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Online shops and
Structure of Logistics

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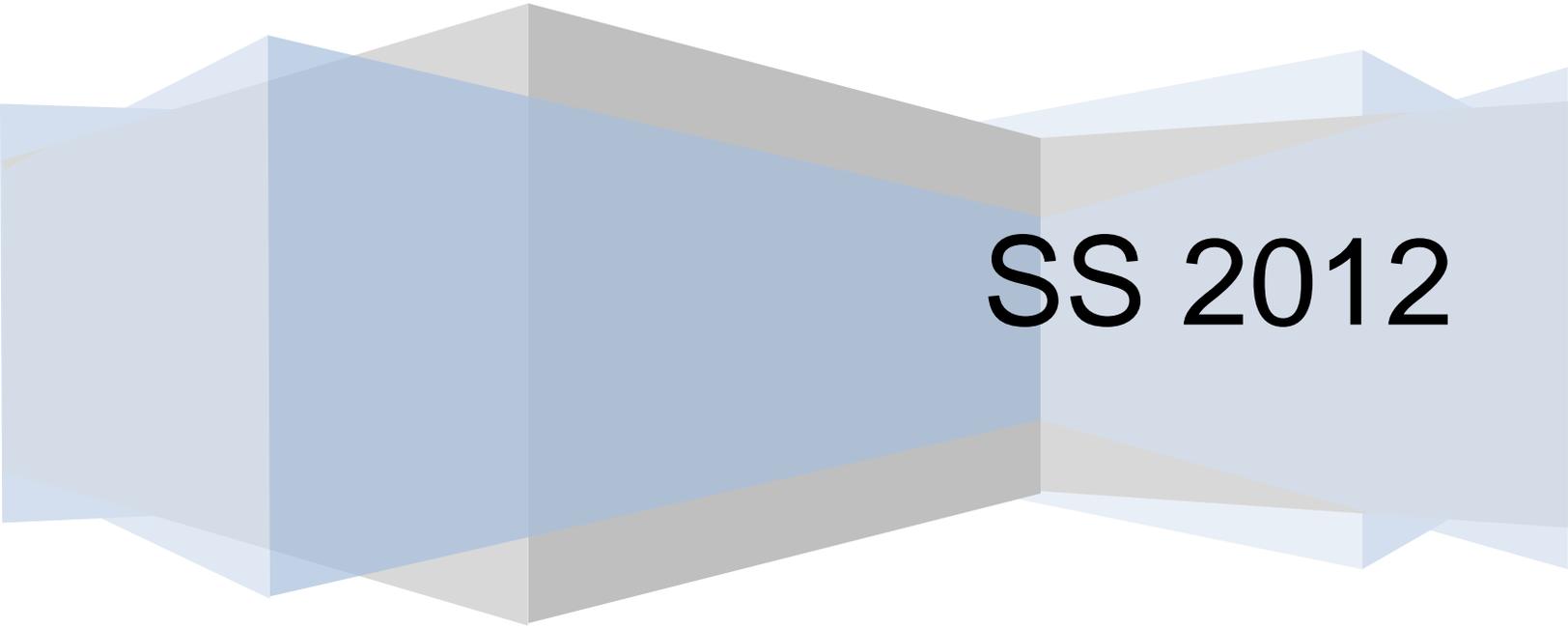
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Introduction

From the very beginning of the human society, the man always has been doing trade as a way of survival and with it the necessity to improve his life level. Through the evolution of the civilization, the trade has been evolving and has been becoming more sophisticated. Among many factors, that affects directly the process, from the planning and production to the customer feedback, the logistics plays an important role for delivering the product in a fast and safe way.

Nowadays with the information era, new technologies have driven also new ways of commerce. One of the main targets is to do as much as possible from the personal devices, like computers, tablets, cell phones, etc. The new term *e-Commerce*, adopted recently, translates the electronic commerce that also put new challenges to the market. One of the biggest, and probably the one that makes the difference from one competitor to another is the logistic process. Fast delivery times at low prices plus innovation in added value are the most important factors that influence the image of a company.

Through this paper, I will show the characteristics of online stores, how they have growth and what the predictions for the future are. Later on will be discussed the controversial and difficult topic of online grocery shops, taking a look of why are they interesting and the popular analyze the most important factors regarding logistics for the success of a company willing to implement the *e-Commerce* for its normal operations. There will be also an analysis of the logistics evolution in the *e-Commerce* industry and the different types of logistics trends regarding the industrial sector of each online store.

1. Online Shops and e-Commerce

What comes to your mind when you think in Online Shops? Probably *Amazon* or *eBay*. The concept of online shop is hardly associated with technology products, due to the fact that the first e-commerce users were "technology-adepts", but there is another segment that is not that popular like tech: grocery. The logistic process for the grocery market will be discussed later, but from now on, I will like to point out these two different markets as the most important segments for the e-commerce industry.

