance measures into the hard and soft types of models. Hard model is about measures such as net income, accounting ratios in order to collect data while logistics has been assumed as profit center. They emphasize that this model is easy since it is easy to collect these kinds of data, which just requires defined ways of analysis (Chow et al., 1994).

Soft model measurements are those dealing with customer satisfaction, operating performance, distribution effectiveness, service capabilities and other perceptual ones. Chow et al. (1994) argue that for customer satisfaction measurement sets of mixed both types of soft and hard model needed.

Developing suitable performance measurement is base on kind of evaluations both quantitative and qualitative and which combinations of both individual measures provide better assessments in overall selected system (Rafele, 2004).

Innovation and performance has direct relationship regardless of business sector in which company operates (Flint et al., 2005; Wagner, 2008; Hult et al., 2004; Panayides, 2006). Bowersox et al. (1999) say that establishing a link between logistics performance to overall supply chain performance, is as difficult as finding cure for cancer. Providing higher service performance for customer requires well-designed process innovation; which is implementing of completely new or improved technologies, methods and procedures for desired goals such as higher service qualities and reducing related costs (Wagner, 2008). Also it has been argued that customers are not demanding same innovations and it depends on sectors where customers are targeted and it requires systematic approach toward generating, selecting and implementing innovations which also has been discussed by (Bessant and Tidd, 2007).
2.7 Gap in Previous Research

Innovation has been viewed broadly as technological advancement, new product or process development in relation to manufacturing industry. Quite a few authors have also discussed about service innovation. However, service innovation in relation to logistics services has been neglected. Especially, there is a need to have a holistic view of Innovation and innovation management process in third party logistics companies so that, a better knowledge can be developed for understanding similarities, differences and limitations of logistics innovation models as compared with general models of innovation.

2.8 Research Question

After reviewing literature and finding a research gap, Research Questions are formed as following,

1. What is third party logistics service innovation?
   1.1. Which different types of service innovations exist in 3PL companies?
2. What are the motivating forces for innovation in third party logistics?
3. How can innovation be managed in third party logistics?
   3.1. Which are the sources of innovation ideas in 3PL?
   3.2. How are innovation projects in 3PL selected?
   3.3. How are 3PL Innovation projects implemented?
3 Research Methods

In first step of our research we focused on the main concepts of innovation and innovation management extracted from original reference books. In the second step we reviewed relevant articles and studies about service innovation in third party logistics. In the last step of literature review we realized that there are some gaps in previous research related to service innovation in third party logistics, which has been discussed above.

In qualitative research one valuable source of information is to deploy the real case relevant to the research area. For this purpose we selected one well-established logistics company and interviewed the Marketing Director of that company in order to understand the process of innovation management and service innovation. Later we compared relevant literature with our findings to discover similarities and differences about service innovation and associated processes and derived conclusions.

3.1 Qualitative Research

Qualitative research is based on human perception and understanding of how things work and it has been called as one of best ways in gathering information through experimental methods rather than just to rely on measurements and numeric data (Stake, 2010). In qualitative research we use ourselves as an instrument in order to observe, explore, understand and use personal interpretations about actions, processes, contexts and meanings of that event (Stake, 2010; Merriam, 2009).

Merriam (2009) refers to researcher (as a primary instrument), interviews, observations and documentations as data collection methods in qualitative research.

This thesis is based on qualitative case study research since it could help us to investigate about “service innovation” in real life and to give a holistic view about the subject. Other reason is that it can bring additional insights about particular subject (service innovation in 3PL) rather than general view of innovation management in third party logistics firms. Merriam (2009) emphasizes that when
boundaries between context and “contemporary phenomenon” is not clear, one of best tools is to use case studies in qualitative research.

Gillham (2000, p11) counts following benefits of using qualitative methods i.e. it enables

- “To carry out an investigation where other methods - such as experiments - are either not practicable or not ethically justifiable.
- To investigate situations where little is known about what is there or what is going on. More formal research may come later.
- To explore complexities that are beyond the scope of more 'controlled' approaches.
- To 'get under the skin of a group or organization to find out what really happens - the informal reality which can only be perceived from the inside.
- To view the case from the inside out: to see it from the perspective of those involved.
- To carry out research into the processes leading to results rather than into the 'significance' of the results themselves.”

Since there is small amount of research done on 3PL innovation and field of study is immature therefore qualitative research methods are suitable for this type of exploratory studies.

### 3.2 Literature Review

Literature review is an essential part in the whole process of study’s design. Without studying the literatures related to the subject we might face difficulties while identifying the research questions that already might have been answered and it helps to decrease duplications (Rubin and Babbie, 2008). By reviewing original theories and previous research, brighter view can be obtained about future research and total validity of that study can be increased (Rubin and Babbie, 2008)
Numerous literature reviews have been done in order to have more in depth understanding of innovation management and related processes. In order to capture more dimensions of innovation and especially service innovation in third party logistics, lots of articles and research papers have been reviewed.

Only 9 results were found against the key word “3PL service innovation”. Literature that can directly answer to research questions was not found in the Google scholar and scientific databases. Which confirms the statement that there is very limited research done on 3PL service innovation.

3.3 Case Study
This research is based on empirical findings derived from case study by using empirical data collection methods. Qualitative research is often based on case studies in management research. Case study is an empirical inquiry, which gives a rich picture and information to answer exploratory, and explanatory questions, it helps us to investigate about contemporary phenomenon in real-life context when the boundaries between those phenomenon and context are not clear (Yin, 2003). Merriam (2009) also support, that case studies bring a holistic view, description and explanation about the subject. It can help us to explore the “phenomenon” interactions with real implementations and generation of theories.

Second motivation is that by reviewing previous research and literatures we could find evident that there are some weak understandings about service innovation and related processes in third party logistics companies. Third motivation is that by using case study we could improve our understandings about the data, which we gathered throughout literature review and interviews.

3.4 Why Green Cargo Logistics AB? (Criteria in Case Company Selection)
Innovation management requires a systematic approach within the organization and successful companies have deployed it as one of their tools to innovate and survive in highly competitive environment. For this purpose, is needed to find a company, which has implemented innovations internally (within organization) or externally to the market and customers. The organization’s aptitude towards
innovation is another criteria used in case selection process. Green Cargo Company has implemented various kinds of innovations, which have improved the service level offered to its customers. Green Cargo offers third party logistics services and has been ranked as one of three largest third-party logistics companies in Sweden. This has inspired us to find how they innovate and implement and what is the process and strategy of this company about service innovation. Another reason for selection of Green Cargo as case company is that Green Cargo have niche of sustainability, which is clear area for improvement and innovation and by selecting Green Cargo Logistics AB as case company, It was possible to have good access to required information and data.

