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Adding Value To The Next Generation Mega E-Fulfilment Centres

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1. Summary

The next generation fulfilment centres are large logistic properties that respond to the growth of business to consumer e-commerce. To respond appropriately, these custom-made properties have to provide an optimal environment aligned to the e-retail strategy to generate as much productivity, cost reduction and flexibility as possible. This results in increased customer satisfaction for today's e-retail consumers that prioritize e-retailers based on low costs, high speed and large flexibility of their parcel delivery services. However, the external logistic property manager is not able to provide an optimal environment for the 3PL-er by translating their demands into property requirements, because they currently do not posses sufficient knowledge about the primary logistic processes that happen in and around the next generation mega e-fulfilment centres and are not proactive and interactive enough. Because the external logistic property manager is not able to add value to this distinct type of property, they can be considered as useless in their current role as connector between user (3PL-er) and owner. In contrast to the external logistic property manager, the in-house property manager of today's 3PL-er does possess the required extensive and specific logistic knowledge to add value to the productivity, cost reduction and flexibility of their own performance by providing an optimal environment via adequate logistic property management. The main pro's to do property management in-house for the 3PL-er is to have more control over their processes, directly be able to handle when there is something wrong (providing continuity of production) and because they know the best what their clients want and how this should be translated into property requirements. This finding has its consequences for the future role of the logistic property management profession in the B2C e-commerce chain, meaning that they will work more in call-up shifts (instead of for a yearly fee) performing building-related maintenance activities only (triple-net contract). As a result of these findings the study recommends a new alignment between 3PL-er and building owner instead of the supposed alignment between the (external) logistic property manager and building owner to add more value to add more value to the next generation mega e-fulfilment centres in the future. Coherent the study recommends that the external logistic property manager profession will be more flexible and is responsive to call-up shift instead of working with fixed contracts and yearly fees in the case of e-fulfilment centres. The recommended value-added tasks that belong to the property manager concern building-related repairs, maintenance matters and commercial management.

2. Foreword

This master thesis is the result of the one-year study Facility and Real Estate Management (FREM) at the Saxion University of Applied Sciences and the University of Greenwich. This work has been done under the supervision of Jan van den Hogen MSc, head of tenant relationship management logistics at Deka Immobilien GmbH, whom I would like to thank for using his network to connect with several relevant professionals in the industry. Furthermore I would like to thank all respondents involved in the study for taking time to help me as a student and being so kind to offer their availability at all times, which is not self-evident for such large companies in these busy times.

The intent of this thesis is to present a clear understanding of how to add value from a property management perspective to the next generation mega e-fulfilment centres, which is a distinct type of property introduced by JLL (2013) to be responsive to the enormous growth of e-

commerce. To do that this study tries to define a profile of the e-retail industry and translate this in specific demands that can be fulfilled by aligning corporate real estate via value-added logistic property management. To determine the added value of logistic property management profession two type of property managers are interviewed; first the 3PL-er as in-house property manager and second the external traditional logistic property manager.
This thesis contains a complete view in the business-to-consumer e-commerce industry and the belonging real estate, due to all main stakeholders in this industry are involved in the research; being e-retailers, freight forwarders, third party logistics providers (3PL-ers) and logistic property managers. The thesis report is based on solely the author's own work, except where stated otherwise.

3. Introduction

The era of bricks and mortar retail shops only is of a long time ago. The explosion of smartphone- driven shopping, the advent of "show-rooming" (as consumers browse in stores but buy from cheaper competitors online), and the popularity of no-added-cost returns increase the pressure on today's retailers. Many of these retail supply chains are simply not set up to handle this demand for speed and convenience in a cost-effective way, and are already creaking under the strain of the new multichannel[1] world (Ruwadi, Chaturvedi, Martich, & Ulker , 2012). Meeting the multichannel consumer's increasing expectations for speed and convenience is forcing many retailers to reconsider out-dated supply chains designed for a single-channel world.

Global business to consumer (B2C) e-commerce of goods and services continued to grow significantly (24.0%) in 2014, which was in line with preceding years. As a result, B2C e-commerce sales reached 1,943 billion dollars (Ecommerce Foundation, 2015). "In 2014, 2.64% of the world's Gross Domestic Product (GPD) was spent on purchasing goods and services online. At first glance, this does not seem as a lot, but this share has grown by more than 100% since 2010 (see appendix F), says Jorij Abraham (2015), Director of the Ecommerce Foundation. This growth is an important new driver of demand for logistics real estate. While e-commerce only represents ten per cent of all new leasing around the world, this percentage has doubled during the past three years. Goldman Sachs, anticipate that online sales will continue to rise at double-digit rates for the foreseeable future (Prologis, 2014). The growth will be driven by the increasing power of smartphones – which is boosting mobile shopping – and retailers investing more in their digital operations (Ruddick, 2015).

The demands of the hyper empowered e-retail consumer are *reshaping the delivery landscape*. They are looking for lower (delivery) prices, greater convenience and a seamless experience in buying, receiving and returning products, which is forcing organisations to rethink their traditional parcel delivery processes, research from Accenture (2015) shows. Many retailers have enjoyed considerable success with offering insanely flexible, even when unprofitable; return policies to retain consumer satisfaction (Gilmore, 2014). One of the top three consumer demands relevant for supply chain performance is *delivery timing* (Accenture, 2015). According to Gilmore (2014) today's consumers can dictate where (post office of my choice, office, home,

[1] *Multi-channel retailing offers consumers a wide choice of ways to buy products, which covers purchases from a store, purchases from a website, telephone ordering, interactive television and comparison-shopping sites.*

hotel), how (gift wrapped, embossed, engraved), and when (same day, next day, deferred delivery, rerouting like FedEx package redirect) parcels are being delivered.

3.1 Problem Statement

The importance for the e-retail supply chain to be flexible enough to respond to the development of the e-commerce industry has increased. One of the game changers in the e-retail world is that online consumer behaviour is evolving faster than supply chains can adapt (Prologis, 2014). To define consumer behaviour Barclays (2014) did research on consumer delivery priorities, which shows the five most important factors for consumers when choosing a delivery option. These factors from most important to less important include cost, speed, flexibility, reputation and service. This shows that consumers prioritise cost over service, whilst retailers and logistics providers are being pushed to invest in delivery innovation and cost reducing measures to meet consumer needs (Barclays, 2014). E-retail companies increasingly concern supply chain costs as important as well. After the costs of the products e-retailers sell, delivery cost is the second biggest area of expenditure (Lill, 2015). In addition PwC (2013) states that companies that acknowledge their supply chain as a strategic asset to reduce costs achieve seventy per cent higher performance. Conversely, companies that beat the competition on supply chain performance also achieve significantly better financial results. The study of Barclays also shows that retailers that offer their customers a variety of delivery options are differentiating themselves in the market. Therefore it is expected of the e-retail delivery supply chain to provide optimal flexibility in parcel delivery pace these days.

Figure 1: Top 5 factors for consumers for choosing a delivery option by Barclays (2014)

The growth of e-commerce together with the new demands of the hyper empowered online retail consumer has reshaped the boundaries for logistic real estate entirely. The growth of e-commerce is related to the demand of e-retailers for more (efficient) logistic real estate. E-retailers require three times the logistics space, or even more, compared with brick-and mortar shops. Research of Prologis (2014) has indicated that distribution centres for brick and mortar retailers each support about $2,500-3,500 of annual sales per sq. ft. on average, while e-retailers each support about $1,000 of annual sales per sq. ft. on average. This means that the shift from in-store to online retailing will require at least three times of the logistics space to achieve similar number of annual sales, or using existing logistic space three times as much efficient than e-retailers do nowadays to keep similar sized properties. However, the growth of logistic real estate also comes with an increasing complexity regarding custom-made layouts that are aligned to the needs of today's e-retailers as well. Responsive to accommodate the

needs of e-commerce warehouses are getting more complex and are undergoing massive changes in labour productivity and technology (Chao, 2016).
Furthermore, the hyper empowered consumer is demanding advanced cost reducing and more efficient performance from the logistic providers regarding *product variety, inventory levels, business to consumer shipping and reverse logistics* (Prologis, 2014). These four main drivers of logistic space in the e-retail delivery supply chain are substantially relevant in affecting the performance. Therefore the properties and its facilities in the e-retail delivery supply chain have to provide an optimal setting for productive and cost effective supply chain performance. In short, the increasing complexity of maximal productive and cost reducing logistics in the end-to-end supply chain in combination with the growth of both the demand for logistic space and e-commerce with the belonging demands of the hyper empowered online consumer requires adequate management of today's e-retail delivery supply chain properties.

4. Literature Review

Quite a lot research in the field of e-commerce logistics and the concerned logistic real estate has been done already. The research of multinationals PwC (2013), Jones Lang LaSalle (2013), Prologis (2014), and AT Kearney (2015) laid the groundwork for this research. The research reports contribute to the development of supply chain performance and clearly provide insight in the trends and development of today's market. This paragraph describes the findings and similarities between the different research reports and how they contribute to the main research problems, defined in the introduction.

4.1 The e-retail delivery supply chain

According to Jones Lang LaSalle (2013) the evolution of the retail logistics can be described in four main emphases (see appendix A). In the seventies, most retail stores were replenished by direct deliveries from suppliers or wholesalers. Later on, in the eighties, retailers started to centralize their store deliveries through new distribution centres, which they controlled. In the nineties, global sourcing (for non-food products) took off, with many retailers developing import centres to receive and process mostly containerized imports. From around 2000, e-commerce began to rapidly expand with pure-play (internet-only) retailers leading the way in establishing e-fulfilment distribution networks that we see nowadays (Jones Lang LaSalle , 2013).

A.T. Kearney (2015) clearly defined the typical end-to-end e-retail delivery supply chain that most e-retailers use at the moment, including the transportation steps, shown in figure 2. The involved logistic real estate of the e-retail delivery supply chain in this figure consists out of supplier locations, distribution centres (DC), e-fulfilment centres (FC), origin sorting hubs, destination sorting hubs and last-mile delivery depots. The shipping from suppliers to the distribution centre or the fulfilment centre can be considered as a business-to-business (B2B) transaction. The company that manufactures the products is being sold by an e-retailer, which owns, rents, or partly rents the distribution centre or e-fulfilment centre.

The distribution centre is a warehouse that receives, stocks, and cross-docks goods for sale to designated fulfilment centres. Goods are in cases and usually palletized here (ATKearney, 2015). The fulfilment centre is the pick-and-pack warehouse set up for e-retail business. Cased goods are broken into parcels here (ATKearney, 2015). The shipping from the fulfilment centre to the consumer can be considered as the business to consumer (B2C) transaction.

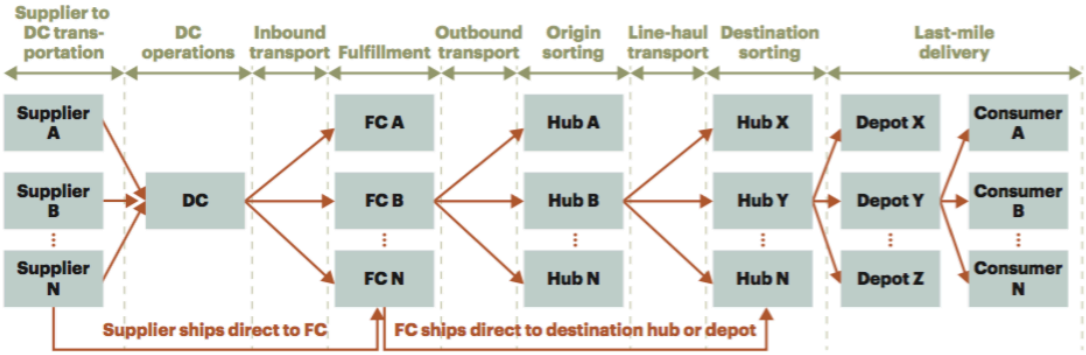


Figure 2: The typical e-retail delivery supply chain defined by AT Kearney (2015)
*DC= Distribution Centre, FC= Fulfilment Centre

4.2. Next generation supply chain properties

According to the introduction the growth of e-commerce and coherent empowered consumer behaviour has led to new demands for e-retail logistics. To respond to the enormous growth of e-commerce, three distinct types of logistics properties are identified by Jones Lang LaSalle (2013). The first type is the *next generation mega e-fulfilment centre,* where the merchandise is stocked and picked at item level. These properties, which are either operated by the retailer or a logistics service provider, are typically 500,000 sq. ft. to one million sq. ft. in size, or even larger. These properties operate mostly twenty-four hours per day (Jones Lang LaSalle , 2013). The large area these properties include is logical referring to the statement of Prologis (2014) in the introduction, which describes that online retailing will require at least three times of the logistics space to achieve similar number of annual sales as in-shop retailers.

The second type is *the parcel hub/sortation centre,* which sorts orders by zip or post code so that they can be delivered to the relevant parcel delivery centre for final delivery to the consumer's home or designated collection point (Jones Lang LaSalle , 2013). These properties will be of greater importance in the e-retail delivery supply chain according to the demands (where, how and when) of the hyper empowered consumer (Gilmore, 2014), described in the introduction.

The third type is the *parcel delivery depot*, which handles the 'last mile' delivery to the consumer. The last mile delivery is the most complex of the three facilities and is merely focused on the transport logistic delivery process than rather the added value of the real estate. The complexity of last mile delivery is mainly caused by local differentiation of the delivery process (Barclays, 2014). However, the last mile delivery study of Barclays (2014) out of the introduction shows that investing in delivery innovation can contribute to meet consumer needs.

