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Logistics capabilities for sustainable competitive advantage

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The purpose of this article is to explore how sustainable competitive advantage is generated in two Swedish best practice companies that successfully exploit logistics as a source for competitive advantage. Using a theoretical framework based on the resource based view of the firm (RBV), this research elaborates on the link between operational and dynamic logistics capabilities and sustainable competitive advantage. The findings conclude that a sustainable competitive advantage is based on a combination of efficient and effective logistics operations and well functioning, adjusted, in-house developed IT systems. This operational capability is in turn sustained through five dynamic capabilities: Managerial knowledge and presence, Cross-functional teamwork, Control, Learning, and Supply chain relationships.

Keywords: Operational capabilities; Dynamic capabilities; Case study

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1 Introduction

Logistics has traditionally been considered a matter of operational activities, squeezed between the prerequisites set by the marketing and production functions, with a secondary role in the strategy of the firm. When production is in focus, logistics is used as a buffer stock to support a production push philosophy. When marketing is in focus, logistics has to carry a speculation stock to support a market expansion philosophy with short lead times (Abrahamsson, 2008). Logistics operations have been a matter for the creation of what Porter (1996) labels operational effectiveness, limited to facilitate short term profitability in a hypercompetition race towards a productivity frontier (Porter, 1996). In recent years, however, the view of logistics has changed. Today we see several empirical examples of companies such as Wal-Mart, Dell and Hewlett Packard (O'Marah & Hofman, 2009) where logistics has a clear role in the strategy of the firm and is a driver for corporate level profitability and growth (Abrahamsson et al., 2003). These companies have in common superior logistics systems that are utilised as a strategic weapons against competitors.

In line with the increasing evidence and number of empirical examples, the strategic role of logistics has also been recognised among logistics scholars in recent years (Autry et al., 2008; O'Marah & Hofman, 2009), and the link between logistics performance and strategic management has been emphasised (Cheng and Grimm, 2006; Ketchen and Giunipero, 2004; Stank et al., 2005; Mentzer et al., 2004; Esper et al., 2007; Hult et al., 2007; Tracey et al., 2005). In particular, the resource based view of the firm (RBV) has shown to be fruitful for the exploration of the role of logistics in the strategy of the firm. As such, RBV explains why some companies outperform others over time (Barney & Clark, 2007). Taking a hierarchical perspective on capabilities (Winter, 2003; Helfat et al., 2007; Collis, 1994), it can be argued that a company's competitive advantage is based on operational capabilities, i.e. certain sets of resources bundled into valuable, rare and difficult to imitate capabilities (Barney & Clark, 2007). To sustain the competitive advantage over time, dynamic capabilities are in turn needed for the creation, extension and modification of operational capabilities (Helfat et al., 2007).

From a resource based perspective, the notion of logistics resources as being the main source of a company's competitive advantage is not new. Logistics practices have previously been discussed as operational capabilities (Ketchen and Giunipero, 2004; Olavarrieta & Ellinger, 1997). For instance, Esper et al. (2007) discuss customer focused capabilities, supply management capabilities, integration capabilities, measurement capabilities, and information exchange capabilities. However, the recent development of RBV into dynamic capabilities has so far been given little attention in logistics literature (Esper et al., 2007) and therefore a more comprehensive picture of how logistics capabilities are linked to sustainable competitive advantage is missing.

The purpose of this article is to explore how sustainable competitive advantage is generated in two Swedish best practice retail companies that successfully exploit logistics as a source for competitive advantage vis-à-vis competitors. Without own production, patents or other specific attributes, and operating on commodity markets, the case companies have grown extensively over a number of years, with above-normal profit in comparison to competitors. From a resource based perspective it can be argued that the companies' success is based instead on superior logistics operational and dynamic capabilities.

In this paper, we first outline the methodology for the research. Thereafter we develop a conceptual starting point for our research based on the resource based view of the firm. Third, we present and analyse the case companies with the outlined resource based structure. Finally, conclusions are drawn and implications for practice discussed.

2 Methodology

This research has been based on a case study approach (Yin, 2003; Eisenhardt, 1989) where emergent patterns in logistics practices are explored and empirically discovered. The case companies have been chosen with theoretical sampling (Eisenhardt & Graebner, 2007) in mind, meaning that they are not to be considered as representative of companies in general; instead these companies have been chosen because they are expected to replicate or extend the emergent theory (Eisenhardt, 1989). As such, they are particularly suitable for the illumination and extension of relationships and logic among constructs (Eisenhardt and Graebner, 2007). In a similar way Flyvbjerg (2006) argues that a random case selection within a given sample may not be the most appropriate strategy; instead cases with rich information content should be selected as they often represent some kind of extreme. Such cases better facilitate a deeper understanding of the causes behind a given problem, and since this is desired more than the description of the symptoms, extreme cases are often preferable. As stated above, the two selected case companies are considered to represent best practice when it comes to logistics performance, e.g. from the world class logistics frame of reference defined by Bowersox et. al. (1999) and from the fact that they have a proven higher growth rate and profitability compared to industry standard. Hence they can be considered to be what Flyvbjerg (2006) labels as extremes.