3.5 Interview

Interview is a common tool in qualitative research. It helps interviewer to explore in-depth about the purposed area of research (Cassell and Symon, 2004). Interview helps researcher to develop his or her interpretations about the subject in “real-world” (Cassell and Symon, 2004).

Interview has different types such as telephone based, email based by using survey, and face-to-face. In this thesis two face-to-face interviews have been performed in order to decrease the probability of loosing information that may be a result in other types of interviews. Rubin and Babbie (2008) emphasized that face-to-face meetings and interviews decrease the number of questions which interviewee might has not understood or not answered.

Our interviews were based on open questions to increase the quality of information gained and to eliminate close answers to the particular questions. The marketing director of the company initiated the first interview meeting with a presentation of Green Cargo. Initial questions were general and used as starter of the interview, which we asked about company’s business area and the interviewee’s responsibilities in that company. Then we came up to more open questions structured about the research area, which you can find in Appendix.

Interviewee works as Marketing Director and board member of third party logistics services in Green Cargo Logistics AB. Main reason for choosing him as
interviewee is his central role in the company as he has been working with Green Cargo for about thirty five years and is well experienced in almost all area of management at top level of the company. He has been working as production manager and later on as sales manager of the rail mode of transportation and as project leader in development of intermodal solution. He has also been working as production manager, area manager and sales manager for third party logistics services. Interview meetings were conducted twice and spanned about 7 hours in total and between the interviews he was in contact with others in the company and came back with more information whenever it was needed. He has been interviewed in order to gain in-depth information about the company, innovation process and today’s challenging issues in logistic companies. Contact details of the interviewee are as follows.

Jan-Ola Wede  
Marknadsdirektör / Marketing Director  
Green CargoLogistics AB  
www.greencargo.com

3.6 Research Quality

Research’s design requires meeting logical line and including relevant statements. Based on this framework we can also judge the quality of research (Yin, 2003).

Four tests can be used in order to evaluate the quality of the research, which (Yin, 2003) divides them into:

- Construct validity
- Internal validity
- External validity
- Reliability

3.6.1 Construct Validity

Construct validity refers to the validity of measurement processes and data collection techniques. Yin (2003) calls it as most problematic issue when it comes to case studies since people believe that most of the times researchers or investigators fail to use appropriate measurements and “subjective” judgments are used to collect data. For this research we have used different sources of data such as company’s website, emails, face-to-face interviews, telephone conversations, and internal material, which was obtained in initial introductory
meetings. Interview discussions were audio recorded in order to minimize chance of missing important data. In last part of our case study we presented our findings to interviewee for review and received affirmation from the case company and interviewee made correction wherever we were in ambiguity.

3.6.2 Internal Validity
Internal validity is about finding casual relationship between different events by investigating that if different events lead to other events (Yin, 2003). During the interview we have asked many other questions that gave us better perspective about service innovation in third party logistics and covered the context of 3PL innovation. The company’s presentation about the firm’s activities, processes, implementations and problems raised other questions in related areas and subjects. In order to eliminate biases, which sometimes may happen in case studies, we tried to eliminate commercially impacted insights into the conversation. Instead of focusing on general questions more detailed and semi-structured questions have been asked to enhance the understandings about the company.

3.6.3 External Validity
External validity has been called as one of “barriers” especially in case studies (Yin, 2003). The problems arise when one case study is used as sample that investigator later use to come with generalization about the findings (Yin, 2003). In this thesis we have used some criteria about the case selection and previous case studies have been reviewed to test relevancy of subject and if it is applicable in other cases. The purpose of this study is to compare existing theories in real case study about service innovation and to enhance the insights of reader about the subject. However there are some limitations, since only one case has been studied therefore generalization is somehow difficult.

3.6.4 Reliability
Reliability is the most common test in research quality evaluation and ensures that by repeating same research with exact same company will obtain same results (Yin, 2003). It testifies that if investigator is following the procedures in his
or her research according to previous research and advices given by other researchers about the subject and case study (Yin, 2003).

Since individual character of researchers affect the case understudy therefore it is not always possible to perform reliability test. However, all unclear and confusing points have been documented before the interviews; all parts of interviews and conversation have been recorded in order to decrease the chance of losing data.
4 Findings

4.1 Introduction of Green Cargo AB

Green Cargo AB is a national and international logistics company owned by The Ministry of Finance, Sweden. Annual turnover in 2010 was about 6.4 billion SEK. Green Cargo is located at 100 locations throughout Europe and mainly in Sweden. Green Cargo has two areas of services. First is transportation of goods and second is provision of other third party logistics services. Transportation of goods is done by rail or road mode, which generates 72% and 13% of total revenue respectively. 94% of transportation is done by rail mode. 15% of total revenue comes from other third party logistics services i.e. warehousing, inbound transportation, pick and pack, outbound distribution, storage solutions, handling and fast moving goods distribution, customs clearance, and final production of some products on customer’s behalf.

Quality and continuous improvement are the core competences of Green Cargo. To benchmark their performance, Green Cargo conducts customer survey every 2\textsuperscript{nd} year. Green cargo has commitment to the market with low environmental impact. Of course cost efficiency is very valuable in the eyes of the customers but environmental impact of transportation has been ranked as most distinguishing factor in every evaluation by their customers.

Green Cargo AB has three subsidiary Companies; Nordisk Transport AB, Hallsbergs Terminal AB and Green Cargo Logistics AB. An introduction of each of subsidiary is as following.

4.1.1 Nordisk Transport Rail (NTR)

NTR is dedicated to international freight forwarding business. NTR sell, purchase and refines logistics solutions and rail-based freight with combination of other types of transportation modes. NTR has developed customized systems of freight transport for their large customers in steel, chemical and forestry industries. NTR has sales offices in ten countries within Europe.
4.1.2 Hallsbergs Terminal AB (HTAB)

“Green Cargo AB” and “Hallsbergs Commune” jointly own “Hallsbergs Terminal AB”. The aim of business was to facilitate synergies between road and rail transport by creating an infrastructure. An Intermodal was built near shunting yard in Hallsbergs and started operations in September 2003. Now transaction from this terminal has reached 25,000 trucks per year or nearly 70 trucks per day on the average. In 2008 HTAB built a warehouse with a total surface of 20,000 square meters to meet the customers need in this region.