4.3. Drivers of logistic space

The four main drivers of logistic space in the e-retail supply chain, relevant to meet consumer delivery demands are *product variety, inventory levels, business to consumer shipping and reverse logistics* (Prologis, 2014). Online retailers have significantly greater product variety (stock keeping units)

on average than in-shop retailers who often offer a smaller range of products due to the high square meter price of high-street retail locations. This requires a broader set of goods carried within logistics facilities such as the mega e-fulfilment centres. According to the continuous growth of e-commerce (Ecommerce Foundation, 2015) and there will be a shift from in-store retail properties to logistics properties, resulting in greater levels of buffer stocks that must be carried/stored within larger logistic buildings (Prologis, 2014).
Individual order picking, packing and shipping direct to consumers require more space than store distribution. Instead of efficient palletizing for store distribution, business-to-consumer shipping requires an individual box for each order (Prologis, 2014). This means that the *e-fulfilment centres* require much more space than the distribution centres, so efficient management of the e-fulfilment processes (order picking, packing and shipping) can add value to both the delivery priorities of the empowered consumer and the e-retail company renting space from investors. Many e-commerce logistics facilities accept returns, and floor space must be allocated to return processing and restocking activities (Prologis, 2014). The return process happens especially in the e-fulfilment centre and requires maximized efficiency and cost reduction to achieve consumer satisfaction, according to the two most important consumer delivery priorities being costs and speed (Barclays, 2014). Jones Lang LaSalle (2013) even stated that return processes of handling purchased items that consumers decide they do not want is also driving demand for another new class of distribution property defined as return processing centres.

4.4. Costs of the e-retail delivery supply chain

The supply chain cost composition of a typical leading Chinese online retailer in figure 3 shows that inventory carrying costs concern the supplier to distribution centre transportation and most of the transportation costs concern the last-mile delivery process. The biggest real estate related expenses regarding the e-retail delivery supply chain are concentrated on internal processes (FC costs), which can be influenced by an optimal setting provided by the belonging real estate (Prologis, 2014). These processes are done in and around the Distribution Centre (DC) and the Fulfilment Centre (FC) and include inventory (carrying) cost, distribution centre costs and fulfilment centre costs. Reducing costs can directly be of added value to the concerned properties regarding the e-retail delivery supply chain, leaving out the optimization of transport costs. Cost reduction reflects in this case a PULL effect by the hyper empowered consumer willing to pay less for their parcel shipment and at the same time a PUSH effect by the e-retail firms looking for profit maximization.

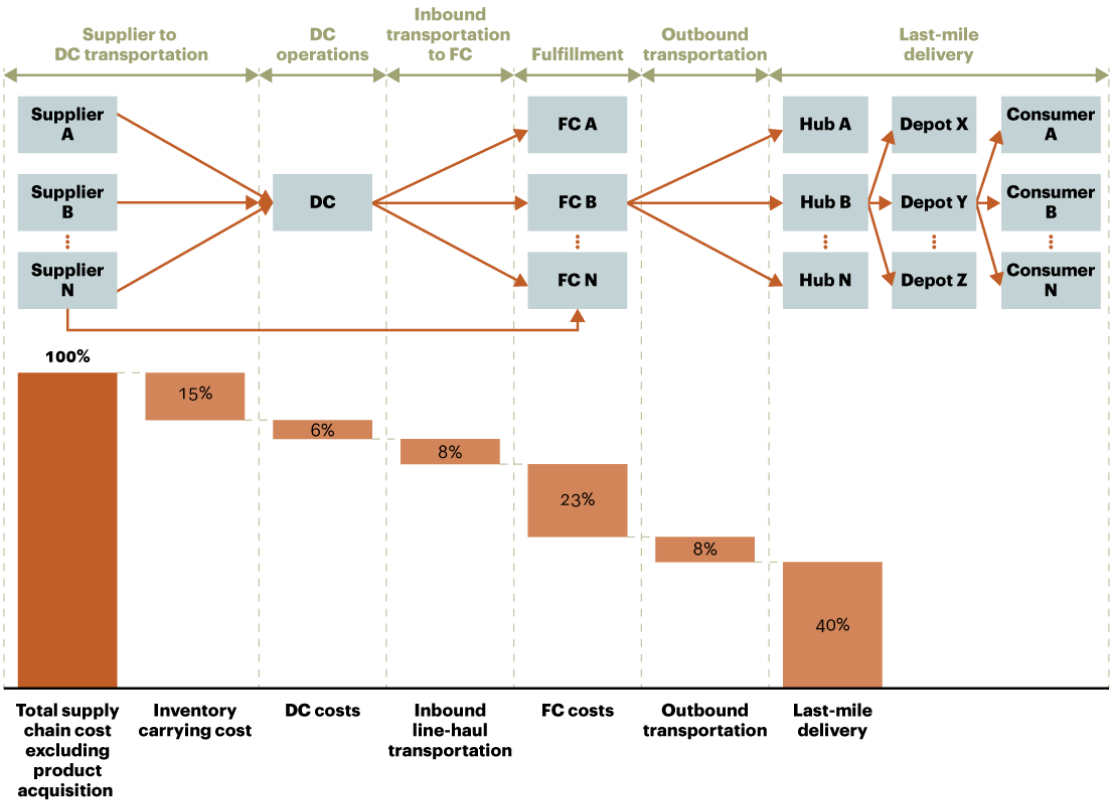


Figure 3: Cost composition of the typical leading Chinese online retailer

Barclays (2014) stated that consumers prioritise low costs and high speed of the concerned parcel delivery service. AT Kearney (2015) approved that faster service could actually cost less, thanks to features that are unique to the typical e-retail delivery supply chain. To deliver orders quickly, stock needs to be held and the orders picked and packed in close proximity to where customers live. This process determines not only the number and geographic locations of fulfilment centres but also the transition of fulfilment centres. The *inventory levels*, defined as driver for logistic space by Prologis (2014), are expected to grow at fulfilment centres and thereby reduced at distribution centres in that case. To lower inventory levels *business to consumer shipping*, also defined as driver of logistic space by Prologis (2014), has to be at a higher pace. This effect on the shipping speed is in line with the expectations of the e-retail consumer about the parcel delivery services. Gilmore (2014) stated that e-retail consumers even prefer next day delivery (24-hour shipping service) at the moment. Faster service means less in-transit inventory, this means that one of the biggest costs regarding inventory carrying (see figure 4) could be reduced.

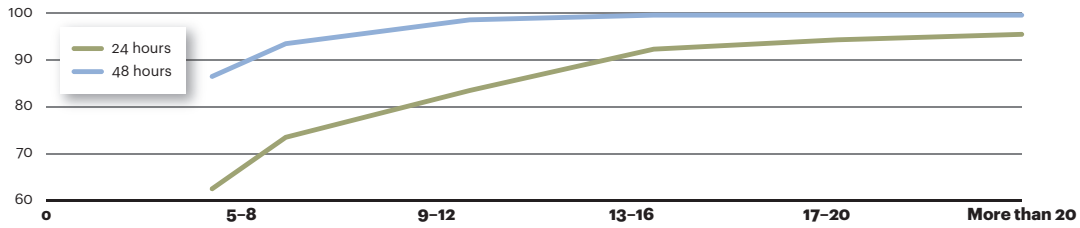


Figure 4: Effective parcel volume coverage based on the numbers of fulfilment centres (%)
Source: AT Kearney (2015)

According to AT Kearney (2015) the difference of 24-hour service compared to a 48-hour service model occurs in the in-transit step because of longer line-haul transport[2] and waiting time at docks. Based on the volume of a typical leading Chinese e-retailer, it is projected that the one-day difference would result in savings of nearly 24 million in in-transit inventory carrying cost. To provide the consumer demands of cost reduction and increased delivery speed of the e-retail supply chain, a more dens network of fulfilment centres is required. This means that fulfilment centres have to be closer located to the consumer, decreasing both transport time and inventory volume.
These new demands for the fulfilment centres in combination with the upcoming topic of fulfilment centres transitioning into mega e-fulfilment centres to adapt to the next generation supply chains defined by Jones Lang LaSalle (2013) and respond to the growth of e-commerce, are forming an interesting foundation for the focus of this research. Four drivers of logistic space, defined by Prologis (2014) as *product variety, inventory levels, business to consumer shipping and reverse logistics* are all applicable on the fulfilment centre and related to decreasing costs and increasing speed in order to satisfy the e-retail consumer. Furthermore, the biggest expense in the e-retail delivery supply chain concern fulfilment costs (see figure 3).

4.5. Value Added Drivers

Van der Voordt and Van der Zwart (2011) published their study about the added value of real estate that is build on the similarities of the work of Nourse and Roulac (1993) De Jonge (2002), Lindholm and Levainen (2006), Lindholm (2008), De Vries et al (2008) and Jensen (2010). Based on similarities between these references, the added value of real estate can be defined as the contribution of real estate to organisational performance by its contribution to the related fields of performance (Van der Zwart & Van der Voordt, 2011).

In order to satisfy the e-retail consumer property management can add value to two belonging fields of performance in the e-retail supply chain, defined by van der Zwart and van der Voordt (2011) as cost reduction and productivity. These two value-added drivers are in line with the two most important priorities of today's hyper empowered consumer that prioritises an e-retailer based on costs and speed (Barclays, 2014). The property manager can reduce real estate life cycle costs (investment costs, operational costs) by steering on efficient space use and smart design (Van der Zwart & Van der Voordt, 2011). E-retailers reducing costs of their overall supply chain processes could lead to cost reduction of the provided parcel delivery services charged to the hyper empowered e-retail consumers. To improve (labour) productivity, the property manager could be of added value by supporting logistics of primary processes and short-walking distances between related functions (Van der Zwart & Van der Voordt, 2011). If the property manager is able to improve the productivity of the supporting logistics of primary processes concerning the e-retail supply chain properties, e-retail organisations will be more able to fulfil priorities of their consumers regarding delivery speed. In addition, consumer demands are evolving faster than supply chains can adapt (Prologis, 2014). Therefore the property manager can additionally contribute to organisational performance by adding value to the flexibility of the belonging logistic real estate. According to Van der Zwart and Van der Voordt (2011) improving flexibility can enable future spatial, technical, organisational or juridical adaptability, e.g. by standardization, simple opportunities to extend the building or

[2] Movement of cargo between two major cities or ports, specially those more than about 1,500 kilometers or 1,000 miles apart.

easy adaptability to other function. This is explicitly applicable for e-fulfilment centres, given the expected growth of e-commerce and the e-retail industry is expected to continue to rise at double-digit rates for the foreseeable future (Prologis, 2014).

The demands of the hyper empowered consumer, as described in the introduction, concern high parcel delivery speed and low shipping costs. Therefore the properties regarding the e-retail delivery supply chain have to provide the optimal setting for productive and cost effective supply chain performance. The related fields to add value as a property manager, defined by van der Zwart and van der Voordt (2011) are *Productivity, Flexibility and Cost Reduction.* Accordingly, the research findings of PwC (2013) defined that key drivers for supply chain leaders are perfect order delivery, cost reductions and supply chain flexibility. Leaders focus on best-in-class delivery, cost and flexibility to meet increasingly demanding customer requirements that is defined in the introduction (PwC, 2013). Cost reduction, Productivity and Flexibility are considered fields where the property manager could be of added value if they possess extensive specific logistic knowledge (Van der Zwart & Van der Voordt, 2011). According to Barclays (2014), an e-retailer with optimal speed (productivity), minimal costs (cost reduction) and high flexibility (flexibility) will attain maximal customer satisfaction. A couple of other added values could be elaborated on in the research as well, such as risk management, innovation and sustainability. However, due the perception of time the research will be limited to the three selected added values explained in this paragraph.

4.6. Added Value Map of Jensen, 2010.

The added value map of Jensen (2010) in figure two shows how the value-added drivers are connected to customers, staff and owners. The property manager generally works for the owner of a building and functions as connector between the user and the owner (Edwards & Ellison, 2004). Furthermore staff stands in this case for the 3PL-ers (further explained in 4.6) that are the users of the e-fulfilment centres within a supply chain. The e-retailer and its online consumers are seen in this research as the customers within the scheme of Jensen. Additionally, this framework shows how the value added drivers Cost Reduction, Productivity, Flexibility and Customer Satisfaction are linked to each target group within this research.

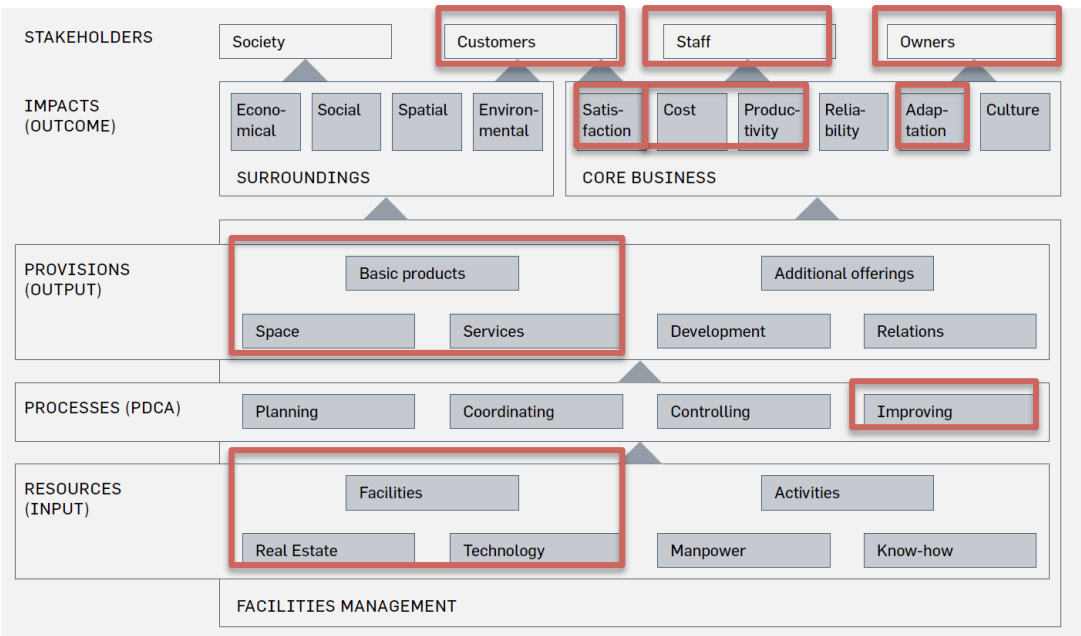


Figure 5: Added Value Map of Jensen, 2010.