The focus for the analysis has been on operational and dynamic capabilities in accordance with RBV literature (Barney, 2001b). Logistics related operational capabilities, embedded in company activities and functions, have first been analysed from Barney & Clark's (2007) structurally oriented VRIO framework (Valuable, Rare, Imperfectly imitable, Organisation), which has been used for its comprehensiveness and clarity. Thereafter, to avoid critique of being tautological (Eisenhardt & Martin, 2000), dynamic capabilities that moderate the operational capabilities have been identified in a separate, second round of analysis.

The empirical data collection was conducted over a period of more than two years, with several visits to the companies' headquarters and central warehouses. The initial data collection took place during the winter of 2006-2007, in the form of interviews with top management teams, including the CEOs. Secondary material such as annual reports and newsletters was collected and studied on a continuous basis until a second round of interviews with members from the top management teams were conducted during autumn 2008 and spring 2009. First contacts and interviewees at each company were the CEO and COO, who, together with the authors, identified further suitable interviewees in the companies until the empirical data was to be considered to have reached theoretical saturation (Eisenhardt, 1989). The interviews can be described as semi-structured (Yin, 2003), focusing on the companies' strategies, learning and development behaviour, and management styles. All interviews were taped and later transcribed. To further strengthen the analysis, citations have been extracted from interview transcriptions.

Overall, this research has followed the research criteria of credibility, transferability, dependability and confirmability to ensure the legitimacy of the findings (Halldorsson and Aastrup, 2003). These criteria are considered suitable for 'soft' logistics research issues such as this research represents (Halldorsson & Aastrup, 2003). Credibility has been ensured through the review of written material by the interviewees, revisits and a second round of interviews with the same people, as well as workshops where results have been presented. Transferability of our results has been met through purposeful descriptions of our cases and presentation of our analysis, enabling critical understanding from the reader. Dependability has been obtained by data triangulation (Yin, 2003) whereas maintaining a strong chain of evidence between interview protocols, extended case descriptions and constructs in the analysis (i.e. a solid theoretical basis in the analysis), has ensured confirmability.

3 The resource based view of the firm

The resource based view of the firm has its roots in a reaction to Porter's (1985) work where it is suggested that a company's strategy is centred around market power and environmental models (Barney & Clark, 2007; Barney, 1991; Porter, 1985). RBV considers companies as bundles of resources (Wernerfelt, 1984) that can be controlled and managed in such a way so that competitive advantages can be achieved. Competitive advantage is defined in terms of economic net value gained, where either greater benefits are enhanced with the same costs (in comparison to rivals) or the same benefits as rivals are produced to lower costs (Barney & Clark, 2007). Contrary to the environmental models, RBV assumes that (1) companies have access to different resources leading to competitive advantage and that the factor market for resources are heterogenic, and (2) resources may not be highly mobile, i.e. are difficult to imitate (Barney, 1991; Barney & Clark, 2007).

In recent years RBV literature has been extended towards a dynamic view on resources and how they are created, extended and modified over time (Helfat et al., 2007). To structure the RBV body of literature, it has been suggested that capabilities can be organised in different hierarchical levels (Zollo & Winter, 2002; Collis, 1994; Esper et al., 2007; Winter, 2003), where competitive advantage is enhanced by structural, momentary operational capabilities. explaining “how we earn a living now” (Winter, 2003), “at a point of time” (Teece, 2007). The scope of time during which an operational capability constitutes a competitive advantage may be more or less stretched out, but in a dynamic environment operational capabilities are always temporary. Therefore, operational capability needs to be coupled with dynamic capabilities that create, extend and modify the operational capabilities over time (Helfat et al., 2007), see Figure 1.

Figure 1: Dynamic and operational capabilities and their link to sustainable competitive advantage

3.1 Operational capabilities

Capabilities, defined here as “complex bundles of individual skills, assets and accumulated knowledge exercised through organizational processes, that enable firms to co-ordinate activities and make use of their resources” (Olavarrieta and Ellinger, 1997, p. 563), are often difficult to find due to their complexity and cross-functional existence (Day, 1994; Grant, 1991; Hamel & Prahalad, 1994; Stalk et al., 1992). As empirical indicators for sustainable competitive advantage, Barney & Clark (2007) argue it must be valuable, rare and imperfectly imitable.