4.1.3 Green Cargo Logistics AB

Green Cargo Logistics is the second largest third-party logistics service provider in Sweden. Main purpose of this subsidiary is to provide sustainable logistics solution to its customers while considering environment, social responsibility and profitability. Green Cargo Logistics AB is located at 5 places in Scandinavia i.e. Stockholm (Jordbro), Norrköping, Gothenburg, Helsingborg and Copenhagen with total warehouse surface area of 230,000 square meter. Since aim of this thesis is related to innovation in third party logistics companies. Green Cargo Logistics AB remains focal point of our study among all subsidiaries.

Green Cargo Logistics AB is serving following business segments.

Alcoholic Beverages

Green Cargo AB has become market leader in Sweden for provision of end-to-end services to Alcoholic Beverages industry. Due to distinct delivery service and punctuality Green Cargo has been ranked as best Distribution Company since 2005.

Services to this business segment include worldwide inbound logistics, storage, building display pallets for bag-in-box products, picking and packing, distribution to sales points. Green Cargo has developed expertise and infrastructure for automation of all process involved in service provision to Alcoholic Beverages industry.
Books and Media
Customized solution has been developed for Books and Media section. Green Cargo has different distribution setups for delivery in mail, parcel and less than container load shipments to customers. Green Cargo received order directly from customer’s branches and deliver according to order received.
Distinctive services to this segment include delicate handling of media related material, direct delivery to end customers, price tagging at final stage of supply chain.

Building Supplies and Home Improvements
Green Cargo provides innovative solution to Building Supplies and home improvement segment for optimizing inbound efficiency and for reducing associated lead-time. Shipments from southern Europe are made by rail to reduce environmental impact of transportation.

Customs Service
Green Cargo holds an Authorized Economic Operator certification by Swedish Customs Authority according to rules of EU therefore Green Cargo can store imported goods in its bonded warehouses and can expedite delivery service to its customers without any delay in customs procedures. This special service enables Green Cargo to provide a time and cost efficient flow of import and export of goods.

Electronics
Green Cargo is serving Electronics industry consisting of white-ware (small and large home and industrial appliances), brown goods (table top electronics), alarm systems and other electronic products. Delivery service is provided in combined form of general cargo, Parcel, and part load solutions with help of leading carriers. Efficiency in warehousing and picking solution of spare parts and components is ensured by use of modern and automated warehousing equipment.

Fashion
Green Cargo has specially designed automated facility in Gothenburg to serve Fashion and Garment Industry. Green Cargo Logistics AB claims that they are the only third party logistics service provider in Nordic who can meet the demands of
lead-time in fashion industry. Special services include provision of steam tunnel finishing for flat packed garments to hanging garments. This particular innovation of service has become core competence of Green Cargo Logistics AB in serving to major part of fashion industry.

**Fast Moving Consumer Goods**

Green Cargo has designed handling, storage and distribution services of fast moving consumer goods, which are suitable according to Nordic markets. Value for money and high standard are essence of these services. Sophisticated audits are organized by quality assurance authorities and customers to insure quality of third party logistics services at Green Cargo.

**Sports and Leisure**

Complex structure of articles and imports from worldwide markets makes this segment needs more specific. Green Cargo provides final processing services (for example inflation of footballs), building of display pallets, labelling, picking and packing, and automated inbound process.

**Tires**

Green Cargo has developed the expertise and posses the equipment to provide value added services in the tires industry. Specially designed services include studding nails on winter tires, mounting tires on rims and tire balancing. These operations are performed by both semi automated and robotized procedures.

**WMS Systems**

Green Cargo has a modern IT solution (Warehouse Management System – WMS) for total integration between Green Cargo warehouses and its clients. Due to this value adding competitive advantage every single activity are recorded and monitored at both client and Green Cargo’s end, which facilitates full atomization.

**Control Tower**

Control Tower is a web portal provided to its clients by Green Cargo so that they can easily monitor logistics flow of their products. This tool can also help to generate different reports for statistical data. Customers can directly monitor their stocks and orders. Therefore this tool helps them to monitor the agreed Key Performance Indicators (KPI) and plan in better way.
4.2 Innovation at Green Cargo Logistics AB

“Innovation is the way that we use to find out different technical solutions for our customers. That can be handling techniques, IT solution like Control Tower and relationship between our customers and us. 3PL in Sweden is growing by 6% each year and Green Cargo has been growing with 15% per year (in average) the last 5 years. Our customers choose us because we have high quality, cost efficiency and continuous improvements. Employees dedicated to customers create a close relationship with customers, which also help us to create new solutions.”

“Value added services are very important in third party logistics. New solutions to increase service efficiency are service innovations for us”

Above are definitions of Innovation and service innovation, which were deduced from the interview as in words of the interviewee in Green Cargo. While discussing on motivation for innovation interviewee brought following points forward

- To keep customer in business and to expand customer base
- To remain ahead of competition by achieving operational and economic efficiency
- To ensure quality, transparency and continuous improvement
- Environmental concerns

**To keep customers in business and to expand customer base (Market)**

Customers are lifeblood of any business and to keep them within business is main motive for innovation in Green Cargo logistics. According to interviewee Green Cargo lost only two customers in past five year although the reasons was drop in volume of production and hence logistics activity. If Green Cargo does not strive for creativity Green Cargo can keep losing customers. In contrast to this Green Cargo Logistics saw a 22% of business growth in 2010 and new markets are being opened up continuously.
To remain ahead of competition by achieving operational and economic efficiency

Green Cargo Logistics is second major third party logistics service provider in Sweden and fourth largest in Nordic countries and have the strongest growth rate among all competitors. To survive in today’s highly competitive environment, Green Cargo try to bring new solutions and to find optimized ways in delivering services among other competitors. This objective plays role of both driving force and motivating factor.

To ensure quality, transparency and continuous improvement

Quality, transparency and continuous improvement are core competence of Green Cargo and to ensure that these competences are held all the time, Green cargo brings novel approaches in logistics business. Examples of innovations at Green Cargo are presented in a separate section later.

