

Ecommerce and logistics



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The consequences will be analysed with a Supply Chain view and the perspective from the transport and logistic providers. An e-commerce model is created by a number of different logistic forces. The model has emerged out of the competitive forces model by Porter. This e-commerce model is demonstrated by a number of examples. Here the model is used to indicate the way the logistics industry will be positioned in the future. A number of case studies have been performed. To analyse the case studies the model is used.

The model shows distinctly the way the five competitive forces influences the e-commerce industry as well as the logistics industry. This facilitates for the logistics industry to take a larger part of the value chain. The focus is directed towards the design and the management of different concepts for the physical distribution. The interrelation between these concepts and the flow structure and the information systems along the Supply Chain are to be defined. Models for Internet distribution, as well as for upstream and downstream consequences for Internet buying will be shown.

Key words: e-logistics, e-commerce, e-business, logistics, supply chain management and Introduction 1. Background Interest in the Internet has changed so drastically in recent years that one can speak of a universal breakthrough. The remarkable increase in users can be attributed mainly to the appeal of the World Wide Web, the Internet feature that is enjoying the greatest growth (Brigandage et al. , 1998). There is some uncertainty about how much the Internet and electronic commerce (e-commerce) are being used, and especially about the expansion of such usage in the future.

At the same time, e-commerce is a new phenomenon that is surely going to have an enormous impact and significantly change the way both individuals and companies shop, manage their business activities and distribute their products. The number of households in Europe connected to the Internet is expected to triple, to 50 million, by the year 2004 (Relatedness and Linden, 1999). But usage will not expand uniformly. Persistent forecasts of explosive increases in sales of goods via the Internet have so far been wrong.

In Sweden, The Swedish Research Institute of Trade (HOI), recently assessed retail sales via the Internet to be SEK 600 million, which corresponds to a trifling 0.2% of total retail turnover, (Kara, 1999). Increased access to Internet services must be accommodated by improvements in flow structures. The increased access to and offers of information created by the Internet must consequently be accompanied by a different distribution structure, one assuring that goods can even physically be transported to the customer quickly and rationally.

E- and distribution systems that function efficiently and effectively in all respects will be crucial for the success of the companies involved. This implies that manufacturing companies, and especially logistics companies, must identify and create effective logistic solutions in order to compete on the marketplace. Ordering materials of various kinds electronically, and primarily via the Internet, will become more and more common. This applies not only to business-to-business but also to business-to-customer. This end consumer will normally be a private person who orders everything from books, clothes and food to a new model computer.

The result is that the end consumer can receive and will demand to receive the goods ordered significantly faster than via traditional distribution. The subsequent result will be shorter lead times, the disappearance of one or more physical intermediaries, and direct transports to far more addresses, especially in those cases where retail stores are circumvented. We can anticipate less use of private cars, but more employment of delivery vans, as well as smaller orders to be shipped longer distances, especially in the international context.

During the preliminary phase, we might expect these consequences to imply greater direct costs, while the consumers' indirect costs for seeking, ordering and having their purchases delivered to their homes will go down.

Simultaneously, however, we will see new opportunities for creating entirely new distribution systems involving different flow streams than those with which we are familiar. The companies who can cope with these demands E-commerce and Consequences for with new approaches to production and distribution will be able to create new business opportunities and prepare for a greatly increased market for their products.

The Internet signifies new opportunities for reaching the global market. Yet this, in turn, also signifies great demands on the actors who want to exploit these opportunities. Right now, there are several big actors who market themselves solely via the Internet (e. G. The booksellers Amazon. Com and Barnes. SE), yet there are very few who do this profitably. Making it possible to use the Internet as a marketing channel requires new knowledge about how the entire logistics system needs to be developed in various environments ? and about the consequences this will imply for other actors. .

2 Scope The focus of the project was designed as follows. The unit of analysis is firstly the transportation and logistics industry. The area studied is the physical distribution along the supply chain and the supporting information flow. The project covers both business-to-business and business-to- Both e-commerce in general and its logistics consequences will be covered, but with a focus on logistics consequences of e-commerce.

Logistics consequences implies studying the demands on logistics for achieving profitable e-commerce in terms of logistics costs and delivery service, and the possibilities for change and/or improved logistics operations. The logistics focus is on the logistics platform in terms of design and management of the physical distribution structure in the supply chain: the different actors, such as reducers, retailers, wholesalers, truckers, forwarders, customers, etc. The supporting information flow is also included.

1. 3 Research questions This paper has its basic foundation build in a number of questions.

This were developed and further analyses within a number of cases in cooperation with the industry (Hallucinate and Lumens, 2000, Relatedness and Linden, 1999, Freer and Rosenberg, 1999) This questions and possible development are as follows: 1 . What modes of distribution are interesting and what volumes and resources will be needed in order to rationalize this commerce? How to organize and coordinate with existing flows while waiting for sufficient volumes to motivate new, separate systems? 2. Will there be a demand for extended cooperation between different actors vertically as well as horizontally?

How will this coordination be achieved? Is there a demand for incentive and control? 3. What role will different information systems play in these new, alternative logistics systems? 4. How will the increased cost downstream be compensated with lower costs upstream? 5. How will the time differentiation be affected by the prospect of alternative distribution solutions? . How will the distribution be allocated to a 24-hour period and how will this affect resource utilization? New flow structures as a consequence of E-commerce 2. Flow requirements Industry observers expect e-commerce volume to triple in two years, even though their current expectations vary. Business-to-business e-commerce revenues are currently a lot larger than those of business-to-consumer and are forecasted to stay so in the near future. The market for consumer e-commerce requires a major shift in consumer buying patterns and a much larger penetration of the Internet in order to come really big (Creighton & Captor, 1999). Some say the Internet will take over all commerce. That everybody will soon shop on the Web.