A capability is considered as *valuable* when it improves a company's efficiency and/or effectiveness (Barney, 1991; Barney & Clark, 2007). Resource based literature (e.g. Peteraf, 1993; Grant, 1991) often expresses value in terms of economic rents, which can be defined as returns to a factor in excess of its opportunity costs (Barney & Clark, 2007). Peteraf (1993) presents two types of economic rents: the Ricardian and the monopolistic rent. The Ricardian rent is decided by the excess return caused by more efficient usage of resources where inelastic supply is assumed (Barney, 2001b, Barney & Clark, 2007). The monopolistic rent is caused by a monopoly situation, i.e. when a company can earn money due to scarce competition rather than through more efficient usage of resources. A company can gain from both types of rents at the same time, which means that the rents (i.e. value) are caused by both more efficient usage of resources than their competitors and more strategic, monopoly situations (Peteraf, 1993).

In order to be a source for competitive advantage, the capability must also be *rare*, i.e. not possessed by many other competitors. As Barney (1991) states, the same reasoning is also valid for bundles of resources if they are all needed in order to implement a strategy. Exactly how rare the capability or resources must be in order to form the basis for a competitive advantage is difficult to say. In general, a capability should be considered rare as long as the number of owners of the capability is lower than the number needed for perfect competitive dynamics in an industry (Barney, 1991).

Having a valuable and rare capability provides a company with a "first mover advantage" vis-à-vis competitors. However, in order to avoid replication by competitors, the capability at hand must also be *imperfectly imitable* (Barney, 1991), i.e. too difficult or too costly for other companies to obtain. To sustain such imitability, RBV acknowledges the importance of a company's history for the existence of capabilities. Thus, a particular history can explain the possession of a certain capability as well as the difficulties for other companies with another history to acquire it (Barney & Clark, 2007). Except for history dependency, imitation may be difficult due to the fact that the link between a particular capability and the company's sustainable competitive advantage is unclear, i.e. is causally ambiguous (Grant, 1991; Teece et al., 1997). An additional reason for being imperfectly imitable is when the capability is a complex social phenomenon, in which personal relationships, reputation among customers or a specific company culture plays an important role (Barney, 1991)

Apart from having a valuable, rare and imperfectly imitable capability, it is also necessary to have proper *organisational processes* that can successfully exploit it (Barney & Clark, 2007). These processes are often named complementary processes and include features such as formal reporting structure, explicit management control systems, and compensation policies (Barney & Clark, 2007).

3.2 *Dynamic capabilities*

In recent years, as markets and industry settings have been changing faster, the question of how to create, expand and modify operational capabilities has become increasingly important (Teece et al., 1997; Esper et al., 2007; Gagnon, 1999; Teece, 2007). As a natural extension of RBV the concept of dynamic capabilities has been introduced as a means to deal with this question (Eisenhardt and Martin, 2000; Teece et al., 1997, Barney, 2001b). Dynamic capabilities may perhaps be best approached on a somewhat metaphorical level as the many, and often relatively open-ended definitions indicate, see Table 1.

Table 1: Definitions of dynamic capabilities

Author	Definition
Teece et al., 1997, p. 516	"the firm's ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments."
Eisenhardt & Martin, 2000, p. 1107	"The firm's processes that use resources—specifically the processes to integrate, reconfigure, gain and release resources—to match and even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die."
Zollo and Winter, 2002, p. 340	"a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness"
Lopez, 2005, p. 661	"Dynamic capabilities are complex, higher order organizational processes which provide adequate conditions for the modification and renewal of the firm's stock of business assets"
Helfat et al., 2007, p. 4	"the capacity of an organization to purposefully create, extend, or modify its resource base"
Teece, 2007, p 1319-1320	"to continuously create, extend, upgrade, protect, and keep relevant the enterprise's unique asset base.... Dynamic capabilities include difficult-to-replicate enterprise capabilities required to adapt to changing customer and technological opportunities. They also embrace the enterprise's capacity to shape the ecosystem it occupies, develop new products and processes, and design and implement viable business models."

Dynamic capabilities only contribute indirectly to a company's competitive advantage and do not replace the operational capabilities (Eisenhardt & Martin, 2000; Winter, 2003; Helfat & Peteraf, 2003; Zollo & Winter, 2002). Expressed differently, dynamic capabilities contribute to the sustainability of the competitive advantage, but on their own they cannot be a source for competitive advantage (Eisenhardt and Martin, 2000).