The framework describes that building adaptation (flexibility) is linked to in specific the building owners, which assumes that property managers can add value to the flexibility of a building. The other value-added drivers are not directly linked with the owners and therefore the property manager, which assumes that the property managers might be less able to add value to the productivity and cost reduction. The aspects productivity and cost reduction are more linked to the staff, meaning the 3PL-ers. This assumes that the 3PL-er is might be more able to add value to these value-added drivers. At last the customers, meaning the e-retailers, are linked to the customer satisfaction attribute. This assumes that the e-retailer in the end is able to influence the customer satisfaction of the hyper empowered online consumer.

4.7. Third party logistic providers (3PL)

Outsourcing is a trending topic in today's supply chains. According to PwC (2013) the leaders in supply chain management outsource over sixty per cent of their logistics services and nearly fifty per cent of their manufacturing and assembly activities. Outsourced supply chain services are mostly done by the third-party logistics provider (Langley, Allen, & Dale, 2012), an overview of these services is shown in appendix G. The Council of Supply Chain Management Professionals' glossary (2013) defined the 3PL-er as "a person who solely receives, holds, or otherwise transports a consumer product in the ordinary course of business but who does not take title to the product." Third-party logistics providers could be freight forwarders; courier companies and other companies integrating and offering subcontracted logistics and transportation services. Typically the services they provide are transportation, warehousing, cross-docking, inventory management, packaging, and freight forwarding (CSCMP, 2013). Approvingly to their extensive knowledge within the field of work, 83% of Domestic Transportation, 81% of Warehousing, 66% of Inventory management and 65% of Order Fulfilment is being outsourced to 3PL-ers (Langley, Allen, & Dale, 2012). These services all concern the subject property called the e-fulfilment centre. Often, these services go beyond logistics and include value-added services related to the production or procurement of goods, namely services that integrate various stages in the supply chain (Express Group, 2010), so that companies can focus more on their core business, which is for the e-retailers selling products via their online channel. By using a 3PL-er businesses gain a partner that can focus on logistics and transportation management in a way that most companies cannot do internally. 3PL's prime objective is to improve services such as delivering products Full and On Time (FOT), which is in line with today's customer who requires to deliver all products in time (Sheikh, 2012).

Even though there are drawbacks from outsourcing supply chain processes to a 3PL-er, such as perceived loss of control, confidentiality and security of information and incongruent corporate cultures (ASL Distribution Services, 2014), there are a lot of benefits influencing the core aspects of the e-retail supply chain regarding the selected value-added drivers flexibility, cost reduction and productivity that will be applied in this research.

4.7.1. Benefits of 3PL-ers on Flexibility

In the problem statement is identified that flexibility of the e-retail delivery supply chain can be seen as an essential requirement to be able to adapt to changing consumer behaviour and specific delivery demands. Additionally, the Supply Chain Council (1996) established The SCOR model (see appendix E), which identifies *Agility* of supply chain operations as one of the five core supply chain performance attributes. *Flexibility* and *adaptability* of the supply chain are

considered as key performance indicators for the performance attribute Agility. Outsourcing to regional manufacturing and distribution provides the e-retailer greater *flexibility* and makes it easier for them to respond to local customer requirements (PwC, 2013). Enhanced flexibility is required to grow or adapt to the e-retail delivery supply chain based on continuously changing business requirements, such as changing e-retail consumer behaviour. A 3PL provides increased Agility and *Flexibility* to accommodate current and future needs and challenges, by offering the e-retailer possibilities in both growing and reducing businesses, which could be helpful in peak seasons or overflow capacity/constraints (ASL Distribution Services, 2014). According to Supply Chain Brain (2012) e-retailers are now looking more than ever for the nimbleness and flexibility that allows them to adjust, in terms of infrastructure, transport mode and equipment, so they can absorb unforeseen events. To meet these flexibility needs, a 3PL provider should work very closely with customers to understand their planning and forecasting, and translate that into operating models in terms of labour and support services, which sometimes even means to collaborate on hourly basis to adjust to the customers' needs (SupplyChainBrain, 2012).

4.7.2. Benefits of 3PL-ers on Cost reduction

One of the other core supply chain performance attributes defined by the SCOR model of the Supply Chain Council (1996) is Cost, which is determined by Barclays (2014) as the number one consumer delivery priority as well. Capable third-party logistics (3PL) providers can help e-retailers manage rising logistics costs because they already have highly developed processes and critical infrastructures in place (Constantini, 2011). Facilitating a comparable logistic infrastructure would require the e-retailer to make a large investment including a long-term return on investment, which is not possible for most small/mid size players. According to the 18th Annual Third Party Logistics Study (Capgemini & Langley, 2014) an average logistics cost reduction of 11%, average inventory cost reduction of 6%, and an average fixed logistics cost reduction of 23% showed the continuing, positive overall nature of the 3PL-Market reducing costs of supply chain activities.

Two fields within the supply chain which can substantially be optimized by the 3PL-er are shipments and inventory storage management. Normally e-retailers use a familiar set of shipping methods, which is not guaranteed to be the cheapest or most efficient. When a 3PL finds out where it is possible to consolidate shipments, this not only reduces logistics costs by cutting back on the number of shipments, but it also increases the overall expediency of shipments (Pattinson, 2014). A 3PL can help reduce your logistics costs by analysing business's inventory needs and storage methods and upgrading how to handle inventory as well.

4.6.3. Benefits of 3PL-ers on Productivity

As defined by Barclays (2014) it is really important for the e-retailer to work as productive as possible so that parcel deliveries could be completed as soon as possible, because delivery speed is considered as second most important consumer priorities concerning parcel delivery. Smooth logistic processes are necessary for the productivity of e-retail businesses and could be improved by outsourcing to a 3PL-er. Shippers agree that 3PLs provide new and innovative ways to improve logistics effectiveness and *productivity* (Capgemini & Langley, 2014), by having access to new technology and capabilities (skills & processes) not available internally (ASL Distribution Services, 2014). Another benefit that the 3PL-er provides regarding productivity could be to improve the company strategic focus, which means that the e-retail company is more able to

focus on their core competencies in stead of other business disrupting activities such as workforce issues (e.g., labour concerns, hiring, compensation, etc.), palleting, packaging, etcetera. Focussing more on the core business of selling products or services online, while the 3PL-er is taking care of logistic effectiveness in the concerned e-retail supply chain facilities would improve the overall *productivity*.

4.7. Topical added values for the logistic property manager (function)

According to Edwards and Ellison (2004) industries use the property to add value to their activities, by providing the customer with a particularly designed environment through the use of the individual properties involved. These individual properties can help to add value to the business, by providing the optimum environment to generate productivity from the occupiers (Edwards & Ellison, 2004). In the e-retail industry it is important to provide high speed, low cost parcel deliveries (Barclays, 2014). This means for the related properties that they have to provide the optimum environment generate maximum productivity (speed) and efficiency (lower costs). This is applicable for the property manager because her role is to provide options to achieve the overall business goals and to help solve business problems with property solutions. The property manager should be proactive and interactive, working with the board of directors to anticipate the business's needs, and planning ahead to translate those needs to property requirements (Edwards & Ellison, 2004). As defined in previous paragraphs planning ahead to translate needs to property requirements is exactly where the research is about, planning the developments of e-commerce ahead and translating the concerned needs into the relevant property; the next generation e-fulfilment centre.
According to JLL (2016) logistic supply chain property management can help to reduce costs and optimize flow and improve services if they possess extensive logistic knowledge. Additionally they could help to get products to customers more efficiently and effectively by optimising the current setting (JLL, 2016). So approvingly one of the leading organisations in the industrial property management industry confirms that the logistic property manager can be of added value to the cost reduction and productivity of the supply chain related properties. The expertise of this company approves the importance of the drivers of logistic space defined by Prologis (2014) as inventory levels, business to consumer shipment and reverse logistics. JLL (2016) stated that inventory optimization, transportation management and facility design are considered as their fields of expertise.

4.8. Enhancing the contribution of corporate real estate to corporate strategy

Singer, Scheffer and Van Meerwijk (2006) published an academic research paper that elaborates on the contribution of real estate to corporate strategy. The purpose of the paper was to provide a measurement tool for real estate executives to improve and enhance their contribution to corporate strategies. The measurement tool was developed based on the alignment of seven added values within the field of real estate, defined by De Jonge (1996) and nine driving forces (Nourse and Roulac, 1993). The applicability of this measurement tool was validated by interviewing fourteen Dutch-based global corporations about the contribution of corporate real estate to their corporate strategy. The paper contributed to the further recognition of the importance of real estate in a corporate setting, at the time it was published. The measurement tool of Singer, Scheffer and Van Meerwijk (2006) has widely been used in the mean time within the profession of real estate. However, the framework has not been further developed, even though the literature that was published in the mean time has

elaborated a lot about the contribution of real estate to corporate strategies.
Therefore, this review reflects some of the developed literature that elaborated on the contribution of real estate and was published in the mean time upon the framework of Singer, Scheffer and Van Meerwijk (2006). The work of De Jonge (1996) describes seven fields of contribution of real estate (see appendix N) that can be of added value to corporate strategies, being productivity, cost reduction, risk control, increasing value, the increase of flexibility, changing culture and PR and marketing (image). To measure the contribution of real estate the framework identified twenty-five measurable items for the seven fields of added value based on literature and participating corporate real estate executives (see appendix N). Points that could be rewarded to each measurable item; (0) No use; (1) Moderate use; (2) Fairly good use; and (3) Extensive use. These fields of adding value are aligned to specific belonging corporate driving forces in a confrontation matrix (see appendix O). To let real estate contribute to corporate strategies a company can check whether the scores of the related added values are aligned with the belonging driving forces. If not, the measurement tool can be used for real estate executives to improve the contribution of real estate to corporate driving forces.
The wide array of measurable items that are extracted from both literature and participating corporate real estate executives in combination with the literature used to define the field of adding value of real estate and corporate driving forces enhances the level of quality of the work of Singer, Scheffer and Van Meerwijk (2006).

Van der Voordt and Van der Zwart (2011) published their study about the added value of real estate that is build on the similarities of the work of Nourse and Roulac (1993) De Jonge (2002), Lindholm and Levainen (2006), Lindholm (2008), De Vries et al (2008) and Jensen (2010). Based on similarities between these references, this work added two additional fields of contribution to organisational performance relevant for real estate, being *user satisfaction and innovation*. Van der Voordt and Van der Zwart (2011) described that real estate can contribute to user satisfaction by steering on a functional, comfortable and pleasant working environment, taking into account user needs and preferences. In addition they defined that real estate can add value to the stimulation of innovations in order to improve business processes, e.g. by creating formal and informal meeting space to exchange ideas. One year later Van der Voordt (2012) published a paper that revealed one extra relevant field of adding value via real estate, which is *sustainability*. This added value is in line with trending themes such as global warming and resource scarcity and responsive to the belonging change corporations made to adapt to these trends. The additions introduced by Van der Voordt and Van der Zwart (2011) and Van der Voordt (2012) clarifies the sensibility of the added value topic being influenced by the perception of time and the belonging trends and developments of the corporate real estate market.

4.9. Conclusions Literature Review

As defined in the literature, there has been done quite some studies in the different fields concerned the proposed research variables. The findings of the completed leading research regarding the e-retail industry, the added value of the property manager and the third party logistics provider (3PL-er) have been summed up. The absence of studies that link the different fields of expertise to each other are forming gaps in the FREM field, which will be fulfilled by doing this research. Linking the developments of today's e-retail industry to the work of 3PL-ers and logistic property managers will be a significant and substantial contribution to the literature and to the e-retail delivery supply chain performance. Most literature elaborates on

the Business-to-Business (B2B) side of the supply chain, improving business relevant processes or performance, while this research is elaborating on the Business to Consumer (B2C) delivery side of an e-retail delivery supply chain from a real estate perspective.