Environmental concerns

Green Cargo is based on the business concept of sustainable logistics solutions that account for society, the environment and profitability. And major reason for Green Cargo being a choice to its customers is environmental concern throughout supply chain. Concept of intermodal transportation is helping Green Cargo to reduce overall environmental impact of transportation. As shown in Figure 9, this novel concept of transportation not only helps to reduce lead-time for customer but also helps to reduce CO₂ emissions from 8 to 38 grams per net ton- km transported as compared with diesel trains and trucks.

Figure 9: Carbon Dioxide Emissions for Different Modes of Transport (Adapted from Green Cargo Logistics AB presentation)
4.2.1 The Innovation process at Green Cargo Logistics AB
Most innovations that occur at Green Cargo are incremental, usually small steps are taken in order to bring a visible change in the system. Incremental innovation is important because it provides flexibility for managing limited resources of time, people and money. One big reason that most of the innovation are incremental lies in the fact that each customer assignment is kept as streamlined with other customers as possible in the same warehouse to create flexibility and general competence which gives higher cost efficiency overall. There are some times when radical innovations happen for example Control Tower was introduced as a new tool for connecting different data bases from transporters, customers, warehouse management system, order handling system and Swedish Customs Service. The purpose of Control Tower was to provide a clear picture of whole supply chain to their customers. Although Control Tower can be described as a radical innovation when it was introduced but later new features, which were customized as per demands of customer, are examples of incremental innovation.

In the innovation process at Green Cargo the Excellence group plays central role in the company. As shown in Figure 10, Excellence group consists of persons from four areas of expertise: one person specialized in material handling techniques, second specialized in layout and design, third specialized in transport and fourth specialized in production of logistics services.

Role of excellence group is to engage in development of innovative services and to make liaison with key players in innovation processes. It provides linkage for key elements of innovation i.e. customers, organizational strategy and organization itself.
As shown in **Figure 11**, Excellence group interacts internally (within organization e.g. marketing department, production department, quality control and assurance, production department, Information technology department, human resource department, regional offices and most importantly to finance department) and externally (outside of organization e.g. universities and technical consultants) for new ideas and solutions to novel problems.
The role of the Excellence Group is further explained in following words of the interviewee:

“We interact with many consulting companies and discuss issues and contact with universities for future trends. We are also participating in logistics conferences to benchmark our status. Ideas also come by visiting some of the most successful logistics companies and gaining knowledge from their activities. We co-generate ideas with our customer in our logistics development meetings. We also invite technical consultants who are expert in technical solutions. It makes interactive environment which is a very good source of rich ideas.”

Logistics service development process at Green Cargo consists of three levels namely Operate, Improve and Develop (see Figure 12). Green Cargo Logistics team holds Logistics Development meetings twice a year with each customer to discuss on following agenda

- Open Questions
- Information from customers
- Information from Green Cargo Logistics
- New Opportunity of Cost efficiency
- Contractual Issues
- Contract Development
- Report of On-going projects
- Other Issues

Most of ideas are generated from interaction between area managers and customers, when they ask for certain services. 85% of these services are initially developed and operated at regional offices at the Operational level. If initial solution works fine then it is marketed as a new service and is communicated to head office. Otherwise if technical persons at regional office cannot find a solution to some certain problem they refer it to Excellence Group, which works under Production Director. 12% of new services come as result of interaction of Excellence Group with Internal and External Linkages, where ideas are refined, modified and improved; this level is called the Improvement level. Only 2% to 3% of ideas need a lot more technical, financial and strategic resources therefore these ideas are discussed at top management in the Development level.
Development projects are selected on following criteria

- Customer’s interest in project (Are customers willing to pay additional price resulting from cost incurred in project or are customer willing to prolong the contract due to increased setup cost)
- Financial aspects of the project (This is again related to first criterion, do Green Cargo have enough resources to start and carry on this project and will Green Cargo be able to recover this cost)
- Technical requirements (What are technical requirements of the project?)
- Internal Competence (Do we have required resources in terms of human resource, expertise and potential to develop it)

4.2.2 Innovation Strategy at Green Cargo Logistics AB

While talking about Green Cargo Logistics AB’s strategy on innovation interviewee said:

“We have different strategy for different types of Innovation. Generally, Innovations are divided in four types at Green Cargo Logistics AB, that are IT related innovations, Customer oriented Innovations, Future oriented Innovations and Internal Innovations. Although we can define a general process of innovation management but in terms of sources of ideas and involvement of top management; strategy differs according to type of innovation”
The different kind of innovation processes and strategies are described below

**Future Oriented Innovations**

These Innovations are driven by Green Cargo Logistics AB’s vision and business concept i.e. Green Cargo will be leading logistics company that builds on and contributes to sustainable development and accounts for society, environment and profitability. Most of ideas for this kind of innovation come from seeing future trends in the industry. In this type; universities, logistics conferences and logistics related magazines are main source of ideas. These ideas are discussed and analysed properly in Excellence group with help of technical experts and are implemented with high involvement of top management. Most of these innovations are radical in nature for example development of Intermodal transport solution was future oriented Innovation.

**Customer Oriented Innovations**

In this type of Innovations, customer are main source of ideas and development process in this type of innovation begins either by request of the customer or by a proposal from Green Cargo to its customers. In this type of innovations, top management have medium level of involvement. Most of the customer-oriented innovations are incremental in nature.

**Internal Innovations**

Source of ideas for this type of innovation are employees of Green Cargo itself. These innovations may refer to change in organizational structure, way of approaching customers, new ways of performing specific tasks or development of new tool for performing tasks. This type of innovations can be defined as improvement projects. Most of decisions or made by regional manager in this type of innovations.

**IT Related Innovations**

Green Cargo Logistics AB has dedicated team for IT solutions. This team keeps an eye on developments related to information technology outside the organization
discuss those developments internally and interacts with customers, and IT consultants. Top-level involvement in IT related development projects are medium to high level according to investment decisions and potential return on investment.