Dynamic capabilities are often described as routines present in the company's managerial and organisational processes (Teece et al., 1997; Zollo & Winter, 2002), for example, as "the way things are done in the firm, or what might be referred to as its routines, or patterns of current practice and learning" (Teece et al., 1997, p. 518). Teece et al. (1997) argue that the processes play three roles: (1) the integration and coordination of activities both internal and external to the company, (2) the facilitation of learning on an individual as well as on an organisational level, and (3) the reconfiguration and transformation of the company's asset structure, i.e. its resources/capabilities.

Eisenhardt & Martin (2000) have a similar view when they argue that dynamic capabilities are concerned with the integration of resources. For instance, strategic decision making can be regarded as a dynamic capability when managers pool different types of expertise into a strategy for the firm. Dynamic capabilities can also be about reconfiguration of resources within firms; replication can be such a dynamic capability. Another type of dynamic capability suggested by Eisenhardt & Martin (2000) is based on knowledge creation routines, for example how managers and others build new thinking and knowledge into the company. As such, Eisenhardt & Martin (2000) argue that there is a huge empirical body of dynamic capabilities in a number of different research areas, even if it has not yet been called dynamic capabilities. In a similar view on what constitutes dynamic capabilities, Teece (2007) labels these practices 'microfoundations of dynamic capabilities', defined as "distinct skills, processes, procedures, organizational structures, decision rules, and disciplines" (p. 1319), including the three capability classes to *sense* opportunities and threats, to *seize* those opportunities, and to maintain competitiveness through *reconfiguring* existing resources.

4 The case companies

4.1 Dustin

Dustin is an internet-based retailer of IT-products and home electronics operating on the Swedish and Danish markets with a turnover of EURO 400 million. The company was founded in 1984 and was a family business until 2005 when 80% of the shares were sold to a private equity company. Approximately 65,000 articles are provided in 22 different product groups and the business group has about 350 employees. The Dustin Group today operates on the two market segments of business-to-business customers and private consumers. On the business-to-business segment, which is by far the most important one for Dustin, the company provides a complete palette of IT solutions for their customers. Hardware as well as software are therefore provided, and offered together with full financial solutions via their own company, as well as installation and configuration support.

In recent years Dustin has undergone major changes as it has been transformed from a relatively unknown, small family-owned company to a business group. These changes include

new ownership, with new requirements on performance and strategic goals as a result; major organisational changes where the organisation has been “stretched” , introducing several more hierarchical levels; the entrance into the Danish market through the acquisition of Computerstore A/S with to the goal of expansion into the other Nordic countries, and a new central warehouse with 20,000 square metres instead of the former 4,500. The timeline in Figure 2 below summarises this development.

Figure 2 Development of Dustin

Despite the last years' turbulence and rapid development, Dustin's main business idea has not changed. Dustin, as always, operates in a rapidly changing market characterised by low margins and short product lifecycles. To manage the competition, the two main components of Dustin's business model are: high availability of products, and speed, i.e. short customer order lead times. All products are purchased via multinational distributors and taken to Dustin's central warehouse in Stockholm. From there the products are delivered to the end customers only 1-2 days after the order is placed. Within Stockholm it is possible to receive delivery on the same day as the order was placed.

To achieve high availability and speed Dustin has, over the years, put a lot of effort into managing the physical flow of goods in the supply chain. The supply chain is an essential part of Dustin's strategy and by linking the four largest distributors to Dustin's own IT system (Dacsa), Dustin is able to automatically expose and sell not only their own products to customers, but also those of their distributors'. In addition to short lead times this also results in an inventory turnover of as much as 40 times per year. The IT system Dacsa has one common platform for the different companies in which employees as well as customers operate – but is linked to different websites that are adjusted to the targeted market segment. Dacsa is, together with logistics operations in the supply chain, seen as strategically very important and has continuously been developed in-house since 1995 when the sales began over the Internet and no suitable IT system could be found on the market.

To enable continued growth, Dustin invested in a new central warehouse in 2008. This warehouse operates more or less in the same, highly standardised way for all incoming orders, independent of customer segment. Efficiency in the warehouse operations is prioritised and

the work processes are continuously evaluated and refined. At the outbound side, highly integrated with the warehouse operations, Dustin has a close collaboration with the Swedish Post as their main transport provider and goods leave the warehouse 6-8 times every day.

4.2 Clas Ohlson

Clas Ohlson Group AB is a Swedish retailer of do-it-yourself products for house and homes, technology and hobbies targeting private consumers. It was founded in 1918 as a mail-order company based in Insjön, Sweden, but most of the sales have now transformed into regular stores, representing 97% of the annual turnover. In 1989 the company opened its first store outside Insjön and now 116 stores operate in Sweden, Norway, Finland and UK with approximately 3,500 employees (April, 2010). The base is still in Insjön, where the headquarters and central warehouse are located. All goods from suppliers are taken there and are then distributed to the stores. In 2008/2009 the turnover was about EURO 500 million and the operating margin was 12.7%.