Out of the literature research could be concluded that the e-retail delivery supply chain has got three major stakeholders: The e-retailer, the 3PL-er and the (external) logistic property manager that work for building owners. The developments of e-commerce are influencing e-retailers industry and the concerned parcel delivery services (Barclays, 2014). Consumers prioritise high speed, low costs of their parcel delivery services. Additionally today's consumers can determine where (post office of my choice, office, home, hotel), how (gift wrapped, embossed, engraved), and when (same day, next day, deferred delivery, rerouting like FedEx package redirect) parcels are being delivered Gilmore (2014). This requires the 3PL-er to be very flexible in types of packaging, delivery destinations.
The selected property for the research is the next generation mega e-fulfilment centre, which is introduced by Jones Lang LaSalle (2013). AT Kearney (2015) stated that the fulfilment centres have the most influence on the costs and performance of the e-retail delivery supply chain of the potential real estate. Additionally, the drivers of logistic space identified by Prologis (2014) as inventory levels, business to consumer shipping and reverse logistics, which are especially applicable on the e-fulfilment centres. The leaders in supply chain management outsource over sixty per cent of their logistics services and nearly fifty per cent of their manufacturing and assembly activities (PwC, 2013). Therefore the author chooses to apply the research on the layout of next generation mega e-fulfilment centres as a work environment for the 3PL-er instead of e-retailers managing their own warehouse, like Amazon.
Edwards and Ellison (2004) stated that the property manager can contribute in providing the optimum environment to generate maximum productivity by being proactive and interactive to anticipate the business's needs, translating those needs into property requirements. Additionally JLL (2016) confirms that the logistic property manager can stimulate reducing supply chain costs and to get products to customers more efficiently and effectively by optimising the setting. The related fields to add value as a property manager are approvingly defined by van der Zwart and van der Voordt (2011) as Productivity, Flexibility and Cost Reduction. However, the growth of e-commerce and the belonging demands of the online consumers increase the complexity of the internal more custom made processes within the e-fulfilment centre. Therefore the property manager is required to possess extensive and specific knowledge about the internal logistic processes that are aligned to the differing e-retailers to be able to create an optimal setting for the 3PL-er and add value to their performance.
Meanwhile the 3PL-ers have developed their expertise about the building and its internal logistic processes, whereat they can be of increased added value themselves. Therefore the main aim of this research is to determine the role of the logistic property manager in adding value to the next generation e-fulfilment centres and what their future influence in this will be. The automatically arising main research question is: *What is the future influence of the logistic property manager in adding value to the next generation mega e-fulfilment centres?*

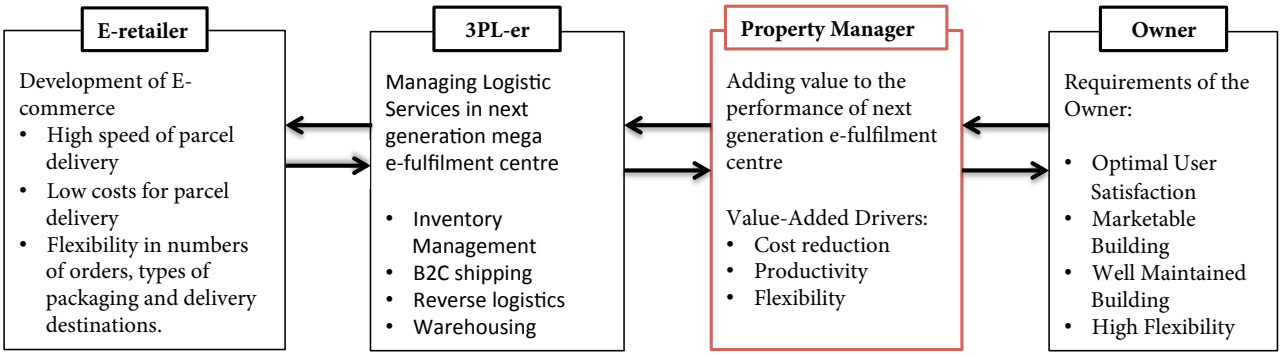


Figure 6: Conceptual framework based on selected literature

The relationships between the different research variables are shown in figure 6. The independent variable within the research is the role of the logistic property manager in adding value to both the users' performance and the requirements of building owners. This variable is directly influencing the layout of the next generation mega e-fulfilment centre, which is the dependent variable of the research. This independent research variable is the work environment of the 3PL-er and the asset of an owner. The developments in e-commerce are influencing the e-retail industry and therefore the demands of the e-retailer for the 3PL-er. The 3PL-er is influencing the success of the belonging e-retailer by providing optimal inventory management, B2C shipment, reverse logistics and warehousing of a great product variety. Hence the e-retail industry can be defined as a second independent research variable, because of its relationship with the layout of next generation mega e-fulfilment centres.

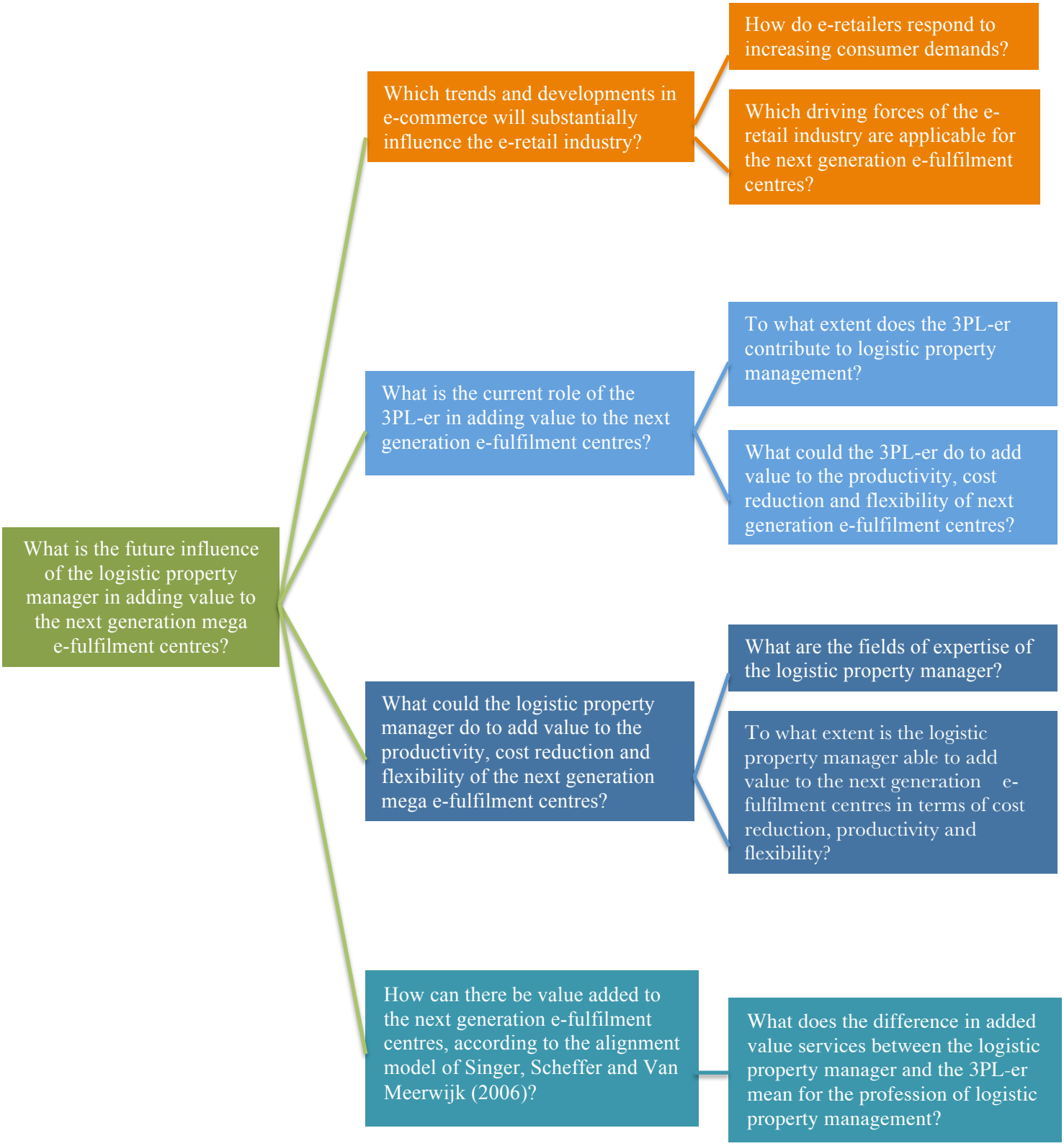
5. Questions and objectives

To answer the main research question accurately, four relevant sub-questions have been determined and are shown in the research breakdown structure on the next page. The sub-questions are categorized per respondent group (stakeholders) that can be extracted out of the conceptual framework in figure 6. There are three respondent groups, involving the e-commerce group (orange), the 3PL group (cyan) and the logistic property management group (blue). Each sub-question is answered by answering the belonging sub-sub questions to address all involved subjects determined in the introduction and literature review.

In the first phase the objective is to extract a clear profile of the e-commerce industry, which is determining the boundaries for the alignment with the e-fulfilment centres of the involved 3PL-ers, managed by the logistic property manager. Questions to determine a profile of the e-commerce industry also concern the driving forces of Nourse and Roulac (1993) and how e-retailers and freight forwarders respond to the demands of the hyper empowered online consumer (Barclays, 2014) of today. The main objective is to determine the trends and developments within this e-commerce industry that are influencing the e-retail world and therefore the world of logistic real estate.
Thereafter the role of the 3PL-ers in adding value to the cost reduction, productivity and flexibility of the next generation e-fulfilment centres is clarified. In this section is being determined until what extent a 3PL-er can be of added value to their own business by managing a property themselves and where the property manager is needed and what they can do on the property to add value to the performance of the 3PL-er. The main objective in this stage is to get a clear grasp on what 3PL-ers exactly do and to what extent they can contribute to logistic property management before interviewing the logistic property managers.
Subsequently the objective interviewing the logistic property managers is to get a clear vision on how they think about their own role now and in the future in adding value to the next generation e-fulfilment centres that are influenced by the changing logistic environment. To determine their role it is crucial to determine their field of expertise in the subject area, given the fact that more extensive and specific knowledge is required in today's complex logistic industry. In addition they will also be asked what their competitive advantage on the 3PL-ers in terms of property management is and how they respond to the growth of in-house property management done by 3PL-ers, which could be considered as a threat for their future influence.

After these questions are deducted from the three main respondent groups in this research, the e-commerce profile and its driving forces will be confronted with the fields of added value to determine the roles of both the 3PL-er and the logistic property manager. After the author has answered all relevant sub-questions the main research question can be answered and could lead to a reliable conclusion. The main objective of the entire research is to finally determine what the future influence of the logistic property manager in adding value to the next generation mega e-fulfilment centres would be and how their role is about to change in the complex industry of business to consumer logistic real estate. In addition could be concluded what the changing role means for the external logistic property manager profession. Furthermore could be discussed how the chain of owner, 3PL-er and the property manager has to be aligned to add as much value as possible to the next generation e-fulfilment centres and how they can make the best use of one another to accomplish this.

Research Breakdown Structure



= E-commerce Respondent Group

= 3PL Respondent Group

= Logistic PM-er Respondent Group

6. Research methods, Operationalisation and Analysis

6.1 Research Approach

To gather relevant and applicable data that contributes to solve the problem statement a qualitative approach is used. One of the main reasons to apply a qualitative approach is because the research concerns a relatively new type of property, introduced by JLL in 2013 as the next generation mega e-fulfilment centre. The influence of the property in adding value to this type of property is not well-defined jet, because of its short existence. A qualitative approach can help to explore this role more in-depth and determine what skills and knowledge the property manager has to possess to add value to these new types of properties.
One of the other main reasons for choosing a qualitative approach is because of the high complexity of the research problem and overall topic. The topic is divided over several layers of professions throughout the industry, concerning e-retailers, 3PL-ers, logistic property managers and building owners. In addition the literature review describes how complex the world of logistics and logistic real estate is nowadays. It also specifies that due to its complexity, more extensive and specific knowledge is required from the property manager to add value to these new types of properties. Using the qualitative approach can distil the complexity of this research into more manageable parts and layers. Because one of the main objectives of this research is to address the linkages and mechanisms between the different involved parties and layers, a qualitative approach is also more fruitful.

6.2 Research Strategy and Data Collection

For this entire research in-depth individual interviews are conducted to collect open-ended qualitative data. Interviews are particularly useful for getting the story behind a participant's experiences. The interviewer can pursue in-depth information around the topic (McNamara, 1999), which is needed in this case to get to know what the 3PL-er and the property manager currently do to add value to the e-fulfilment centres and how this will change. The approach for the interviews is most similar to the 'general interview guide approach'. The interviews are semi-structured (see appendix H), and send in advance to the respondents to get a clear focus up front. The semi-structured interviews ensures that the same general areas of information are collected from each interviewee per respondent group, but still allows a degree of freedom and adaptability in getting the information from the interviewee. This is crucial for extracting rich and relevant data out of the interviews for the subject. In addition, the freedom in semi-structured interviews allows adjusting the interview to the core-focus of the company the respondent works for and the story they want to tell. However, sometimes the interviewer applied steering to control the course of the interview to avoid huge digressions from the topic. In addition the interviewer sometimes shares the interpretation of what is said by the respondent to confirm if important information is correct or need some further explanation.

6.3 Measurement Instruments

The interviews are conducted face-to-face and are recorded and transcribed. The main advantages in this case of doing a personal interview survey with the face-to-face method is that it presents a greater opportunity to observe the attitude and behaviour of the respondents (Sincero, 2012), which might especially be relevant for the logistic property manager interviews discussing their own role in the field of work. According to Sincero (2012) another relevant

advantage for using the personal interview survey would be that people are more likely to answer live questions about a subject, which results in higher response rates. Furthermore respondents would be more convenient at expressing their long answers and discussing complex subjects orally than in writing (Sincero, 2012). Recording interviews and transcribing them based on the recordings reduces the possibility of errors in the conducted information and therefore ensures that the information is trustworthy. The questions for the face-to-face semi-structured interviews are extracted from the problem statement and the literature reviews and can be found in appendix H. Specific elements from the literature review are used to formulate relevant interview questions that address their importance by answering them. For example the interview questions for the e-commerce group (see appendix H) contains a question about how e-retailers respond to the demands of the hyper empowered online consumer in terms of delivery speed, costs and flexibility. In addition the specific aspects that are addressed by van der Zwart and van der Voordt (2011) that are relevant for adding value to productivity, cost reduction and flexibility are completely integrated in the interview with the logistic property managers (see appendix H).

6.4. Operationalisation and participants

To define the research methods this paragraph describes the process step by step. Before describing the methodology it is important to know that there is a current situation where e-fulfilment centres are being used, which differs from the new situation where next generation mega e-fulfilment centres will be used (see literature review). The interviews are divided into three separate groups that all consist out of three respondents, which you can see in figure 7. The three groups concern e-commerce companies (e-retailers and a post office), 3PL companies and logistic property management companies, which are idem to the stakeholders that were extracted out of the literature review and used in the conceptual model in figure 6.