4.2.3 Role of Customer in Innovation Process

Being main motivators of innovation, customers are focal point of whole innovation process. Green Cargo Logistics have very close relationship with its customers. Most of ideas are co-generated/evaluated with customers in logistics development meetings. Key account manager work closely with big customers in order to find the best solution for problems highlighted by customers. Financial decisions are also based on customer’s willingness to pay for a particular innovation project. Innovation ideas are evaluated in excellence group. If a potential project is useful for many customers Green Cargo invest itself and recover project cost by charging the development cost in final price of service generated in result of that particular project and if potential project is useful for single customer a long term commitment from that particular customer is needed (i.e. prolonging of the contract) to make a reasonable depreciation of the investments needed.

4.2.4 Examples Of Under Process, Failed and Successful Projects

Green Cargo Logistics is currently working on a project for providing third party logistics services to an online shoes store “Brandos” (web shop). This project needs knowledge and technical expertise which Green Cargo Logistics’ team have not had before. Volume of transaction is expected to be in millions of shoe pairs each year and required service level is quite high. Since online selling, is all about customer confidence therefore error in deliveries cannot be tolerated. Nature of business requires special handling techniques and IT system. Order flow is expected to be very high which will leave less room for replenishing inventory and picking orders therefore new system should be able to multi pick and replenish at same time. Solutions to this problem are under discussion in Excellence Group, consultants and with customers.
While explaining the service development process interviewee referred the following famous quote by Charles Barkley

“If you are afraid of failure you don't deserve to be successful.”

Green cargo started a project for implementing new Warehouse Management System (WMS) in 2007 and within 8 months Green Cargo realized that it is not worth doing because of low return on investment (ROI) therefore they turned down that project. Usually projects are not turned down this way and they go through several rounds where they are discussed with consultants and improved for implementation.

Examples of successful projects are as following:

- Studding tires is one of successful project, which has been implemented in response to a specific customer demand. Instead of only transporting tires, the customer demanded to co-manufacture the tires with Green Cargo in order to optimize lead-time and related transportation cost. Green Cargo has been engaged in production process of tire industry by delivering new services (Studding, mounting on rims, wheel balancing and transporting the tires).

- Green Cargo Logistics has niche for environment friendly transportation across the supply chain for their customers. To achieve objective of easy, reliable, door-to-door, comprehensive and environment friendly solution of transportation Green Cargo adopted Intermodal Transportation system (mix of rail and road mode) as an alternative to truck-only (which was not environment friendly and cost efficient) and rail only (which cannot fulfil the objective for door-to-door deliveries). Hallsbergs Terminal AB as a combi-terminal for road and rail freight was opened in 2003. Aim of this terminal was to create synergies for intermodal transportation.

- Traditionally 3PL companies were serving fashion industry to the extent of transportation, storage and inventory management but Green Cargo added special services which included opening of wrinkled garments from boxes, hanging them, steam tunnelling, repacking in hanging form and...
delivering to customers. This way Green Cargo became competitive for serving fashion industry.

- Cutting and delivering films for cinema throughout Sweden, labelling, packing and delivering books and media related items as parcels directly to customized locations according to order received at stores.
- Green cargo designed android application for their customer to check their inventory stock status online, directly on their mobile phones.
- Green Cargo has tested RFID technology and provides this solution on demand to their customers but the use of RFID has only started in small areas within logistics so far.
- Novel approaches in product handling techniques like pick by voice technology, handheld transaction recording devices, automated storage and retrieval system are being used at Green Cargo.
- Green Cargo developed customer service call centre in which customers are answered in their native language.
- Green Cargo is on demand doing management functions like procurement management in beverage industry and inventory control and management (alerts customer if inventory level drops behind a certain stock quantity).
- To shorten the lead-time and to provide the convenience to its customers, Green Cargo has got Authorized Economic Operator (AEO) certification from Swedish Customs Authority under the rules of European Union.
5 Discussion and Analysis

In this chapter, finding from the case company “Green Cargo Logistics AB” will be discussed in connection with theory and an analysis will be made to find answers of our research questions accordingly.

5.1 Third Party Logistics Innovation

In Literature Review of this thesis, Innovation was defined as newness in products, process and/or organizational practices, which create value for business. Klink and Visser (2004) emphasized on need of innovation in third party logistics and highlighted innovation as tool for maintaining profitability. Wagner (2008) stated that third party logistics innovation takes place, when customers of 3PL services find a new or improved service (which improves their productivity and/or profitability). Green Cargo Logistics AB sees 3PL innovation as a way of finding different technical solutions for their customers while at the same time they see 3PL innovation management as a process for bringing new services and/or improving existing services, which add value and increase service efficiency of their company. Since, Klink and Visser (2004) and Mena et al. (2007) describe Logistics innovation in same way. It might be seen as agreement on following definition of 3PL innovation i.e. third Party Logistics innovation can be anything related to new or improved logistics services, which is seen as or leads to value added services for its customers. Flint et al. (2005) and Lieb and Bentz (2005) highlight technological aspects of third party logistics innovation i.e. use or development of new technology, which leads to enhancement of service efficiency.

All different views and aspects of 3PL innovation discussed above and found from literature and Case Company “Green Cargo Logistics AB” may lead to following definition of third party logistics innovation

Third Party Logistics innovation is new way of providing a service to its users, newness of service itself and/or use of new technology, which ultimately fulfill the purpose of existence of a third party logistics company in an efficient manner.
To understand above definition one must know, what is the purpose of existence of third party logistics companies? Schary and Larsen (1995) say that third party logistics companies exist to provide solution to problem in the supply chain by incorporating multiple logistics services that are managed solely or together. Customers perceive third party logistics companies as specialist in logistics solutions and outsource logistics activities to third party logistics companies so that they can emphasize on their core competence (Klink and Visser, 2004; Lin, 2007; Lieb and Bentz, 2005).

Innovation in 3PL greatly effects in terms of gaining market share as it was found from our case company that while market growth in 3PL industry was at 6% per year in Sweden, Share of Green Cargo Logistics AB was growing at 15% per year (at the average in last 5 years).