Similarly to Dustin, Clas Ohlson operates in a market with fierce competition and has taken a position in between cost leadership with a clear focus on economies of scale, and a differentiation strategy based on prime locations in the very centre of cities. To support this strategy, Clas Ohlson has a natural focus on economies of scale in their purchasing. To gain these economies Clas Ohlson has a strong growth strategy, with an average of 15% growth annually for the last five years. In terms of stores, 15-20 new stores have been opened each year. With the same logistics system as a base, Clas Ohlson has also continued its geographical expansion into the UK, where the first store was opened in December 2008. Another important focus for Clas Ohlson's cost leadership strategy is efficiency in logistics operations through improved standardisation of activities and working processes, including the entire physical flow of goods from the supplier, through the central warehouse and further out to the stores. An important measure that has continuously been improved over the years is the cost for warehouse operations. During the last decade Clas Ohlson has managed to increase the turnover per warehouse employee by 103% and at the same time decrease the total warehouse costs from 5.44% of turnover to 3.28%. These figures indicate high efficiency despite the rapid growth and geographical expansion.

The rapid growth has been possible due to Clas Ohlson's continual investments in their central warehouse in Insjön. Since the contemporary central warehouse was opened in 1995 it has been enlarged several times. Table 2 below shows the different phases of the enlargement, including investments in logistics-related technology. In total, the investments for the five phases are estimated at EURO 110 million.

Table 2 The development of Clas Ohlson's central warehouse

1995: Phase 1	New central warehouse is opened. Capacity for mail-order business and 8 stores.
1999: Phase 2	The central warehouse is enlarged for a capacity of 25 stores.
2004: Phase 3	High bay warehouse and automatic sorting facility is installed. Capacity increased to 90 stores.
2009: Phase 4	Sweden's largest mini-load inventory. Enables deliveries to 150 stores.
2010: Phase 5	Another high bay warehouse for storing capacity to 150 stores.

Similar to Dustin, Clas Ohlson's IT system Raindance is developed and maintained in-house at Clas Ohlson and considered to be a key strategic tool for the company. Raindance, which is an integrated part of the logistics system, is developed on a continuous basis in order to support the logistics operations.

5 Analysis

5.1 Operational capabilities

From the case descriptions above it can be concluded that Dustin and Clas Ohlson are successful companies when measured from a corporate strategy perspective. In terms of profitability and growth they have, year after year, outperformed their competitors (cf Barney, 2001a). For instance, Dustin has had a profit margin of between 3-7% in the last years, while their two main competitors have had between 0-3%. Similar figures can be seen for Clas Ohlson, which has always been profitable. While the two main competitors have had a profit margin of about 10 and 3% respectively, Clas Ohlson has had an average profit margin of 12.7 % in the last five years. When it comes to growth, both companies growth rates in recent years are impressive: Dustin as well as Clas Ohlson has managed an average growth rate of about 15% over recent years.

From a resource based perspective, the case companies are in terms of static, operational capabilities competing on the basis of a combination of highly efficient and effective logistics operations and well functioning, adjusted, in-house developed IT systems. The logistics operations, such as picking and packing in the warehouse, are characterised as simple, standardised but thought-through routines, and have strong support from top management who emphasise the importance of speed and cost efficiency in the warehouse operations as well as transportation. The IT-systems in turn support the logistics processes and give control to the physical operations. Over the years, logistics operations and IT been developed in symbiosis within each company. Dacsä and Raindance are the result of IT/IS being integrated in the logistics development, with the purpose of achieving a logistics platform supporting the

profitability and growth of the companies (Abrahamsson et al., 2003). As argued by the marketing manager at Dustin;

“Many of our advantages are due to the fact that we have not considered what an IT system can do for us thus adapting to the system, but what we want to do is make the IT system adapt to how we work”

(Marketing manager at Dustin)

In a similar way, the COO at the central warehouse at Clas Ohlson concludes;

“Raindance has always been important for us. One of the big advantages we have is that large parts of Raindance have been developed in-house. From a standard platform, we have been able to build what we have wanted. So we have had 100% influence on the content in Raindance. We can easily call the IT-department and ask for new applications. That is a huge advantage in comparison to if we had been dependent on a supplier.”

(COO at central warehouse at Clas Ohlson)

It can be argued that the configuration of logistics and the IT systems corresponds to how the companies “earn a living now” (Winter, 2003). It is valuable, rare and imperfectly imitable, and the companies have the right organisational complementary processes that are necessary to achieve a sustainable competitive advantage (Barney & Clark, 2007).