The first step in the operationalisation is to determine the changes in the e-commerce industry and what influence they have on e-retailers and in specific the parcel delivery processes. Therefore the researcher conducted three interviews with different respondents. The first respondent is an inventory manager and purchase specialist of Bol.com that formerly also worked for Coolblue, which are the two biggest e-retailers in the Netherlands. The second interview is conducted from the e-commerce manager of De Bijenkorf, which is a company that combines an online channel and an in-shop channel seamlessly and is known for their customer satisfaction in the Netherlands. The third interview is conducted from the director logistics of PostNL, which is the largest post office in the Netherlands that provides the parcel delivery service for both Bol.com and De Bijenkorf. These three respondents should provide sufficient insight from different perspectives about the development of the business to consumer e-commerce industry.
The second step is to determine what the optimal work environment for a 3PL-er is to perform better and how they are able to contribute to this by managing their own property or outsource property management to an external party. Therefore the researcher conducted three interviews with different 3PL-ers. The first respondent is an operational manager of Docdata, which is the 3PL-er that provides all logistic services for both Bol.com and De Bijenkorf from their fulfilment centre in Waalwijk. The second interview is conducted from corporate real estate manager of DHL to gather specific information about what the added value is of in-house building expertise for a 3PL-er. The third interview is conducted from the property manager of Kuehne and Nagel (Schiphol) that developed some of their buildings and now does

the property management. DHL and Kuehne+Nagel are control groups for the Docdata respondent, to check whether the information is covenant or differs. Due to the industry coverage of these large 3PL-ers, the information they provide should be sufficient enough to determine their role in adding value to the e-fulfilment centres and how optimizing their work environment could lead to better performance.
The third step is to determine the current and future influence of the logistic property manager in adding value to the productivity, cost reduction and flexibility of the next generation e-fulfilment centres. Therefore the researcher conducted three interviews with the largest logistic property managers in the Netherlands, concerning DTZ Utrecht (1,000,000 sq. m), Cushman & Wakefield Amsterdam (10,000,000 sq. m) and JLL Rotterdam (400,000 sq. m). However these parties are the top three in logistic property management, their sizes differ, which is good to gain different insights in the topic. It is expected that interviews with the three largest logistic property managers in the Netherlands will gain sufficient insight to determine their role and expertise in adding value to the next generation mega e-fulfilment centres.

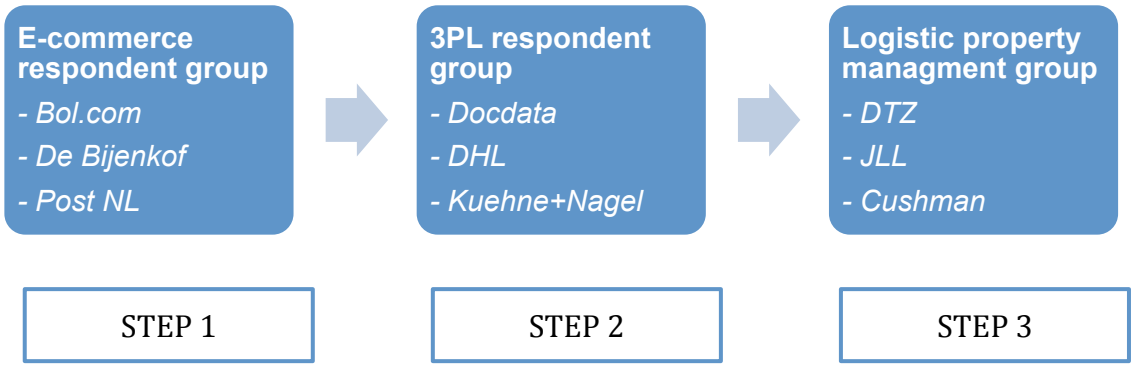


Figure 7: Operationalisation of interviews

For the operationalisation of this research the largest parties in the market are conscious selected for conducting interviews, because the subject involves mega e-fulfilment centres. These types of properties involve over 40.000 sq. m minimal and are therefore mostly managed by the large and well-known companies in the industry. The small and medium 3PL-ers and property managers are not being selected to manage these kinds of buildings, due to their experience, size of operations and reputation.

6.5 Methods of data analysis

Before the interviews were conducted the researcher determined a codebook with hierarchy out of the literature review (see appendix I for codes). All relevant codes are included, such as codes for the main stakeholders, added values, driving forces, trends in e-commerce and services the stakeholders provide. These codes cover the entire research subject and are all used in the coding process. All interviews are transcribed (unstructured text) based on a voice recording and coded based on the pre-codes that have been formulated out of the literature. After open coding an interview new relevant codes were added to the codebook to use as much as relevant codes in the entire coding process. Due to the open coding manner master headings were addressed and second-level categories were identified. Hereafter these master headings and second-level categories were used when re-reading the texts. The high applicability of the determined codes of categories accurately confirmed that the concepts and categories represent

the interviews after all. Subsequently, the axial coding process helped to explore how the concepts and categories are related (see appendix I). In the codebook hierarchy is shown how the different stakeholders are related to other categories (red lines) and how sub-categories like the role of the property manager adding value (PM-Adding Value) are related to other subcategories like productivity, cost reduction and flexibility. Axial coding also provided a clearer understanding of what roles a logistic property manager can have in the field of work (see role PM-er in appendix I). This role will be further explained in the results section. Thereafter, the researcher bundled all codes per respondent group into a table from which you can select and sort relevant codes for answering the related research questions. Quite often more codes were selected that were determined as related in the axial coding process. Additionally, the quantity of the codes used was measured to determine more often discussed themes and categories in the interviews. This is quite useful for some topics like the trends and developments in e-commerce, spatial drivers for logistic real estate determined by Prologis (2014) or in-house and outsourced property management. The quantitative analysis of the applied codes provides an easier insight in which of these themes and categories were mentioned way more often than others and might need special attention in the analysis.

7. Reliability and Validity

7.1 Reliability

The extent to which results are consistent over time and an accurate representation of the total population under study is referred to as reliability and if the results of a study can be reproduced under a similar methodology, then the research instrument is considered to be reliable (Joppe, 2000). As mentioned above, the researcher conducted nine in-depth face-to-face (semi-structured) interviews with leading companies in their industries. Due to their position within the company and the position of the involved company in their industries, this research assures a high reliability in terms of involved respondents. According to the position in the company they work for, the involved respondents should possess the right knowledge to provide reliable insights in the research subject and are therefore expected to answer the interview questions appropriately. In addition, the involved respondents work for companies that have more often to do with managing these specific types of mega (light) industrial real estate, in comparison to smaller parties in the market (see chapter 6.4). Furthermore the nine involved respondents are divided over three groups within the research to ensure that what they state is interpreted from their specific expertise and industry they work in. Therefore it can be assured that the involved respondents form an accurate representation of the total relevant population under the study subject. In addition, Docdata has 2 halls for De Bijenkorf and 4 halls for Bol.com, which ensures that the extracted data from these interviews is more reliable.
Based on a solid and extensive literature review that consists from the latest primary sources throughout the industry about the subject, relevant questions have been formulated (see appendix H). Even though the interviews are semi-structured, all questions from appendix H that are needed to gather relevant research data to answer the research questions are discussed in the interviews (see transcripts). Based on the methodology and the involved population the research can be considered as reliable. However, the consistence of the research over time can be affected due to the changes in the dynamic industries of e-commerce and logistics. These industries are very sensitive for market trends and consumer demands as mentioned in the

introduction (see chapter 3). This means that results might differ from the results of this research if the research would be conducted for example one year later.

7.2 Validity

According to Saunders, Lewis and Thornhill (2013), there are three types of validity: Construct validity, internal validity and external validity.
Construct validity is the degree to which a test measures what it claims, or purports, to be measuring (Brown, 1996). As defined before, this research is measuring the influence of the logistic property manager on adding value to the next-generation mega e-fulfilment centres. This is being done by making a triangulation of the interviews from all involved parties; meaning e-retailers, 3PL-ers and logistic property managers. The researcher defined the demands that e-retailers and 3PL-ers have for e-fulfilment centres by doing face-to-face interviews and discussed the knowledge that is needed for the property manager to add value to these types of properties by performing property management. The involved property managers were asked to explain how they can add value to the productivity, cost reduction and flexibility of e-fulfilment centres and especially how they would do this. In addition trends and developments within e-commerce were discussed and which influence they will have on the role of logistic property manager and the knowledge they should possess. Recording interviews and transcribing them based on the recordings reduces the possibility of errors in the conducted information and therefore ensures that the information is trustworthy.

Internal validity means that what was intended to be measured can be measured anyway (Saunders, Lewis, & Thornhill, 2013). What was intended to measure is the current role of the property manager in adding value to the next generation mega e-fulfilment centres. According to the results in the following chapter there are really clear results in the level of added value of the logistic property manager to the e-fulfilment centres currently. A current role of a profession can be measured by doing several evaluating interviews about their activities in the field, which is especially more valid when the demands clearly defined before by other respondent groups like in this research is done. Based on the determined trends and developments in the business to consumer e-commerce and 3PL industry via a triangulation it seems more valid to reflect the current role of the property manager. However, the research concludes also the future influence of the logistic property manager, based on the findings of this research. As explained, the dynamic industries can change during time, which might affect the influence and the profession of logistic property management. Nonetheless, the research defines clearly a problem in today's world of logistic real estate management that will have influence on the future of the profession of logistic property management.

External validity is the extent to which the results of a study can be generalized to other situations and to other people (Aronson, Wilson, & Fehr, 2007). The study is highly relevant for more logistic property managers that manage e-fulfilment centres. According to the interviews with the logistic property managers the findings concerning their role in adding value and the amount of knowledge they possess about logistic internal processes have a lot of overlap, which is applicable for other logistic property managers (people) in the industry. The study is especially applicable on (mega) e-fulfilment centres, due to the dynamics of the industry and the unique logistic internal processes that only happen in these properties and the fact that only this type of property is discussed in the interviews.

7.3 Limitations

The study is limited in terms of selected added values as well as type of properties concerning the e-retail delivery supply chain. A couple of other added values could be elaborated on in the research as well, such as risk management and innovation, but due the perception of time and the priorities of today's online consumer the research is limited to the three selected added values: Productivity, Cost Reduction and Flexibility. Additionally there are a lot of other properties where this research could be conducted on, such as supply chain sortation centres and last mile delivery hubs, but due the complexity of regional differentiation and the fact that property management for these property management would have less influence on supply chain performance the focus is limited to the e-fulfilment centres. The research is also limited to business-to-consumer delivery, which means that business-to-business properties (raw materials to suppliers and DC to in-store) are excluded.

RESULTS

JLL ROTTERDAM

"When you ask me if we do add any value to the logistic real estate of our clients I'd say minimal. It requires really specific knowledge that we don't have yet."

DTZ UTRECHT

"If the property manager is not involved in the development stage it would be to late to have your part in adding value during the life cycle.

Currently we don't have all the knowledge to really add value to e-fulfilment centres and in specific the internal processes of the users."

CUSHMAN & WAKEFIELD AMSTERDAM

"The 3PL-ers will never walk in our shoes, because the owners of the properties in our building portfolio trust us and naturally distrusts the user."

DOCDATA WAALWIJK

We manage everything in-house

- *Be more close to the process than a third party*
- *Immediately act when there is something that needs to be fixed in time.*
- *To keep the production going and be as productive as possible, to retain our customers.*

KUEHNE + NAGEL SCHIPHOL

We do in-house property management, because we:

- *Know exactly what our clients want*
- *Can directly react when there is something wrong*
- *Are more close to the process than a third party*
- *Have more control over the costs of the buildings*

DHL

We keep property management in-house because

- *It is much cheaper as well at these kinds of building portfolios.*
- *We keep the expertise in-house to offer a competitive advantage for our clients*

8. Results

8.1.1. Results e-commerce group

Which trends and developments in e-commerce will substantially influence the e-retail industry?

The involved respondents of the e-commerce group that consists out of Bol.com, De Bijenkorf and Post NL, have a shared view when it comes to their expectations about the e-commerce industry. Generally their forecast is that the e-commerce industry is still expected to continue to rise after the substantial growth of the last few years. One of the main reasons for this growth is increased mobile shopping and retailers investing more in their online operations. Another shared view is that the e-retail business is very dynamic and therefore sensible for every development in terms of consumer demands regarding products and service. Therefore customer satisfaction will become a more crucial theme the coming years for today's e-retailers, especially because they have a lot to choose from. This means that e-retailers sometimes even have to take unprofitable actions to keep their customers satisfied.

8.1.2. How do e-retailers respond to increasing consumer demands?

According to Barclays (2014) consumers prioritise e-retailers based on the costs, speed and flexibility of their parcel delivery services. In terms of speed all respondents of the e-commerce group agreed that high delivery speed is a must for today's e-retailers to retain customer satisfaction. De Bijenkorf offers to deliver the consumers' products at home the next day, once ordered before 22.00. In addition, Bol.com started with their extremely high-speed delivery option called 'Collect Today' (Bol.com, 2016). This service includes that the consumers' parcels will be delivered at the local pick-up point of Albert Heijn at 17.00, once ordered before 12.00 the same day on working days. However, in terms of costs the respondent of De Bijenkorf states that their consumers are willing to pay for a high-speed parcel delivery service (see line number 73, transcript De Bijenkorf). This is being substantiated by the costs for the 'Collect Today' service of Bol.com. It is hard for an e-retailer to reduce the costs for a parcel delivery because they outsource this to freight forwarding companies such as Post NL, who charges a certain rate per delivery. However, according to the respondent of Post NL making smart use of the existing networks of one another will be more beneficial (see line number 54, Post NL transcript) and might influence the costs for a delivery service. Approvingly, collaboration is one of the central themes within the e-commerce respondents group. Agreeably the respondent of Post NL explained that networks that can improve each other and will be more beneficial when using them together for both costs and delivery speed.