The predominant characteristic of Online Shops is undoubtedly the unlimited time that you can spend looking for products, while sitting at your computer in the comfort of your home. Compared to normal shops, this is a pro, but what are the cons also compared to the traditional way of shopping? Even with the evolution of the e-commerce, still exists today the fear of giving sensitive data to a computer, without knowing who is at the other side. Normally is another computer, but for the majority of the population, this is not a guarantee of a secure transaction. Many don't trust in the technology encryption and security systems already present in the market. Also, they cannot touch, feel and smell the product. In this case, the services sector is privileged avoiding this issue.

There are another factors differentiating traditional shopping and online shopping like the vast catalogue, the logistics, and price competition. How has been growing the industry? First we take a look to the security factor, then the growth of the Internet population and finally how the market segmentation has evolved.

1.1. The growth of Online Shops and e-Commerce

Some years ago the concept of Online Shops was something commonly associated with insecure transactions, phishing and the sensation of spending the money with an "unreal" agent or shop. As said before, the feeling of interacting (and with slow and

unstable Internet connections) with "nobody" has been a big challenge for the companies over the years.

Nowadays after numerous tries with good and bad results, the concept of online shops has evolved from the hand of standardization of banking and currency transactions, and most important a mature Internet culture where the users learned the benefits of the information era.

The growth of the Internet population has played also an important role in this process. Below is the table with the largest users of the Internet worldwide, having in mind that in some countries the growth has been substantial: India (1,200 per cent) and China (700 per cent) (Fernie, 2009, pp. 209).

Table 1. The largest users of Internet worldwide (Fernie, 2009, pp. 209)

	Country or region	Internet users	Penetration % (% population)	% of world users
1	United States	218,302,574	71.9	15.5
2	China	210,000,000	15.8	14.9
3	Japan	94,000,000	73.8	6.7
4	India	60,000,000	5.2	4.3
5	Germany	54,932,543	66.7	3.9
6	Brazil	50,000,000	26.1	3.6
7	United Kingdom	41,042,819	67.3	2.9
8	France	36,153,327	58.1	2.6
9	Korea	34,820,000	70.7	2.5
10	Italy	33,712,383	58.0	2.4
11	Russia	30,000,000	21.3	2.1
12	Canada	28,000,000	84.3	2.0
13	Turkey	26,500,000	36.9	1.9
14	Spain	25,066,995	61.9	1.8

15 Mexico	23,700,000	21.6	1.7
16 Indonesia	20,000,000	8.4	1.4
17 Vietnam	19,323,062	22.4	1.4
18 Argentina	16,000,000	39.3	1.1
19 Australia	15,504,558	75.3	1.1
20 Taiwan	15,400,000	67.2	1.1
Top 20 Countries	1,052,458,261	25.0	74.8
Rest of the World	355,266,659	14.5	15.2
Total World – Users	1,407,724,920	21.1	100.0

1.1.1. Online shop consumer

As the market matures, the consumer profile becomes more important. The earlier consumer in online shops and e-commerce had a profile of a young, male professional and normally living in a middle-class neighborhood (Fernie, 2009, pp. 211). With the evolution of the market, this profile has changed. Nowadays the spectrum is bigger and for example in the UK, the profile can be divided into 5 segments:

1. *Virtual Virgins:* Least likely to buy online, time online is half the national average and two times likely to be female compared to any other group (Fernie, 2009, pp. 211).

2. *Chatters and Gamers:* Spend more time than any other group, normally young males and tend not to be buyers. Fear of delivery and security. (Fernie, 2009, pp. 211).

3. *Dot Com dabblers:* Average Internet users, mixed feelings about online shopping and forty percent have made any form of purchase online. (Fernie, 2009, pp. 211).

4. *Surfing suits:* Spend less time in Internet than the average, enthusiastic online shoppers and less likely to fear e-commerce (Fernie, 2009, pp. 211)

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5. *Wired living:* Cosmopolitan young people with extensive time online during the week (four and a half hours). Seventy per cent have bought over the Internet. Sixty per cent have a degree (Fernie, 2009, pp. 211)

1.2. Online Shops vs. Traditional remote shopping

The concept of non-store shopping is something not new. Probably there weren't online stores, but instead of it there have been mail orders for one century (Fernie, 2009, pp. 207)

With the arriving of the hi-tech devices and the information era came the possibility to interact with customers in the distance in real time, over a bunch of new possibilities such as:

- Give the customer the possibility to browse freely the catalogue, like a paper catalogue, but with theoretically unlimited number of products.
- Give the customer the possibility to search within the catalogue of the store in a fast and precise way.
- The logistics system (this topic will be discussed later)
- Give the customer as much information as possible on the logistics process, such as where is the packet for his personal tracking.