Valuable: The integration of the logistics processes and the IT systems forms the basis for an efficient flow of goods that is easily controlled and managed. Logistics operations, linked to an adapted IT-system, enables fast, cost efficient deliveries with control in the form of the ability to track and trace goods, and information access about inventory status and efficient flow of returned goods. As well as for these rather simple, traditional logistics services the companies are also able to offer more comprehensive business offerings in the form of bundling of products (Dustin), financial solutions (Dustin), configuration services (Dustin), different market channels with full transparency (Clas Ohlson), and updated and rapidly renewed assortment (Clas Ohlson, Dustin). The close integration between the logistics processes and the IT systems also enables and facilitates standardisation of operational procedures to be kept up to date, which improves the operational cost efficiency and decreases mistakes and misunderstandings between different organisational units in the company. This is especially clear when it comes to warehouse operations, where the development of the IT system is initiated by the requirements of the warehouse management. In comparison to their competitors, Dustin as well as Clas Ohlson have relatively low warehouse operations costs. In short, the IT system becomes an efficient tool for proper execution – and standardisation - of the logistics processes. As such, the improved control and standardisation caused by this

operational capability is the foundation for the value created in the companies. In absence of patents, unique products and production facilities, the value created is built on the Ricardian rent, where high efficiency in operations translates into excess returns (Peteraf, 1993; Grant, 1991; Olavarrieta & Ellinger, 1997).

Rare: As discussed by Barney (1991) a capability should be considered rare as long as the number of owners of the capability is lower than the number needed for perfect competition dynamics in an industry. In terms of our cases, the rareness criterion is fulfilled by the fact that operations as well as IT systems have been developed in-house for several decades. This development has resulted in unique working processes, activities and key performance measurements that cannot be acquired on the open market.

Imperfect imitable: The complexity in the relationship between the warehouse operations and replenishment process on the one hand, and the IT system on the other, also means that it should be considered as imperfectly imitable (Barney, 1991). The co-evolution of the operational processes and the IT systems means that it is path dependent (Teece et al., 1997) and historically unique (Barney, 1991). In order to function, the distinctive capability discussed here requires a bundle of resources to be combined in a unique way. This combination, as a result of its path dependency and social complexity, also means that it can be claimed as causally ambiguous (Grant, 1991; Teece et al., 1997; Barney & Clark, 2007) and therefore difficult to imitate. Top management at both companies are aware of this; they are confident that their logistics systems are not easy to imitate and both companies' logistics systems are openly discussed and shown in public.

Organisational processes: Except for the operational capability, we have in both cases also identified a number of supporting procedures and policies necessary for the exploitation of the operational capability. Here for instance top management commitment and in-depth knowledge of IS/IT systems are important issues, that facilitate the crucial role the systems play. Another important factor is the willingness for investment in logistics related issues such as warehouses and equipment. These organisational processes are described below as important parts of the dynamic capabilities found.

5.2 Dynamic capabilities

The combination of efficient, standardised logistics processes and well functioning, adjusted, in-house developed IT systems has been identified as a major operational capability in both case companies. From a structural point of view, this can be argued to be valuable, rare and imperfectly imitable, and hence the source for a sustainable competitive advantage. The notion of sustainability can also be viewed from a dynamic perspective, where a continuous renewal of the operational capability is needed. In these case studies, we have found the following dynamic capabilities that are the basic components for such a renewal process:

Managerial knowledge and presence: An essential ingredient for rapid development of the logistics operations and IT systems is top management's knowledge and presence in the organisation concerning these issues. Logistics issues, often by top management labelled "physical flow of goods" or "operational processes" are, together with the IT systems, areas of managerial priority in the case companies. There is in general in-depth operational business knowledge among top managers about these issues and most of the top management members have several years of operational experience from the organisations. This "hands-on knowledge", as stated by Dustin's COO, means that there is little "we and them" feeling between the top management and the employees and that changes and development of the operational business can be performed in a smooth, rapid manner. As such, operations and problem solving around these issues are given high priority in the companies, enabling speed between strategic decisions and implementation, including response to emergent events.

Cross-functional teamwork: Except for top managers' personal knowledge and presence in logistics operations and IT, cross functional communication and teamwork plays a decisive role in order to coordinate and improve operations, for instance to be agile and respond to rapid market changes. In general, top management stress the importance of "knowing what the other departments are doing". Similar to traditional supply chain management literature, functional silos should be bridged through a continuous evaluation and change of interfaces between functions.