In terms of flexibility De Bijenkorf provides a very flexible delivery service via PostNL whereat a consumer can determine the place and time but also the type of packaging of the delivery (line number 77). This is responsive to the statement of Gilmore (2014) out of the introduction concering that today's consumers can dictate where (post office of my choice, office, home, hotel), how (gift wrapped, embossed, engraved), and when (same day, next day, deferred delivery, rerouting like FedEx package redirect) parcels are being delivered. Bol.com is trying to provide a similar kind of service via their pick-up points at Albert Heijn, which you can select based on the location you are at. Additionally you can pick up your parcel whenever you want. Summarily, the respondents of the e-commerce group declare that two of the three aspects for a consumer to prioritise an e-retailer concerning speed and flexibility are really important subjects for them. However, the third aspect concerning costs is a subject where they

have less influence. Yet, freight forward companies such as PostNL might be able to reduce these costs when collaborating better in several partnerships.

8.1.3. Which driving forces of the e-retail industry are applicable for the next generation e-fulfilment centres?

To extract a clear image of the e-commerce industry of today three in-depth interviews have been conducted. As mentioned above, the involved respondents work for Bol.com, De Bijenkorf and Post NL. In the interviews within the e-commerce respondents group the driving forces of Nourse and Roulac (1993) were discussed to determine a general e-retail profile and to align this with the applicable added values. Nonetheless, it became clear that all three respondents have their own strategy and points of focus related to their core-business, which differ from each other. In this paragraph is being discussed what the driving forces of the involved respondents are and how they differentiate from each other and what this means for the alignment of adding value to the next generation e-fulfilment centres.

Profile description Bol.com

With over a 1,000 employees and 1.8 billion euros revenue in 2015 Bol.com is one of the biggest e-retailers in the Netherlands (Bos, 2016). The driving forces of Bol.com are *Products offered, Size and growth, and the Method of Distribution*. Bol.com wants to gain a competitive advantage as being an e-retail by offering as much as products as possible to their consumers, which is also shown by their slogan: "Bol.com, the shop of all of us". In addition Bol.com wants to grow by selling as much consumer goods as possible. Offering a large product variety and being able to store these products has its consequences for the spatial drivers product variety and inventory (Prologis, 2014), defined in the literature review. Bol.com has to store a huge number and variety of products as inventory, which needs a lot of storage space. The variety of products has also a consequence for how the racks and how they are divided through the warehouse (Prologis, 2014). According to the interview (line number 70) Bol.com is not keeping the entire inventory themselves, but a lot of products are placed in warehouses elsewhere. Referring to the theme collaboration mentioned above, the respondent of Bol.com approved that it is important to have trusted partnerships with key suppliers of products kept elsewhere. Bol.com wants to improve their parcel delivery service in terms of speed and therefore introduced the 'Collect Today' service. The respondent worked also for Coolblue before and told that Bol.com wants to offer 100% products and Coolblue 100% service. To level the service of Coolblue, Bol.com is investing in the improvement of their service in terms of delivery speed to gain more competitive advantage.

Profile description De Bijenkorf

De Bijenkorf is one of the largest and well-known retailers in the Netherlands and is combining online shopping and in-store shopping. The interview has been conducted of a respondent that is working for the web shop only; to clarify trends relevant for the industry. The driving forces of De Bijenkorf are *Method of Sale, Technology and Market Needs.* De Bijenkorf wants to sell premium products with a belonging service, regarding speed and flexibility. As mentioned above, De Bijenkorf provides special packaging and high flexibility in time and location of their deliveries. These business demands has its consequences for the e-fulfilment centre as well. If a

company demands special types of packaging a 3PL-er has to have the right infrastructures to provide this service.
De Bijenkorf is focusing to sell more products via their online channel. They want to improve this via improved online shopping with De Bijenkorf app that is accessible for all types of devices, but also with iPads in-store. If De Bijenkorf is planning to boost their online business it is likely that the belonging e-fulfilment centre has to provide the possibility to grow in terms of space on the same or a different location. Improving your Omni-channel would also mean that you have to improve the integration of inventory and product variety online, which can only be done by very strong collaboration of both channels. At last De Bijenkorf also wants to offer premium products for a specific type of consumers of the higher market segment. High value goods have to be stored and transported save through the e-fulfilment centre internally.

Profile description Post NL

With over a 2,000 service points and revenue of circa 3.5 billion euros in 2015 Post NL is the biggest post office in the Netherlands. Post NL does the forwarding for both involved respondents in the e-commerce group, being Bol.com and De Bijenkorf.
The driving forces of Post NL are *Return/profit, Technology and Method of distribution.* According to the respondent of Post NL the last years they were more focussed on creating volume and now they want to finally make some profit out of it. Regarding technology an emerging trend within e-commerce is the automation via robotics. Auto-store systems and order picking systems can increase productivity, but this has a lot of consequences for the layout of e-fulfilment centres in terms of space and design. In addition the way of distribution is changing for companies like Post NL. According to the respondent cross docking is an important development to reduce inventory and speed up the delivery process. Cross docking facilities need a lot of space but can also reduce a lot of storage space as well. Post NL also offers more custom-made solutions to maximize the alignment with their clients. For example they serve medical clients wherefore they ship medicines everyday in specific circumstances and they deliver bicycles that they have to install on location. All these custom-made processes need to be designed and integrated in the buildings that store and ship these products.

Summarily out of the profiles of the respondents of the e-commerce group can be concluded that they have very different strategies with different needs that have to be translated into the layout of the e-fulfilment centres to maximize the alignment between the unique internal processes and corporate strategy. This means that e-fulfilment centres has to provide a optimal setting that is custom-made and contains very specific logistic solutions that match the e-retailers' profile. Obviously to optimise custom-made logistic work environments of increased complexity and add value to these processes specific and extensive knowledge is required from the logistic property managers.

8.2.1. Results Third Party Logistic Providers Group

What is the current role of the 3PL-er in adding value to the next generation e-fulfilment centres?
To extract a clear image of the work a 3PL-er does and how a building and its facilities could add value to these activities three in-depth interviews have been conducted. As mentioned above, the involved respondents work for Docdata, DHL and Kuehne+Nagel. Docdata has 2 halls for De Bijenkorf and 4 halls for Bol.com. The other two respondents are used as control groups to verify the information and to extract other relevant issues.

Out of the interviews with the respondents of the 3PL group it becomes clear that the logistic services they provide concern very complex large varying processes, which they internally can control the best. Logistic services a 3PL-er provides involves value added services, receiving, picking, sorting, packing, shipping and a lot more. A shared view of the respondents of the 3PL group is that they can design their own processes like no other can do due to their extensive and specific knowledge about what their clients (the e-retailers) needs and how they should facilitate this in the best way. In addition they are more close to the process and therefore all have an in-house property management department. The main reasons to do this in-house is because they are more close to the process than an external property manager and can immediately act when there is something that needs to be fixed. Having in-house property managers also ensures the continuity of the overall process, which is crucial to retain their clients satisfied and don't lose any profits.

8.2.2. What could the 3PL-er do to add value to the productivity, cost reduction and flexibility of next generation e-fulfilment centres?

The interview with Docdata makes clear what the main internal activities of employees are and how a building can be of added value to perform better. The gross ratio of labour activities consists out of thirty per cent walking through the warehouse and further more out of starting up the pick badge, order picking and checking in (line number 182, transcript Docdata). Therefore it is important to minimize the walking distances for the order pickers to improve the productivity of this process. This can be done to design the processes more efficient and creating a smarter warehouse layout. In addition to add value to productivity the respondent of DHL said that a building must respond right to the amount of logistic in and out flows with its spaces and facilities. The main reason is to respond to the big logistic challenge to dock and unload all the incoming and outgoing transport lines in time.

To reduce costs and improve productivity Docdata is implementing the LEAN method into their processes. This results in staffs that are more specialized doing one thing more productively instead of all-rounders that can do everything on average level. The amount of work they do is also being measured to improve the productivity. The LEAN method is also reducing costs due to a more productive process design. In this way less numbers in staff is needed, which saves costs immediately. In terms of costs the respondent of DHL explained that a trend in property management is to customize logistic buildings into CO2-neutral buildings. This means that they are making the warehouses more sustainable, which affects the cost substantially in terms of utilities. However cost reduction is not the main focus of Kuehne and Nagel, the respondent added that the main thing they do is preventive maintenance, based on long-term maintenance planning to reduce life cycle costs.

In terms of flexibility the respondent of Docdata described that they do not want to implement automation through the whole warehouse because it reduces your flexibility. Approvingly the respondent stated that staff provides a higher flexibility than automation via robotics, due to the fact that you can scale up or down staff more easily during peak or dale seasons and bad or good times in e-commerce. According to the DHL respondent a building can add value to this process by making the loading docks more flexible to facilitate both trucks and smaller busses in their loading process. Furthermore, flexibility is key for the performance of the warehouse, the respondent of Kuehne and Nagel said. Flexibility can be influenced by enough storage capacity with the racks a 3PL-er provides, but also via the basic building structure in terms of column

distances, building height and mezzanine floors. It should be a very universal layout that is useful for other tenants later on as well.

Adding value due property alignment

In addition it is very clear how the design of the internal processes of the 3PL-er are aligned to the strategy of their clients, being Bol.com and De Bijenkorf. Docdata owns an e-fulfilment centre in Waalwijk, which is a perfect location for a warehouse of Bol.com giving their Benelux strategy. The warehouse involves five levels for storing goods, which matches the strategy of Bol.com to offer as many products as possible (see driving forces). Agreeably, Bol.com also prioritises flexibility over automation for the same reason as Docdata does (line number 138 and 147, transcript Bol.com).
According to the interview with DHL the internal layout of an e-fulfilment centre has to be aligned to the strategy of the clients and the type of products they have to be of added value. However, the type of buildings they build will keep the standard logistic building that should not be customized too much in terms of dimensions, because then they could become useless due to their layout for new tenants. It is more useful to build a universal building that can house multiple types of tenants after all.
The respondent of Kuehne and Nagel approved that the building should be aligned to the clients demands and the belonging logistic processes. "The hull of the building is the hull around the logistic process and therefore need to be aligned perfectly", the respondent said. In addition, the clients of Kuehne and Nagel have a lot of specific demands that has their consequences for the building layout. To respond to this they build custom-made purpose-build properties themselves and manage these during the life cycle as well. In this way they offer custom-made building solutions that are in line with what their clients need.

8.2.3. To what extent does the 3PL-er contribute to logistic property management?

Out of the interviews with the three respondents in the 3PL group it comes clear that they all have in-house property managers. Docdata keeps property management as an in-house expertise because they are more close to the process, can immediately act when there is something that needs to be fixed in time and to keep the production going being as productive as possible (line number 126). One of the most important related key performance indicators they continuously check is approvingly the uptime, which shows the amount of orders processed per hour (line number 146). According to the respondent of DHL it is much cheaper to keep the property management expertise in-house with their size of building portfolios, which contains approximately 1.3 million square meters of logistic space. However, the respondent states that with smaller building portfolios it is more likely to outsource property management. The main reasons for DHL to keep property management in-house it standardisation. They can work with fixed contracts, give their buildings a universal look and feel and design their own processes. In this case managing a building portfolio gets a lot more easy, efficient and cheaper.
Also Kuehne and Nagel keeps property management as an in-house profession. The main reason for them to do this is to respond accurate to what their client demands. Because they have a lot of knowledge in-house they can fulfil the demands of their clients the best themselves, which is also their advantage in comparison to the logistic property management. According to the respondent of Kuehne and Nagel a lot of these external property managers do not know much about logistic processes and can therefore not add any value to the

performance of the 3PL-er. In addition the property management concerns high complex and intensive logistic processes and not only the standard maintenance activities. It is also expected that property management as in-house expertise will grow substantially in the future, in specific at Kuehne and Nagel.

To sum things up, in-house property management is very common in the 3PL landscape of today due to it's advantages compared to outsourcing property management to an external property manager. This is also confirmed by the comparison of the quantity the subjects outsource and in-house were discussed in the interviews (see appendix J). The main advantages include that 3PL-ers have more knowledge about the complex internal logistic processes and know better than anyone else what their client wants and how the process should be customized based on that. In addition, in-house property management provides more control over the building and it's processes, due to the close proximity of the 3PL-er and the fact that they can immediately act when there is something wrong. In this way they add value to the continuity of the production and therefore to the productivity of the e-fulfilment centre. Due to the broad differing strategies of today's e-retailers it is of increased importance to align the building and it's internal processes more to the products and logistic flows of the client. To do this the e-fulfilment centre must offer custom-made solutions for each client, which has a lot of consequences for the layout of the building and the work of the property managers and 3PL-ers regarding process designs. To be able to add value to the custom-made logistic processes of a 3PL-er that are based on wide differing e-retail strategies, it requires the property manager to have extensive and specific knowledge in this. Therefore it would be logic that 3PL-ers do property management in-house and one of their main arguments is that they know the best what their clients want and how to customize these processes based on that.

8.3.1. Results Logistic Property Management Group

What could the logistic property manager do to add value to the productivity, cost reduction and flexibility of the next generation mega e-fulfilment centres?

To clarify how the logistic property manager of today is able to add value to the productivity, cost reduction and flexibility of the e-fulfilment centres three in-depth interviews have been conducted in the logistic property managers group. The involved respondents include JLL (400,000 sq. m of logistic space), DTZ (1,000,000 sq. m of logistic space) and Cushman & Wakefield (10,000,000 sq. m of logistic space in Europe). These respondents are the three biggest players in managing logistic properties and therefore industry comprehensive.

8.3.2 What are the fields of expertise of the logistic property manager?

Generally the backbone of the profession property management consists out of technical management, commercial management and financial/administrative management. Technical management includes keeping the building up to date according to all agreed conditions, which involves all type of building related adjustments such as floor restorations, apply LED-lights, replace docking stations. Commercial management includes retaining user satisfaction and managing (new) lease agreements. The financial management involves reporting service costs to the owners and check if the lease obligations are being paid as agreed up on.