1.3. Virtual Supermarket of the future

According to Jönsson, the e-commerce and the way of shopping online has to change with years, acquiring a new trend in online services and products: Experience-oriented shopping (Jönsson, 2009). Buying something from the Internet has to be "customer-customized", and here one of the biggest challenges is the transfer of sense impressions. In other words, there has to be a convergence of the psychical world and the virtual, like a hybrid space (Jönsson, 2009). For grocery stores, there are **three scenarios** formulated by the Copenhagen Institute for Futures Studies (CIFS) after the

project *Interactive Grocery Shopping of the Future,* seeking for answers for the food retailers wanting to move online (Jönsson, 2009):

Scenario # 1: "Big Mother". Like the concept of "Big Brother" but instead of watching you, she is *watching out for you.* Here you have total control over the packages, ensuring that your food will come fresh and letting you know how old the food is, among other features (Jönsson, 2009).

Scenario # 2: "Open society". Here, everybody shares his knowledge and the information can be gathered from the Internet. With the grocery market for example, it can be known if the best product is on a retail store or directly with the farmer, fish cutter, etc. (Jönsson, 2009).

Scenario # 3: "Simple living". Wealthy is not just about money in this scenario. time, space, peace, environment and nearness are also important. Here the challenge is to create confidence and a closer shop-costumer relationship. Trust is the key (Jönsson, 2009).

2. Logistics in Online Shops

The words logistics and e-commerce are automatically bounded today. With the evolution of the industry, came many factors that determine the success of the online shops. The logistics process undoubtedly is a crucial success factor and under the electronic commerce industry there is a specific term: ***e-fulfillment.***

E-fulfillment is the process of project, implement and control the flow of raw material, stock in process, finished goods and related information, from the origin point to the consume of the product, in an efficient way and most economic possible, fulfilling the consumer requirements (Garcia et. al, 2003, p. 2).

The logistics are carried normally by an outsourcing partner. This company takes care of handling and shipping of the product. But this partner has to understand that the online distribution is different: the size of the packages and the geographical distribution are wide. The online shop ships many small packages for a big area of customers. Here comes also the "last mile" problem that will be discussed later.
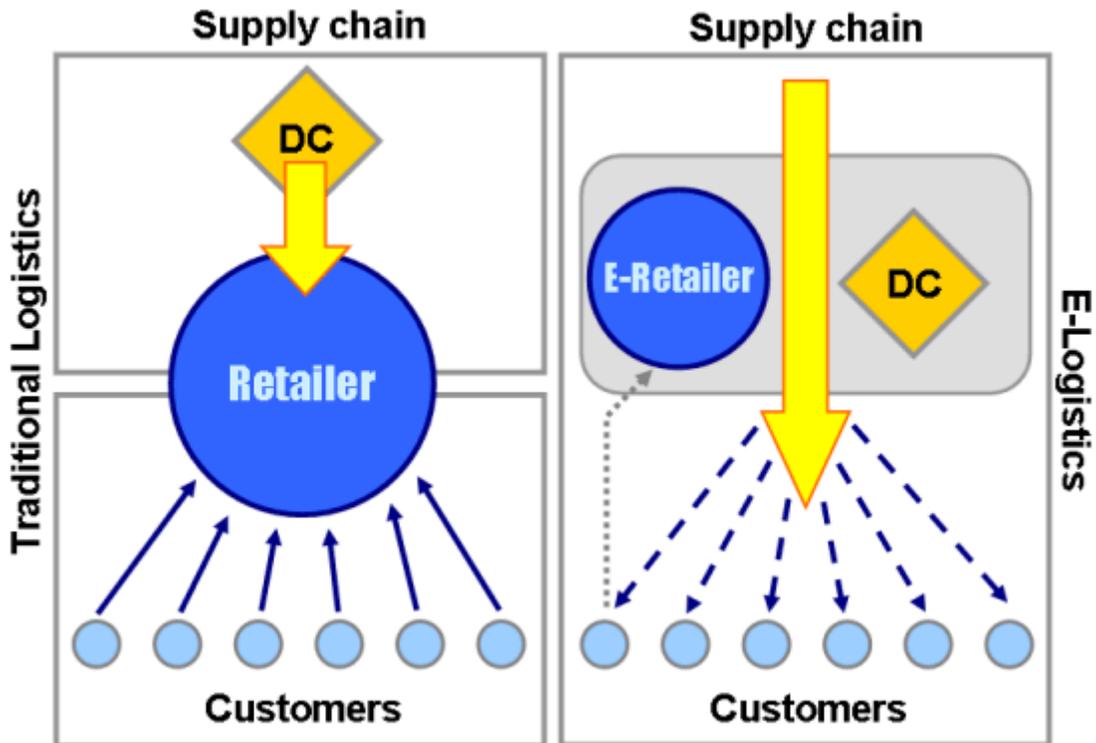