Several organised forums for logistics development, with the superior goal of improving customer service and the offering, can be found in the case companies. For instance, Dustin has weekly top management meetings in which representatives from all departments participate. At other levels in the company different functions meet in "user groups" aimed at improving Dasca (Dustin's IT system), its CRM system and the web-site. At Clas Ohlson, similar cross functional groups can be identified, such as the specific reference groups concerned with the enlargement of the central warehouse, in which employees are able to affect the design and the daily working processes.

As well as these formal cross-functional forums, there are also informal ones. In fact, looking at the daily work of the case companies, much of it is organised around the process of purchasing, storing and delivering goods and is performed in cross-functional teams. At Dustin, examples of such informal cross functional teamwork are the teams managing the daily work of purchasing products, the introduction and pricing of new products on the webpage, and the collaboration between the purchasing department and the warehouse concerning storage space etc.

“A product manager speaks to a purchaser ten times every day. It is a very close collaboration, it is definitely not we and them, but a team. If you break down the functions operationally, it is suddenly a product manager, a market area manager and a purchaser that work in teams, even if we do not physically sit together.”

(Marketing manager at Dustin)

Control: As a result of the companies' rapid and continuous growth, the logistics operations and the functionalities of the IT systems are continuously challenged. To manage the development in the right direction, control is essential. For this, the ability to measure, follow up and control the company's performance, mainly by utilising sophisticated IS/IT support, is crucial. This ensures the continuous improvement of the operational capabilities, as without proper control it is difficult to enhance improvements. Both Dustin and Clas Ohlson have developed their own systems, Dacsa and Raindance respectively, in which new types of reports and measures are continuously made available and which are driving the development towards more efficient and effective logistics processes.

In addition to control in the form of IT systems, control is also enhanced through standardisation of logistics processes, which enables flexible and smooth changes in operations. For instance, standardisation enables expansion of the business to new geographical areas without jeopardising delivery service whilst still maintaining profitability. As noted by Dustin's COO their delivery speed is of key importance, but their main challenge now is to be able to keep this speed when the company is growing;

“Speed is important for us, but now we cannot be faster as long as we do not teleport our items. Instead we work a lot with our ability to have the same control and be just as fast when we have higher volumes. In this, an important part is of course to be able to manage flows to other countries, e.g. Denmark which is a prioritised area at the moment.”

(COO at Dustin)

In other companies, expanding a distribution centre or introducing new warehouse operations and techniques, often results in major disturbances in the ability to deliver on time to customers, thus causing negative effects on profitability. However, at Dustin and Clas Ohlson, change is the natural status:

“This [the central warehouse] is a facility in continuous change. When we don't enlarge, we rearrange.”

(Director of Central Warehouse at Clas Ohlson)

The personnel have become used to the expansion of the warehouse at Clas Ohlson and the many new stores that they deliver to. From being a big event a decade ago, the opening of a new store now means nothing more than business as usual and no great changes or adjustments are needed in the warehouse operations other than a new outbound delivery address as the Director of Central Warehouse claims:

“Ten years ago it was a great stir, but nowadays we are used to it and it happens almost unnoticed. Of course it generates one extra address to deliver to, but otherwise it is almost unnoticed in the organisation.”

(Director of Central Warehouse at Clas Ohlson)

Learning: Learning is another key component for the development of logistics operations and IT systems in both companies. However, when it comes to learning and educational practices, Dustin and Clas Ohlson differ from each other. Dustin has hardly any structured formal improvement work, and is based on a test and learn culture with little predefined formal structure. As the Warehouse manager puts it:

“We are not working with long, grinding meetings. But if an idea comes up we test it and evaluate if it works. Many of the permanent employees are creative thinkers who want to improve things... It is the small details that make the difference. For me it is OK to test things as long as there is no danger to life.”

(Warehouse manager at Dustin)

In contrast, Clas Ohlson has a formalised structure in the form of an internal educational centre to ensure continuous learning among their employees. The purpose of the educational centre, named The Clas Ohlson Academy, is to secure future competence among employees. One part of the academy is to give all new employees a two week introduction course in the headquarters and in the central warehouse in Insjön where Clas Ohlson's philosophy, organisation and working routines are taught.

Supply chain relationships: For a proper, effective development of the operational capability at hand, Clas Ohlson and Dustin have taken what can be labelled as a channel captain position in their supply chains, where they are leading the development not only concerning their own company's logistics performance, but the whole supply chain's performance. Constantly searching for new logistics solutions, the whole supply chain is utilised for improving efficiency and effectiveness. A pragmatic approach – not necessarily a collaborative one – is hence taken for the relationships in the supply chains. As such, the supply chain functions as an important driver for changing the operational capability at hand.