Others say it is just a fad, and that the Net cannot offer anything of lasting value (Dahl©n, 1997). It is recognized that the Internet offers a lot of opportunities. But in order for it to become a large, global channel of sales, there are some growth requirements that have to be fulfilled for e-commerce to truly take off, e. G. : 1 . 2. 3. 4. 5. 6. 7. The basic infrastructure must be in place, including logistics. Customers and genuineness must have access to the Internet. Sites must have multiple language functions. The cost of Internet access must decrease. E-commerce must be safe in terms of privacy and monetary transactions.

The speed of the technology must be satisfactory. International standards must develop. Interest in the Internet has increased dramatically during the last few years. The Internet is an “ abstract network” (further explained in section 3. 6 about Logistics systems’ changeability below) which means that implementation times are short and the developments around it are happening very fast. Consequently, Internet use will shift from people with highly developed computer skills to ordinary people, which will result in new possibilities for shopping over the net (e-commerce).

This in turn will lead to new business opportunities for all sorts of companies. The products still need to be delivered to the customers however, and effective logistics and distribution systems are hence essential for the success of new business. Just as with every new phenomenon, the definition of e-commerce is still slightly vague and unclear. Commerce is one part of e-business, which in turn can be described as the new equines logic sanctioned by Internet technology.

This new logic spans entire value chains and creates new economic value, breaks down borders and hence relationships, The differences between traditional business logic and the new e-business logic can be seen in Table 1 below. One trend that can be seen throughout the new logic is that it is focused on building a network consisting of suppliers, manufacturers, and customers. Customers can participate in product development by surveys on the Internet, and are thereby, besides helping to develop the product, becoming more loyal customers.

Suppliers are seen as partners participating in joint ventures with the company. Production is made to order instead of to stock so as to be more customer adapted. And customer service is becoming more and more important when companies are trying to create a loyal customer segment.

Table 1 Differences between the old and the new business logic (Relatedness

& Lind©n, 1999) Value chain Old logic New logic Product development

Technology driven Customer driven Procurement “ Suppliers are suppliers” “

Suppliers are partners” Production To stock To order Marketing Market share

Share of customer

Traditional channels Over the web Order fulfillment “ It comes when it comes” Value added functionality over the web After sales Customer service second priority Customer service is the key to survival One definition of e-commerce might be “ E-commerce includes everything from learning about products online and electronic transactions to online customer service and support”, Kevin Zoom, president of Parlays System Development

(Relatedness & Lind©n, 1999). Age 3 Alternative media for e-commerce In the future, e-commerce need not necessarily mean the transaction between a web hop and a “ customer computer”; the transaction might just as well be between an ordinary TV and a TV network. This means that it will be possible, for example, to order products from television advertising directly from the TV set. New openings for transportation companies With e-commerce, a whole new market will open up for transportation and logistics companies, or whatever they may be called in the future.

At present e-commerce is pursued to a fairly high degree between companies, but is still not very developed between companies and private

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persons. The business-to-consumer (BBC) relation is expected to grow rapidly though, and when this happens it will result in several changes for actors in the logistics area. When delivering to private persons instead of companies, the demand for fast and accurate deliveries will increase. This is because one or more of the physical nodes will disappear when the goods can be transported directly from the producing company to the end customer.

Direct home deliveries will make this possible. Expected trends in traffic and distribution from a widely spread use of e-commerce are fewer passenger cars, an increased number of pickup trucks, and smaller consignments, especially on international transports. Like all other industries, logistics has to consider e-commerce, evaluate the importance of the trend and determine what impacts it could imply. Most other industries are customers of logistics in one way or another, implying that any trend likely to impact other industries will certainly have an impact on the logistics industry.

Therefore, the logistics industry has to face the challenges and opportunities created by e-commerce, both from within the industry and from external players. The industry has always been pressed to cut costs and squeeze margins, and the future will be even more formidable as competition forces most companies to continue the streamlining of their business. 2. 2 Model for information in e-commerce Internet technology has forced companies to redefine their business models so as to improve the extended enterprise performance (Smirch-Levi and Smirch-Levi, 2001).

A model describing how the Internet and information influences the business structure has been developed. The base for the model is Porter's five forces model (Porter, 1980). This model is generally used to analyse a company's position on the market and is used frequently as a means to evaluate the potential of a specific company. There is however nothing that stops us from redesigning the model to analyse e-commerce. A range of new possibilities opens up as e-commerce is implemented as a way to reach the end-consumers.

Companies will have the opportunity to establish a contact outside the traditional marketing channel. If this becomes reality on a large scale there has to be a logistics service developed in order to correspond to the specific needs. Potential entrants There will always be a threat to the established companies when a new marketing channel is implemented; areas where established companies have failed to predict a demand. Potential entrants can also be established brands that due to a strong trademark they have the strength and the volumes to sell directly to the end customer on the Internet.

The latter require that the trademark be sufficiently well known. One company is Amazon. Com, which by selling books on the Internet Amazon became one of the largest book retailers in the USA. Amazon quickly became a threat to the traditional bricks and mortar companies as they could offer the same products to a lower price and with a higher level of customer service. By this they forced their competitors, for example Barnes & Nobles, to take action and to establish a similar business activity.