5.2 Classification of Third Party Logistics Innovations

From literature review and case study it is found that Innovations can be classified in many different ways according to objective of classification. One might wonder that what can be an objective of classifying innovations into different types. Bessant and Tidd (2007) classified innovations in 4 major types i.e. Product, Process, Position and Paradigm innovations and further divided each of them to two types i.e. Incremental innovation versus Radical innovations. This classification was made to understand the innovation space and to understand what can be dimensions of innovation for an organization. As shown in Table 1 (see page 21), in literature relating to logistics innovation, three authors were found, classifying innovation in logistics. Wallenburg (2009) classified innovation mainly in two types ‘internal innovation and customer related innovation’. He further divides customer related innovation in ‘Single Customer related innovation and Multi customer related innovation’. Wallenburg (2009) further classified single customer related innovation in ‘innovation at beginning of relationship episode with customer and innovation for ongoing relationship’. This division of logistics innovation can be applied to multi-customer related innovations as well e.g. ‘innovation at beginning of relationship’ with multiple customer can be a new mode of entry in specific market and ‘innovation in
ongoing relationship' with multi customer can be seen as introducing new service or improving services for the existing market, however, Wallenburg (2009) do not discuss about this and goes on dividing ‘innovation in ongoing relationship’ in ‘proactive innovation’ and ‘reactive innovation’. Proactive innovation is that, which takes place in anticipation of potential benefits associated with innovation contrary to reactive innovation, which are resulted as reactions of some problem are asked service from customers. Again these two types of innovations can also be derived for purely internal innovations as well e.g. from examples of innovations in Green Cargo Logistics AB, use of pick-by-voice technology is example of Internal proactive innovation and reactive internal innovation can be some new way of doing things when they encounter some problem with existing procedures. Both reactive and proactive innovations can be subdivided in ‘cost improving (cost saving)’ and ‘performance improving’ innovations. Above whole discussion can be summarized as Figure 13

![Figure 13: Classification of Logistics Innovation a Refined Model](image)

Mena (2007) divided innovation in logistics in two type namely technological and administrative innovation. This is another perspective of classifying innovation
Technological innovations are those, which involve use of or invent of new technological solutions. This may include new IT solutions (Control Tower, Warehouse Management System etc.) or new machinery (Automated sorting system, electric Vehicles, Robotics etc.). Administrative innovations are new way of managing operations, approaching customers and handling customer complaints etc.

Germain (1996) classified logistics innovations in three types’ i.e. Radical innovations, Intermediate innovations and Incremental innovations according to degree of novelty-involved innovation. He classified logistics innovations to show in what ratio these different types of logistics innovations take place and came up with results showing that Incremental innovations are more than Intermediate innovations, which in turn are more than radical innovations. This is also supported by our findings and there is a logical reason. Since radical innovations require more resources, return and risk on investment both are high therefore logistic companies prefer to take smaller steps and result in more examples of incremental innovations.

While discussing Innovation strategy at Green Cargo Logistics AB, Interviewee divided innovations in four different types namely ‘Future oriented Innovations’, ‘Customer oriented Innovations’, ‘Internal Innovations’ and ‘IT related innovations’. In findings chapter (see page 42) details on this classification is presented already. It is ok to classify Innovations in different types as far as they serve the purpose of classification but there is no classification that can be taken as exclusive for example Figure 14 shows that a single innovation can be of different types.

![Figure 14: Green Cargo Logistics AB's Classification of Innovation](image)
5.3 Drivers of Third Party Logistics Innovation

Technological advancement, spotted opportunity for business growth, threat from competition and customer demand has been discussed driving forces for logistics innovation in general. Lin (2007) stressed that there are two types of factors, which lead to innovation in logistics. First are internal factors for example organizational encouragement and quality of human resource (who can come up with innovative ideas). Second are external factors for example governmental support, market uncertainty and customer pressure. At green Cargo as described by Interviewee there are four motivating factors or driving forces for innovation i.e.

- To keep customer in business and to expand customer base
- To remain ahead of competition by achieving operational and economic efficiency
- To ensure quality, transparency and continuous improvement
- Environmental concerns

Although, first three driving forces have been discussed in literature to some extent and are very important; Fourth force that is “Environmental concerns” might be considered as a new driving force and is unique to Green Cargo Logistics AB in Swedish 3PL industry. They incorporated this factor in their vision statement and named their organization after that vision. This force drove concept of developing intermodal transport solution.

So, this factor has been shown by the case company to be not only a successful driver in 3PL Innovation but also a successful way to build a 3PL company on. Environmental issues have increased in importance in the world and the case company has shown that it can successfully be incorporated in 3PL and in 3PL innovation.

In Green Cargo Logistics AB, it was found that most of customer related innovations are generated as result of customer interaction with the excellence group. Green Cargo Logistics AB holds development meetings with customers and assesses their needs. Although a motivation for innovation in logistics can be, to expand service offerings to the market so that new customers can be
attracted but in our case company main motive was to keep their customer in business as interviewee said

“Customers have tendency to switch to other 3PL service providers but as far as we are fulfilling their needs, we expect our customer to stay loyal to Green Cargo Logistics AB”

5.4 Innovation management process in Third Party Logistics

In the literature review section of this thesis, generic models of innovation were presented and it was found that Bessant and Tidd (2007) presented most comprehensive model of innovation management process. This model include 6 essential elements for managing innovation namely

- Generation of ideas
- Selection of Innovative ideas
- Implementation of Innovative ideas
- Organization and People
- Commitment of Top management
- Proactive linkages (In this thesis, this is replaced with Internal and External Linkages)

A debate on, opening up innovation process beyond organization boundaries has been started and Chesbrough (2003) presented open innovation model. From our case company, it was found that 3PL companies can also open innovation process to the extent of inflow of useful knowledge i.e. when they gather ideas from research conference, universities, consultants, by involving customer in their innovation activities and by studying competitor’s practices. Since in open innovation outflow and spinning off is mainly a concern related to technological or product innovations and our case company is not involved in product innovations therefore they do not have much to out-license.

In literature review section, it was decided that Bessant and Tidd model would make basis as reference for our investigation in case study. Six elements of
Bessant and Tidd model in relation with innovation process in third party logistics can be discussed as follows

### 5.4.1 Generation of Innovative Ideas in Third Party Logistics

Ideas can either come from frontier research, from another context, from inspirations and by listening to users or by making combinations of new ideas with existing solutions and by visualizing alternative models for future (Bessant and Tidd, 2007). In Green Cargo Logistics AB, it was found that innovative ideas come from interaction of the excellence group with internal and external sources e.g. internally from production, marketing, IT, Human Resource, Quality Control, Branch offices and externally from Technical consultants, Universities Collaborations, Logistics conference proceedings and Magazines. Customer’s role in idea generation cannot be neglected. It was found in literature review that most successful innovations are customer centric therefore a very close relationship with customer is inevitable for coming up with successful ideas. This is supported by the case company also as customers are considered as most important player in innovation process at Green Cargo Logistics AB.