At Dustin, top management takes an active role when different purchasing deals are made, new suppliers are found, and responsibility borders among supply chain members are

evaluated and changed if necessary. At the customer side Dustin has in recent years gone from being a passive retailer to having a proactive attitude in order to increase customers' share of wallet. New sales agreements have also been taken, for instance Dustin has started to sell Dell computers; with Dustin's high speed supply chain, this alliance is a natural step for Dell's new business model "Dell 2.0".

A similar pattern is identified at Clas Ohlson where logistics at the supply side into the central warehouse is constantly overviewed and measured. At the outbound side of the central warehouse close collaboration with transportation providers is important to enhance the refill process of the stores. This process has been developed and refined during the years in order to make it as efficient as possible and a lot of effort has been made to do this:

"We have constantly been working with this since 95-96, so for us it is nothing new. It is simply a part of the daily business. And I guess that is one of the reasons why the customers enjoy our stores."

(Director of central warehouse, author's translation)

6 Conclusions

We have, in this research, explored logistics operational and dynamic capabilities in two retailing companies that utilise logistics as their main strategic weapon against competitors. This research should be seen as an attempt to elaborate a more comprehensive view of logistics capabilities where strategic management theory is applied in a logistics context. Previous efforts to apply RBV to logistics have been limited to include what is here referred to as operational capabilities.

Through the lens of a resource based view of the firm, we have identified the combination of efficient, standardised logistics processes and well functioning, adjusted, in-house developed IT systems as a major operational capability in our case companies. This complex bundling of resources is to be considered as valuable, rare and difficult to imitate for competitors (Barney & Clark, 2007). In line with a dynamic view on strategy creation the companies also display an ability to continuously improve on that capability, i.e. the firms have dynamic capabilities capable of sustaining their competitiveness over time. In this research we have identified the following five dynamic capabilities that are all vital for the continuous development of the bundling of logistics processes and IT systems.

- Managerial knowledge and presence
- Cross-functional teamwork
- Control
- Learning
- Supply chain relationships

In summary, the dynamic capabilities identified span a wide range of different fields and functions in the companies including matters both on an individual and organisational level, as well as internal and external issues. As such, our findings indicate that dynamic capabilities are not limited to a certain organisational part of the company. Instead, a broad spectrum of different abilities is needed that spans several organisational functions. The improvement of logistics cannot be considered as an isolated task for logistics managers in a separate logistics function. Rather, when considering the case companies, their operational logistics capability is part of a complex bundling together with the IS/IT function, which in turn, over time, is developed by other company functions such as marketing and purchasing. Thus, dynamic logistics capabilities are framed and embedded in several other prominent company functions.

From a managerial viewpoint, the dynamic capabilities also display a combination of the need for top-down and bottom-up management. It is evident that the knowledge and presence of top management plays a vital role for the continuous development and improvement of operational practices, including IT development as well as working processes in, for example, the warehouse. At the same time though, change and development is driven by interaction between employees and different functions in the supply chain. Cross functional teamwork and supply chain relationships are important cornerstones here for development.

Considering the role of logistics in the strategy of the firm, it is clear that the case companies' utilisation and view of logistics is not congruent with the classical view on logistics as a function detached from corporate strategy, in which logistics is a tool for hypercompetition towards a productivity frontier (Porter, 1996). However, a rapidly changing and volatile environment (Eisenhardt & Martin, 2000; Esper et al., 2007) suggests a situation where the productivity frontier is constantly moving, and where sustainable competitive advantage can be gained by continuously operating at this frontier (Gagnon, 1999), see Figure 3.

Figure 3 Dynamic capabilities moving the productivity frontier

Porter (1996) and Hamel & Prahalad (1994) have already argued that the challenge for companies in a dynamic and highly competitive business environment is to find ways to be different from competitors. However, in our opinion the question is not only about defining a new strategic position but also about having the dynamic capabilities needed to *define and move to a new productivity frontier*. Consequently, there is no universal productivity frontier, made from a number of standardised best practices. This implies that in order to stay ahead of competitors over time, logistics cannot be bought “off the shelf” from logistics providers. Instead it must be created from a unique set of operational and dynamic capabilities owned by the company. Highly efficient logistics operations (which can be bought from logistics providers) or dynamic capabilities (which are created and maintained in-house) alone are not a source for sustainable competitive advantage (Eisenhardt & Martin, 2000). Instead it is the combination of the two that is required.

To fully understand and explain the role of logistics in the strategy of the firm is still in its infancy, and requires further research efforts. This study reveals a number of potential future research areas, where the most urgent one is further clarification and classification of logistics related dynamic capabilities. In particular, the emergent literature on knowledge management in logistics research (e.g. Esper et al., 2007; Hult et al., 2007) might be a promising field of literature to be combined with a resource based view.

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