Figure 1. Comparison of traditional logistics and e-logistics. Rodrigue, J-P *et al.* (2009)

It is known that the e-commerce has a double effect on the traditional logistics: in one hand it has a *disintegrating effect*, due to the pass from the mass flow from company to company (B2B) to a multiplicity of flows or streams to the final consumer, and in the other hand an integrating effect, since e-commerce is where all the supply chain is integrated on a good sold online (Garcia et. al, 2003, p. 5).

The logistics activities that are affected by the use of Internet are as listed below (Garcia et. al, 2003, p. 4):

- Stock management and availability of products

- Warehouse management

- Information management

- Purchases preparation

- Transport and delivery routes management

- Sales forecast

- Logistics outsourcing

Table 2. Comparison factors between traditional and e-commerce logistics (Garcia et. al, 2003, p. 6).

Logistics	Traditional	e-commerce
Shipment method	Large	small volume
Consumer	Strategic	Unknown
Demand type	Push	Pull
Orders flow/stock	Unidirectional	Bidirectional
Average amount of a order	Over US $ 1000	Under US $100
Destinations	Concentrated	Highly dispersed
Demand	Stable, consistent	Highly seasonal, fragmented
Responsibility	With only one link	Through the whole supply chain

2.1. The grocery market and logistics

As mentioned before, the grocery market is not commonly associated with e-commerce and online shops, but there is a trivial reason that has to be considered: We all have to eat! (Fernie, 2003, p. 215).

The younger person, time-poor would reject the fact of wasting time buying groceries. The reasons could be many, but many people prefer just to sit on his computer and order online, rather than pass over the traffic in a peak time, spend time walking all around the store and finally go to the cashier queue. All of this after a stressful work day.

But here our "business" is to deal with the logistics. And precisely for the grocery market, the logistics are a first priority fact for success. The speed of delivering the goods has to be higher than other segments. The shop has to ship the goods as fast as possible and at low costs.

Today the grocery market is still evolving and there has to pass many years, while the concept gets mature.

2.1.1. The last mile problem

In e-commerce Logistics, the term "last mile" is similar to the one used in communications. It refers directly to the factor dealing with the delivery of the product directly to the customer in a small amount of time. It has a high relevance to the marketing mix of an online shop. Basically it consists of the following measures (Madlberger et al, 2004, p. 4):

- Delivery time

- Reliability of delivery

- Flexibility of delivery

- Quality of delivery

- Delivery information

If an online grocery shop wants to fulfill a certain level of last mile logistics, at least one measure has to be applied to the logistics process (Madlberger et al, 2004, p. 4).

2.2. Challenges and successful factors of online stores logistics

Here we are facing a new challenge in relation with the normal business logistics. The B2B, dealing with the supply chain between the supplier and the company, has the major role. But in e-commerce, the final customer has to be satisfied and it depends directly on the logistics. There are many small sales that have to be distributed to a wide range of customers, situated in different psychical places. So the challenge is to send many products with different characteristics, to different places in the world. For achieving this, there has to be a strong relationship between the electronic retailer and the logistics company. An agreement on prices, reaching low cost, fast and to different places delivery is important on achieving the goal.

Another important point is the added value given to the costumer regarding logistics. It is important to give him the information on how the good will be shipped and where is it until it reaches its final destination.

As Fernie mention (2009, p. 216) by the 1990, many new players in the e-commerce industry were "pure players" that did not depend on a big retailer or grocery store and wanted to enter the market by their own. Many of them, maybe the majority have failed due to the following factors:

1. Limited online potential

2. High cost of delivery

3. Selection/variety tradeoffs.

4. Existing entrenched competition.

Conclusion

If we have a look ten years ago, electronic commerce was something rare seen. Today there are people that have as their unique income the business of selling products or services through the Internet.

This means that the industry has had an important evolution and it is becoming mature and stable faster than many sectors. Within this accelerated growth process, the logistics process has been playing an important role for reaching the success of the electronic retailers. The delivery of the goods has to be fast, reliable and always with real-time information regarding the place where the good is. This added value, is securing the loyalty and fidelity of a costumer with the shop. All of this has to be concentrated under an agreement between the retailer and the logistics company in order to guarantee a competitive prices, zero over costs to the costumer and the profitability of the business.

E-Commerce is different and the supply chain has to be focused on the B2C basis rather than on the B2B relationship.

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