In case company it was found that whole Innovation management process revolves around Excellence Group who keep customer at a side, remain focused on them and gather ideas / solution by interaction with internal and external sources (like Production, Marketing, IT, Human Resources, Quality Control, Different Branch offices, Universities, Technical Consultants and Logistics Conferences etc.). Idea generation process can be considered analogically as Figure 15: Peacock of Innovative Ideas Generation, where interactive linkages represent feathers of Peacock and Excellence Group representing head of peacock (which discusses and analyzes ideas with Interactive linkage). Whole body of peacock of innovation stands on ground of customers therefore customers are most powerful and valuable source of innovative ideas.
5.4.2 Selection of Innovative Ideas in Third Party Logistics

Second element of Innovation management process is selection of Innovative ideas. Innovation process is full of guesswork and uncertainty. The only way out ‘whether or not an idea is good’ is to develop it (Bessant and Tidd, 2007) but if an organization starts selecting every idea to test whether it is good or not and if they have committed a wrong selection, they can run out of business. Limitation of sources should always be kept in mind while doing selection of innovation project.

From case company, it was found that consideration of return on investment (ROI) is very important while selecting development projects otherwise it can lead to failure as found in example of failure in implementing new warehouse management system.

Literature says that a single innovation project does not define future of any company; a set of projects does define; therefore companies need to make an
aggregate project plan (Wheelwright and Clark, 1992). Importance of having a
good selection process can be understood from following words of Bessant and Tidd (2007 p10)

“If we are going to succeed we need to build rich and varied ways of picking up on all the potential trigger signals which offer us interesting variation opportunities”.

In our case company project selection is made in more organized way i.e. projects are discussed in Excellence Group and with customers in several meetings before implementation and following criteria is used in selection of development projects:

- Customer’s interest in project (Are the customer willing to pay additional price resulting from cost incurred in project or are customer willing to prolong the contract due to increased setup cost?)
- Financial aspects of the project (This is again related to first criterion, do Green Cargo have enough resources to start and carry on this project and will Green Cargo be able to recover this cost)
- Technical requirements (What are technical requirements of the project?)
- Internal Competence (Do Green Cargo Logistics AB have required resources in terms of human resource, expertise and potential to develop it)

Green Cargo Logistics AB classifies innovation projects in different types and evaluates and allocates resources accordingly. Furthermore from above selection criteria, it seems that they do not design their project selection strategy for balancing risk and reward between different innovation projects rather they are very flexible and adaptive to circumstances, contrary to approach of making aggregate development project plan and having single strategy as found in literature and presented above. This flexible strategy and case to case selection decisions seems to work fine in 3PL companies as Green Cargo Logistics AB sets a successful example in this regard.

5.4.3 Implementation of Innovation in Third Party Logistics

Bessant and Tidd (2007, p10) shared their concern in implementation process in these words “even if we can steer a project through rocks of making it real in terms of new product, service or process proposition there’s no guarantee that
people will adopt it and it will diffuse widely”. Therefore an escape route should always be available. In Green Cargo Logistics AB, Interviewee put forward example of failure of implementing new warehouse management system. They discovered it very early that this idea is not going to be successful. They closed further development on that particular project. Learning from experience is very important because it helps in making wise and just choices. Implementation process at Green Cargo Logistics AB takes place in three levels, new Ideas are tested at regional offices on small-scale real world model. And 85% of innovations are resulted from these small-scale experiments. This first level is called ‘Operate’ level in Green Cargo Logistics AB. Twelve per cent (12%) of new services come as result of interaction of Excellence Group with Internal and External Linkages, where ideas are refined, modified and improved; this level is called the ‘Improve’ level. Only two to three per cent (2% to 3%) of ideas need a lot more technical, financial and strategic resources therefore these ideas are discussed at top management in the Development level. This implementation process in case company is based upon prototyping of new logistics services and implementation is done after a success has been seen in prototypes.

5.4.4 Innovative Organization
In an innovative organization bureaucratic obstacles and inter-organization communication difficulties have been minimized in order to open gate to everyone’s new ideas (Bessant and Tidd, 2007). In case company, innovative organization is concentrated around Excellence Group, which plays central role in innovation process. Direct interaction of Excellence Group with rest of the organization and with external elements including customer, promote innovative culture and creativity by removing bureaucratic obstacles and improving inter-organizational communication. Due to its openness and multidimensional interaction, such innovative organization as found in our case company helps company to avoid falling in chaos trap.

5.4.5 Strategic Leadership, Direction and Deployment
Strategic leadership and direction is very important in management of innovation process. An organizations vision defines its strategy and help to select and
implement innovative ideas. Green Cargo has been successful in winning customers confidence for low environmental impact because they had defined in their concept and vision that they are accountable for society, environment and profitability. This concept gives them direction to think for new ways of providing their customers environment friendly solutions.

Green Cargo Logistics AB has different strategy for different types of Innovation i.e. innovations are divided in four types that are ‘IT related innovations’, ‘Customer oriented Innovations’, ‘Future oriented Innovations’ and ‘Internal Innovations’ and they deploy resources for innovation projects with respect to particular circumstances for each innovation project. Contrary to general belief that there must and are only one kind of strategy for innovation in companies, it was found that a strategy often may be very flexible for different circumstances, different kind of products or services and for different context. Furthermore, it seems like the excellence group are quite free and trusted to handle innovation issues, relatively independent from influences from the board or managing director.

5.4.6 Interactive Linkages
Use of external and internal linkages helps an organization to develop a rich source of innovative ideas and helps the organization to manage the process in a better way. As in the words of Bessant and Tidd (2007), innovation is not solo act. In our case study it was found that Green Cargo Logistics AB consult with technical consultants, take ideas from universities, actively arrange meetings with customers and make linkage of external environment with internal departments to come up with innovative solutions. In Bessant and Tidd model of innovation management sixth element of the model was said to be proactive linkages but in this study it is found that these linkages can also be reactive e.g. when Green Cargo logistics AB were stuck in problem of implementing Warehouse management system they hired consultants and made reactive linkage to help them improving the solution.
6 Conclusion

This chapter concludes whole case study to present holistic view of 3PL Innovation and to answer to research questions. Conclusion is drawn from above ‘Discussion and Analysis’ chapter, which was based on literature review and findings from case company.