Furthermore the logistic property managers see themselves as a connector between user and owner of the building. This means that if the users have any additional demands for the

building the property manager will discuss this on request with the owner. However, they are of the opinion that they don't have to do this proactively, because if the user has a certain need they will let them know. Nonetheless this is in contradiction to what Edwards & Ellison (2004) stated about the role of the property manager in the literature review. The property manager should be proactive and interactive, working with the board of directors to anticipate the business's needs, and planning ahead to translate those needs to property requirements (Edwards & Ellison, 2004). As mentioned above to do this really extensive and specific knowledge about logistic processes and custom-made work environments is required. Despite, all logistic property managers involved in the research admit that they possess not enough knowledge about the internal logistic processes of today's e-fulfilment centres to add value proactively. In addition, the involved respondents did not know enough about the latest systems that are trending in the 3PL business of today (e.g. automated order picking systems and cross-dock facilities). Nevertheless, these kinds of systems became part of the core business because of their crucial role within the e-fulfilment centre. The main reason why the logistic property managers do not have extensive and specific knowledge about internal processes in the e-fulfilment centres is because they work for the building owners and care primarily about building-related issues. In contradiction today's e-fulfilment centres are mostly purpose build and offer custom-made solutions to facilitate the e-retailers strategy and the belonging work environment for the 3PL-er in the best way.

Furthermore the competitive advantage of a logistic property manager to the 3PL-er in the profession logistic property management has also been discussed. The logistic property managers address that they have more building-related knowledge and know better how to handle with building owners than the 3PL-ers. This makes sense, although it is not essentially part of adding value to the user. Due to the fact that today's e-fulfilment centres are more customized based on user requirements, the importance of user satisfaction is also of increased interest for building owners. Agreeably, increased user satisfaction can lead to new lease agreements and as a consequence to a lower vacancy, which is of high importance to the owners.

8.3.3. To what extent is the logistic property manager able to add value to the next generation e-fulfilment centres in terms of cost reduction, productivity and flexibility?

As described above the landscape for the logistic property manager has changed, due to more purpose built properties that offer custom-made logistic solutions for the 3PL-er that are aligned to belonging e-retail strategy. As mentioned, more extensive and specific knowledge is required from the logistic property manager than they possess currently to be of added value as a connector between building -user and -owner. Out of the interviews it comes very clear that the logistic property managers agree that they are currently not able to add value to the cost reduction productivity or flexibility of e-fulfilment centres, due to their minimal knowledge about the internal logistic processes of a 3PL-er and the varying demands that come from the dynamic e-retail industry. For example the respondent of JLL stated: *"When you ask me if we do add any value to the logistic real estate of our clients I'd say minimal, because it requires really specific knowledge that we don't have yet. We manage building-related aspects only; everything that the users do inside is up to them."* In addition, the other respondent in the logistic property management group from DTZ approves the tendency. *"Currently we don't have all the knowledge to really add value to e-fulfilment centres and in specific the internal processes of the users,"* the property manager said. Even though this logistic property manager does not possess the needed logistic knowledge to add value he is of the

opinion that a logistic property manager can only add value to an e-fulfilment centre, when he is involved in the development stage. Otherwise it would be to late to have a part in adding value during the life cycle of such buildings.

The value added drivers of van der Zwart and van der Voordt

To really check in detail on which aspects the property manager eventually could be of added value the aspects of van der Zwart and van der Voordt (2011) that are described in the literature review (see chapter 4.5) have been discussed. In terms of cost reduction the property managers agree that they cannot add any value to the smart design and efficient use of space of the building, without being involved in the development process. However they were all aware that they could reduce costs by doing preventive maintenance based on long-term maintenance planning. By doing accurate preventive maintenance costs for large-scale maintenance can be reduced, which reduces the total life cycle costs of a property and might even extend the life cycle. In addition, reducing costs via the purchase power large property management organisations have could result in attractive discounts for the users and owners.
In terms of flexibility the property manager can be of added value in catching opportunities to extend the building and the related building functions (functional adaptability), because they can connect to the owners more easily than 3PL-ers. In addition the property managers have a technical team and a commercial team that can facilitate technical building extensions or acquiring new space. The technical management team can also help to make adjustments to the building, for example in changing the docking facilities (technical adaptability). However, they do not handle proactively and therefore this is more service orientated than an aspect from where they proactively add value. In addition, the respondent of DTZ stated that they couldn't add value to flexibility aspects if they haven't been taken into account in the development stage of the building, which is referring to the basic structure of the building that determines partly the level of flexibility of a building.
In terms of productivity the logistic property managers all agreed that they cannot add any value to this attribute, due to the aspects of van der Zwart and van der Voordt (2011) are more user-related in their opinion. These aspects concern improving the logistics of primary internal processes and shorten walking distances between the related functions. To add value to these aspects the property manager has to be more involved with the plans and ideas of the user (3PL-ers) and also has to gain knowledge about the internal logistic processes. Nonetheless, the 3PL-ers are convinced how a building can add value to their internal productivity and are adding value themselves to this value-added driver. According to the 3PL-ers a building can add value to the performance by providing high efficiency. Facilitating the logistic flows accurately via a smart layout can do this. Aspects that can help to do this are docking stations and sufficient space behind these docking stations to operate efficiently.

8.4.1. Results Reflected In The Alignment Model of Singer, Scheffer and Van Meerwijk

How can there be value added to the next generation e-fulfilment centres, according to the alignment model of Singer, Scheffer and Van Meerwijk (2006)?

A reduced confrontation matrix of Singer, Scheffer and van Meerwijk (2006) is shown in figure 8. This framework shows only the selected added values for this research and their intersection points (red squares) with the driving forces of Nourse and Roulac (1993). The driving forces

that have been selected by the respondents of the e-commerce group and have an intersection point with the involved added values have been marked (1,2,3).

ADDED VALUES

DRIVING FORCES	Productivity	Costs	Flexibility
Products	1	1	
Market			2
Technology	2,3		2,3
Production			
Resources			
Distribution			
Sales		2	
Growth			
Profit		3	

Intersection Point
1 Bol.com
2 De Bijenkorf
3 Post NL

Figure 8: Intersection scheme by Singer Scheffer and van Meerwijk (2006)

As a result the e-commerce respondents, consider nearly all-relevant intersection points as important, except for Production and Resources. This shows that the selected added values for the research can be considered as relevant for the alignment with the e-commerce industry after all.

Today's e-retailers want to serve their online consumers as good as possible to gain competitive advantage. To do this they want to offer high-speed parcel delivery services for low costs with a high flexibility in delivery time, location and packaging. As mentioned before, the strategies of how they want to do this differ. The respondent of De Bijenkorf stated that technology is an important instrument to improve online shopping and the integration of the Omni- channel. Flawless online shopping and fast parcel delivery services can lead to improved sales in this industry (Barclays, 2014). Technology could also help being more productive and achieve a higher up-time for the total process via new technological trends in the industry, such as automated order picking systems, robotics, RFID tags and cross-docking systems (see appendix L). The integration of these systems has large consequences for the property layout and has to be taken into account by the logistic property managers of today.

Most e-retailers are focused on the market they are in and the type of the consumers they serve. In the end the e-retailers want to make a profit by offering a large product variety to their consumers. A large product variety means for the warehouse that there should be plenty enough racks to store all type of products tactically. According to the respondent of Docdata, the racks have to be positioned such that there are smart order picking routes within the warehouse, which reduces the walking distance for each employee.

8.4.2. Comparison 3PL-er and external property manager

What does the difference in added value services between the logistic property manager and the 3PL-er mean for the profession of logistic property management?

In the scheme below there is a customized framework of both the 3PL-er as in-house property manager and the logistic property management profession that can be extracted out of the interviews. In the first column measurable items defined by van der Zwart and van der Voordt

(2011) are awarded after they have been discussed in the interviews. In the second column there is a description of the awarding of each measurable item. In the third column there is an overview of the average score per added value.

ADDED VALUE OF THE 3PL-ER		
② Life cycle costs ③ Efficient space use ② Smart design ① Purchase power	Efficient space use is crucial for the 3PL-er to have more inventory or reduce space needed. They do this by designing the building in a smart way (robotics and pick towers). The involved 3PL-ers do preventive maintenance as well and have also purchase power of utilities due to their seize.	Costs 66%
③ Logistic Processes ③ Reduce Walking Distance	Reducing walking distance is very important because it contains 30% of the labour activities. The 3PL-er designs its own primairy processes and know how to control it like no other.	Productivity 100%
② Spatial adaptability ① Technical adaptability ③ Organisational Adaptability ① Extension building ② Extension building fucntions	The 3PL-er is able to adapt the building to its needs in terms of spatial, functional or organisational needs. For technical adjustments to the building hull they need to cooperate with the owners to get things done. The 3PL-er is less able to handle the commercial aspects of leasing or building additional space jet.	Flexibility 60%
ADDED VALUE OF THE LOGISTIC PROPERTY MANAGER		
② Life cycle costs ⓪ Efficient space use ⓪ Smart design ③ Purchase power	Via prefentive maintenance and long-term maintenance planning and the purchase power and the belonging discounts for utilities the logistic property manager is adding value to cost reduction. Smart design and efficient use of space are more things for the development stage of the building, according to the property manager.	Costs 42%
⓪ Logistic Processes ⓪ Reduce Walking Distance	According to the logistic property manager optimising primairy logistic processes and reducing walking distances are user-related aspects and cannot be optimised by the PM-er.	Productivity 0%
① Spatial adaptability ② Technical adaptability ① Organisational Adaptability ③ Extension building ② Extension building fucntions	The PM-er is not proactive in adding value to these aspects. However, on all of these aspects the property manager can be of added value if the user requests a demand, due to their role as connector between user and owner. Especially with the technical and commercial teams they can help to make technical and extension related adjustments	Flexibility 60%

Figure 9: The added value of the 3PL-er and the property manager

The scores above show that the 3PL-er does add more value to the aspects cost-reduction and productivity than the logistic property manager does. The difference is mainly caused by the finding that the property manager does not have sufficient knowledge about the internal processes and how the property should be aligned to add value to the performance of these processes. Approvingly, in the scheme is clearly defined that the property manager scores low on related aspects such as internal logistic processes, reduce walking distance, efficient space use and smart design of the property. The scheme also shows that unlike the property manager, the 3PL-er scores very high on these aspects. Furthermore, the scores for the added value flexibility are sixty per cent for both professions. The property manager can add more value to building related adjustments regarding flexibility, such as technical adaptations or building

extensions. This comes because the backbone of the property managers' business consists out of a specialized technical team, commercial team and financial team. However, the 3PL-er is more specialized in adding value to the organisational, functional and spatial part of flexibility. This comes mainly due to that 3PL-ers know the best how to align the building to their own processes.

These findings are in line with the framework of Jensen (2010) out of the literature review. In this framework is stated that costs and productivity are more related to the staff of a property, which is in this case the 3PL-er, and adaptation (flexibility) is more owners-related. This is approved by the low scores of the property manager on cost reduction (42%) and productivity (0%), which are according to the framework of Jensen (2010) more 3PL-related aspects. In addition, the property manager scores relatively well on the attribute flexibility (60%).

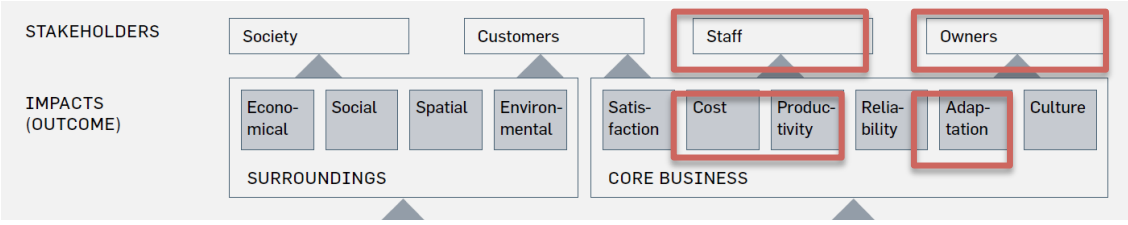


Figure 10: The added value map of Jensen (2010)

The differences in value-added services both parties provide can result in a growing role for the 3PL-er in in-house property management, because they are able to add more value to the productivity and cost reduction of their own processes by doing property management themselves. This could have an impact on the big external property management companies like DTZ, JLL and Cushman & Wakefield, meaning that their role in adding value could diminish the coming years. Evidently, the property managers are not aware of the problem they face. Quite ignorant the property manager of Cushman & Wakefield said: "I don't think we lose a lot of business because of this development. An owner distrusts the user naturally, so the 3PL-er will never walk in our shoes, because the owners of the properties in our building portfolio trust us".

9. Discussion

As described in the literature review Edwards and Ellison (2004) stated that properties can help to add value to the business, by providing the optimum environment to generate productivity from the occupiers. This means for the property manager because her role is to provide options to achieve the overall business goals and to help solve business problems with property solutions. The property manager should be proactive and interactive, working with the users to anticipate the business's needs, and planning ahead to translate those needs to property requirements (Edwards & Ellison, 2004). However, out of this research comes clear that the logistic property managers of leading property management organisation in the industry are not able to provide the users of their clients with logistic property solutions and are not proactively working together with users to anticipate the business needs into property requirements. The main reason for this is that they do not possess sufficient specific knowledge about the internal primary logistic processes and the needed property-related equipment. Especially for productivity (see 0% score in framework in figure 9), the property managers are

of the opinion that they cannot add any value by optimizing an occupier's environment, because this concerns more user-related aspects. Per contra, the interviews showed that the 3PL-er does in-house property management proactively and interactively and is continuously anticipating on the (e-retailers') business needs with property and facility related measures.

Another subject that the literature review described was that JLL (2016) stated that logistic property management could help to reduce costs and optimize flow and improve services if they possess extensive logistic knowledge. Additionally they could help to get products to customers more efficiently and effectively by optimising the current setting (JLL, 2016). Per contra the respondent of JLL stated: *"When you ask me if we do add any value to the logistic real estate of our clients I'd say minimal, because it requires really specific knowledge that we don't have yet. We manage building-related aspects only; everything that the users do inside is up to them."* This finding is very interesting given the research unit within JLL (2013) has published a report called '*E-commerce boom triggers transformation in retail logistics*' (see literature review), that has led to this research initially. In this report they introduced the mega e-fulfilment centre as being one of the three distinct types of logistics facilities that should fulfil the demands of the growing e-commerce industry (Jones Lang LaSalle , 2013). Evidently, other departments like the property management department apperently do not use this knowledge in their daily profession to increase their added value.

Furthermore the literature review elaborated on the drivers of logistic space, defined by Prologis (2014) as reverse logistics, product variety, B2C shipment and inventory. In figure 11 there is an overview of the quantity of the codes mentioned in the interviews by the respondents. How inventory should be managed and how the property can help to provide an optimal setting for this was discussed the most in the interviews. It's a hot topic, because how a 3PL-er is managing her inventory determines the amount of space needed to store products. Important for this aspect is how the racks are placed in the layout of the property and how they are being used (taking the throughput into account). Furthermore it is important how the property responds to the logistic in and out flows with the docking stations it provides, according to the quantity of the topic B2C shipment was mentioned (19x). Reverse logistics and product variety were less mentioned themes in the interviews, however it was discussed that product variety determines also the space needed for the inventory.

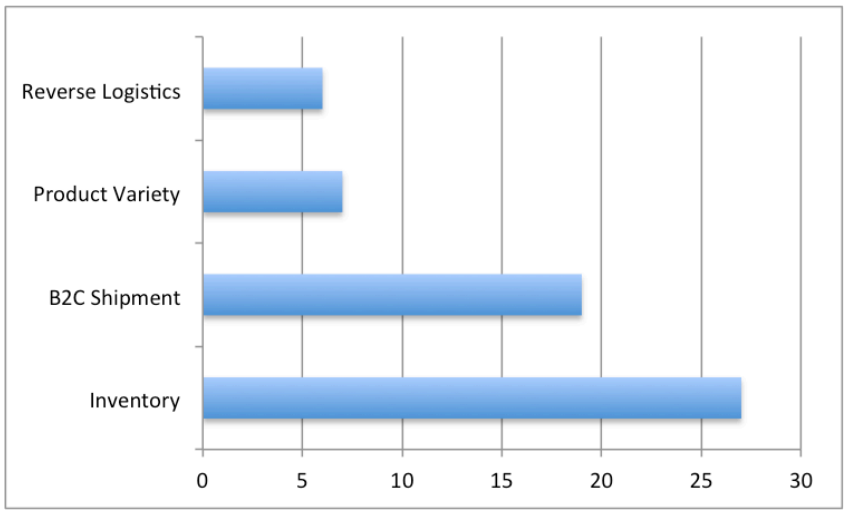


Figure 11: Quantity of codes spatial drivers of Prologis (2014) mentioned

10. Conclusion

The main research question is: *What is the future influence of the logistic property manager in adding value to the next generation mega e-fulfilment centres?* To answer this question this study elaborated on the influence of the logistic property manager in adding value to the next generation mega e-fulfilment centres. Out of the research can be concluded that the logistic primary processes in and around e-fulfilment centres increased in complexity. The way the internal processes are organised and how value-added drivers of productivity, cost reduction and flexibility are integrated depend strongly on the wide varying e-retail strategies. Today's e-fulfilment centres are maximal aligned to these e-retail strategies by providing custom-made (logistic) solutions to add value, which has high consequences for the property layout. Value-added services are becoming more user-related, meaning they have a lot to do with providing an optimal setting for a specific logistic user to perform better by customizing the property. This means for the logistic property manager that they need to possess specific and extensive knowledge about logistics processes that are related to the e-fulfilment centre to really be of added value. In the interviews with three leading property management firms it became quite clear that the logistic property managers currently do not possess this type of logistic knowledge jet. However, the interviews with the 3PL-ers in this study showed that they actually do already posses very extensive and specific knowledge to add value to their own performance. That is also the reason why all involved 3PL-ers have their own in-house property management department, which directly anticipate on building and facility-related needs of the user. In this way they can directly act when there is something wrong, they have more control due to they are more close to the process and they know the best what their clients want and how the building should be designed based on that.

Summarily it can be concluded that the property manager would not be able to add value with only building-related knowledge to today's e-fulfilment centres and that they have to gain more user-related knowledge to have any influence in adding value to the next generation e-fulfilment centres in the future. Hence, as a connector between building users and owners it is of high importance that they can act proactively to anticipate the business's needs of the 3PL-er and to translate those needs to property requirements to retain their clients satisfied. If not so, the external logistic property manager is less needed for both the user (3PL-er) and the owner of the building. In addition, in-house property management by 3PL-ers is expected to continue to grow and external logistic property managers could lose a lot of their business to these competitors.

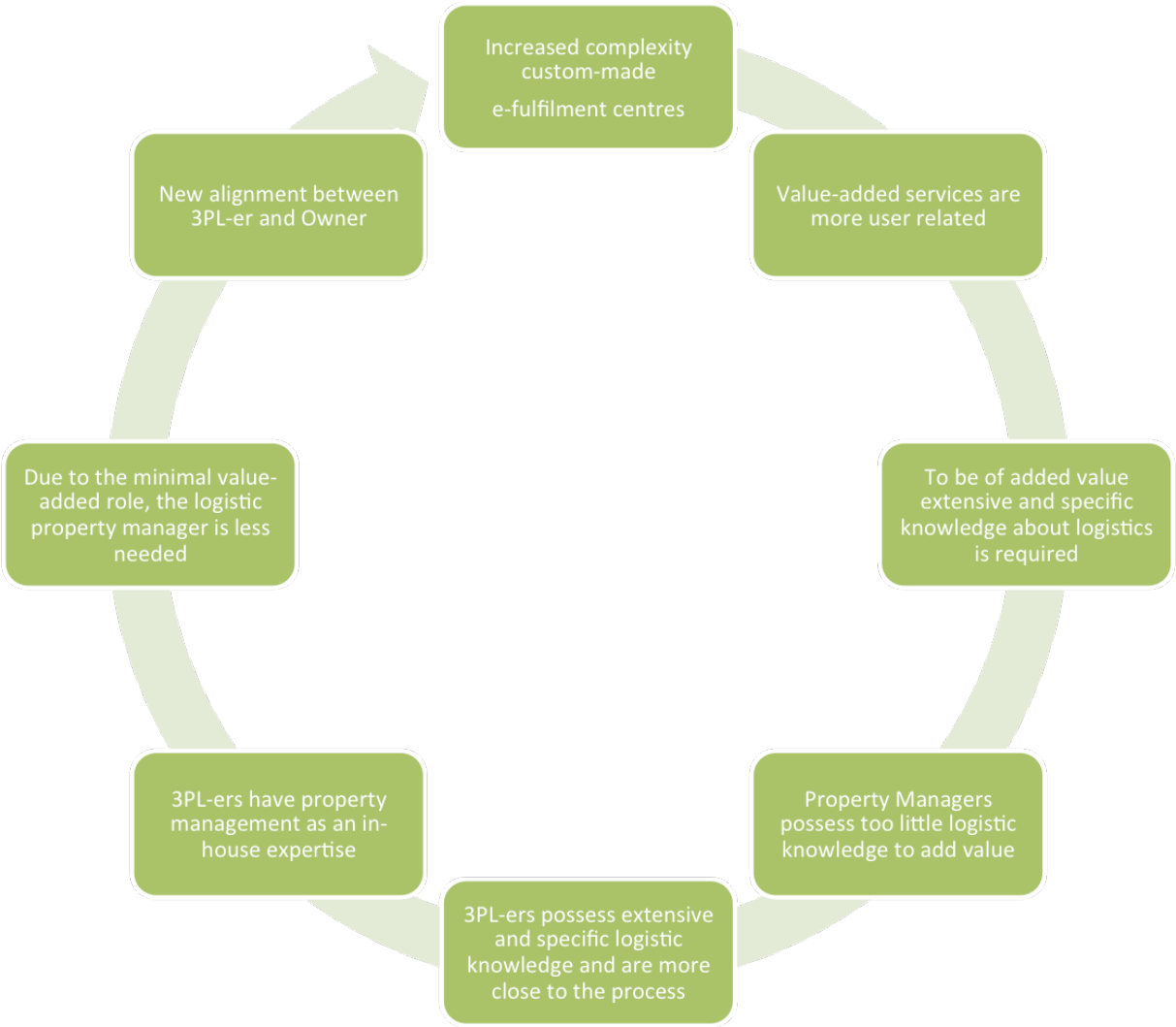


Figure 12: Conclusion of the research in a scheme

11. Recommendations

According to the alignment model the in-house property management department of 3PL-ers are more able to add value to their performance as well as the alignment with the belonging e-retailer than the external logistic property manager. This phenomenon plus the growth of the 3PL property management profession in the industry would be resulting in a new alignment between 3PL-er and building owner instead of the supposed alignment between the (external) logistic property manager and building owner (as shown in the conceptual framework of the research in figure 6). The new alignment of 3PL-er and building owner in the business to consumer e-commerce chain is shown in figure 13. The framework shows that the role of the external logistic property manager is changed, which means that they have a less crucial role as a connector between 3PL-er and owner in the B2C e-commerce chain. It is recommended that the external logistic property manager will be a more flexible profession that is responsive to call-up shift instead of working with fixed contracts and yearly fees in the case of e-fulfilment centres. The recommended value-added tasks that belong to the property manager concern

building-related repairs or maintenance matters, which are not performed continuously during a fixed period of time (link with owner). Furthermore, the external logistic property management department can add value with their commercial unit, responding to additional demands regarding spatial extensions or leasing additional locations (link with 3PL-er). With this new alignment the 3PL-er will perform the property management services in-house, adding value to their own performance and directly communicating with the building owners. In this case the 3PL-er has no barriers in the communication with the owners anymore and is more able to directly add value to their primary logistic processes instead of depending on an external property manager that does not have the required knowledge about this to do this.

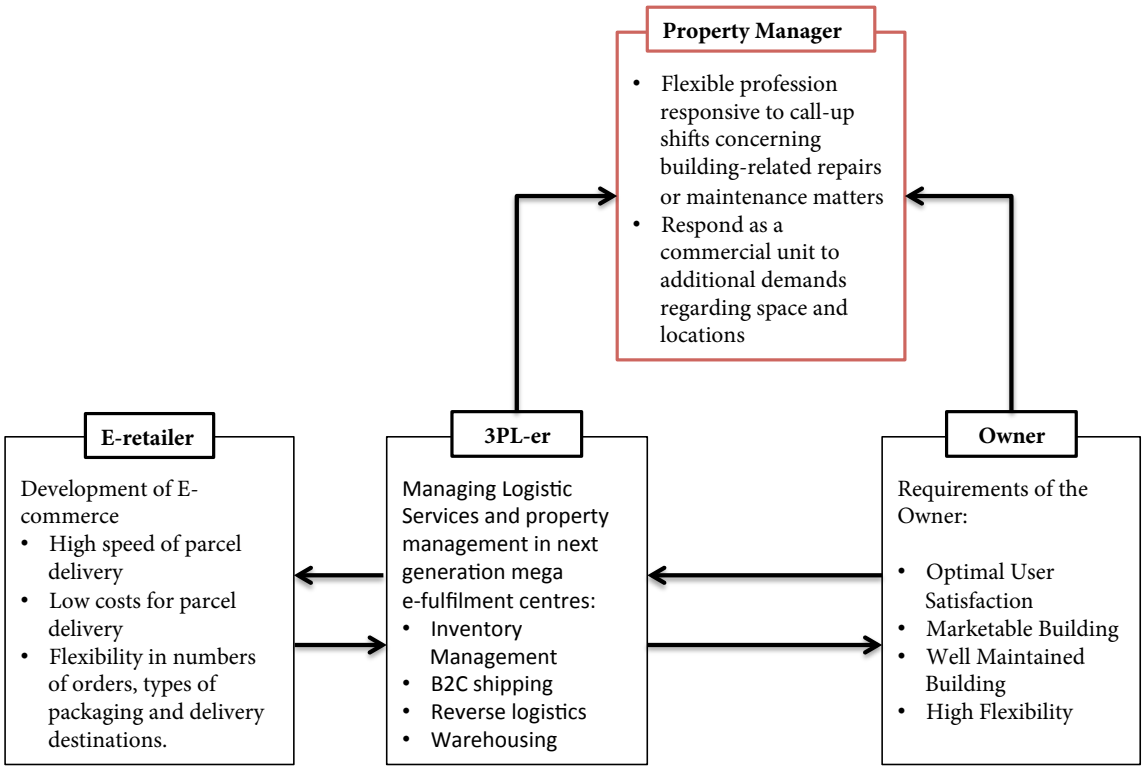


Figure 13: The new alignment in the business to consumer e-commerce chain.

According to the new roles of both the external logistic property manager and the 3PL-er as in-house property manager several follow-up studies can be recommended. Additional research about the new relationship in the supply chain between 3PL-er and owner is needed to make the results feasible and applicable for the FREM field. An important aspect for the follow-up research is what competencies the 3PL-ers has to develop to be a complete value-added in-house property manager. According to the interviews with the external property managers, they see their competitive advantage still in terms of building-related knowledge, network and their experience in communicating with building owners. This means that if the 3PL-er wants to fully take over the property management of e-fulfilment centres, they have to improve such competencies in the future. Furthermore, it would be interesting to do a survey amongst logistic building owners what they think of the current situation (with external property manager) and the new situation being directly connected to the user (3PL-er). The survey should also include test attributes that are important for the building owner to see if the 3PL-er can really add value to this.

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