Today third party logistics companies are involved in innovation management process to bring value added services, to cut the costs and to win their customers confidence. Innovation does not only help third party logistics companies to survive but also to prosper. An innovative 3PL company has better prerequisites to stay competitive and increase its markets share through a better ability to serve its markets with new better logistics services. Third party logistics innovations can be classified in many different ways according to objective of classification. In logistics innovation related literature, three authors have classified innovation in different categories as presented in Table 1. A widely accepted and referred classification of logistics innovation was presented by (Wallenburg, 2009). It was found from this study that Wallenburg’s model for classification of logistics innovation could be refined to show relationship between different types of innovations in third party logistics companies. As shown in following Figure 13, here are mainly two types of innovations namely ‘Internal innovations’ and ‘customer related Innovations’. Customer related innovations could be divided into further two types of innovations namely ‘Single Customer related innovations’ and ‘Multi-customer related innovations’. Both types of customer related innovations could be further categorized as ‘Innovation at beginning of relationship’ and ‘innovation in ongoing relationship’. Both purely ‘Internal Innovations’ and ‘innovation in ongoing customer relationship’ can classify as proactive and reactive innovations that ultimately are in form of cost improving and performance improving innovations.
It was also found that different classifications of innovation can overlap and no single innovation type can be excluded from other types of innovation classifications. This shows that single innovation at same time can be recognized in different classifications.

Literature identifies technological advancement, spotted opportunity for business growth, threat from competition and customer demand as driving forces for logistics innovation in general. But from this study, new factors namely organizational vision and environmental concern have also been recognized as a driving force, which leads to innovation in third party logistics. Also, environmental issues have increased in importance in the world and the case company has shown that it can be successfully incorporated in 3PL companies and can derive environment related innovations in 3PL.

Innovative ideas are generated from interaction of organization with internal and external sources e.g. internally from production, marketing, IT, Human Resource, Quality Control, Branch offices and externally from Technical consultants,
Universities Collaborations, Logistics conference proceedings and Magazines. It was found in literature review that most successful innovations are customer centric therefore a very close relationship with customer is inevitable for coming up with successful ideas. Case company also supports that customers are considered as most important player in innovation process.

After having innovative ideas next thing in innovation management process is to select best development projects because scarcity of resource limits organizations to try all potential ideas. Literature says that a company should have a single strategy for selecting a mix of innovation projects and should make aggregate project plan. Contrary to literature it seems from case company that flexible and adaptive selection strategy also works well. Anyhow in selection process, presence of good selection criteria is essential for balancing risk and rewards associated with innovation project. In 3PL innovations good selection criteria may include

- Evaluation of customer’s interest in project,
- Consideration of budget plan and return on Investment (ROI)
- Consideration of Internal competence
- Consideration of technical requirements of the project

Most significant criterion among above mentioned selection criteria is consideration of return on investment and budget plan since money invested in wrong projects may lead to failure and ultimately to closure of business.

As found from this study, it can be recommended that prior to implementing the selected innovative ideas; a small scale test should be conducted in order to avoid risks associated with development projects. An escape route should also be available in case of failures and organizations should keep record of failed projects so that same mistakes can be avoided in future.

For successful management of innovation process, creativity within organization can be promoted by removing bureaucratic obstacles and by improving inter-organizational communication. From this study, it can be highlighted that a small flexible unit can play a central role in this regard. Bessant and Tidd (2007) call such unit as an innovative organization. Direct interaction of such small flexible
unit with rest of the organization and with external elements including customer, promote innovative culture and creativity. Due to its openness and multidimensional interaction, such innovative organization as found in our case company helps company to avoid falling in chaos trap.

Strategic leadership and direction is also very important in management of 3PL innovation because an organizations vision defines its strategy and help to select and implement innovative ideas. In 3PL innovation management process, existence of effective interactive linkages has also been identified as very important factor. Linkages should be reactive as well as proactive to expedite and control innovation management process.

7 Future Research

Since this study is based on single case company the same study can be expended to several similar companies to find if any other type of strategy toward service development has been used in third party logistics. Innovative organization has been identified as one important factors in development of services so further research shall be conduct in order to see different examples of innovative organizations and the way their work. This particular study shows that a flexible and adaptive innovation management strategy works well in our case company and further research can be done to validate this unique finding. Also it can be beneficial to research on how do different types of innovation affect the organizational strategy toward innovation.
References


Appendix

Following questions were asked in semi structured interview.

Group 1: Introductory questions

- Please give us information regarding your company’s history
- How long have you been working in the company?
- What is your company’s main business?
- Which responsibilities you had during this period?
- Which responsibilities were more challenging and required much more work?
- What are the company’s core competences?
- Which kinds of transportation modes are you using?

Group 2: General questions on Innovation

- What do you consider as Innovation?
- What do you consider as service innovation? Can you give some examples?
- Do you think that innovations are more incremental or radical?
- Why incremental steps and phases needed?
- What are examples of radical Innovations? How did they happen?
- Is there any difference between these transportation modes? (From innovation perspective)

Group 3: Questions related to motivation of Innovation

- What does motivate your company to innovate?
- What are main driving forces (market pull or market push)?

Group 4: Questions related to Innovation process

- How do you come up with new ideas? i.e. what are sources of innovative ideas?
- How innovation occurs in green cargo with detail information
How you select among those ideas? Can you describe more about process?

How do you implement innovative solutions in Green Cargo?

Do you deploy other external actors in process of innovation? How they involve?

Is there customer involvement in the innovation process? How are they involved?

Can you give us more details about excellence group? How they decide about ideas?

Which resources Excellence group use in order to make ideas happen?

What kinds of resources are needed when converting ideas into projects?

What Criteria are used in ideas selection?

Innovative ideas generation is pursued systematically or is the result of serendipity?

Can you give more information about those 3 levels in Implementation process i.e. Operate, improve and develop?

Do you plan for and look forward to innovate?

**Group 5: Questions related to organizational Strategy about Innovation**

What is your company’s overall vision?

How do you introduce your new innovations to the market?

Can you give some examples of successful innovation projects?

Can you give some examples of innovations that were unsuccessful?

What is your strategy to deal with those failures?

Do you have escape plan or action plan in term of risks and failure?