

PLACE OF LOGISTICS CENTERS IN SUPPLY CHAINS IN THE CONTEXT OF ELECTRONIC MARKETS

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Abstract: Logistics centers play more and more important role in supply chains. Depending on the kind of logistics center they create value both in supply chains and supplier networks. Business-to-business (B2B) are quickly becoming one of the major issues for companies in their search for opportunities to improve visibility of their trading activities. Not only this part of e-business is developing very quickly but also B2C and B2G. Interactions between business to business market sites and supply chains are also shown in the paper.

Keywords: logistics centers, business-to-business, supply chain

1. Introduction

There are different ways of identifying information and products flows along the supply chain. Solutions, which are adapted in supply chains influence on their functioning. Logistics centers are usually located in such point of supply chain that links production with distribution. Due to this fact, logistics centers require undertaking many, different activities and complex management. Improving of logistics centers activities get better performance of whole supply chain as well as business-to business marketsites.

2. Logistics centers

Modern logistics center is the key element of supply chain and offers many possibilities on the electronic marketplace. From the point of supply there is a concentration on effectiveness of flows, inventory management, product flow as well as transport and delivery.[11] Logistic center can be defined as interdependent business unit, which realizes logistics services and at the same realizes supply and distribution functions in the certain field.[5] Logistics center consists of such elements as:

- Restricted area and infrastructure i.e. roads, buildings, parking places;
- Technological infrastructure towards transport and storage;
- Qualified personel.

A vital, although varied importance is attached to logistics centres which deal with deliveries in integrated transport units in order to perform processes of distribution of goods to customers.

Execution of the abovementioned tasks requires from logistics centres to own: [8]

- land and its infrastructure i.e. roads, grounds, car parks, building and facilities;
- technical equipment which enables transportation, handling and warehousing activities to be performed;
- highly qualified staff;
- systems of efficient organization, which enable providing logistics services in terms of shipment, reloading, separating and cargo complementation.

Particular role in logistics centres is played by infrastructure determined by:[1]

- buildings which ensure execution of logistics services;
- warehouse facilities with equipment which ensures e.g. low temperatures, special requirements for hazardous materials storage and disposal etc.
- handling terminals, with places and driveways;
- IT systems which enable cooperation between suppliers, customers, banks and insurance companies;
- catering, canteen facilities, hotels, medical and banking services, insurances, custom clearance services, car repairs etc.

Logistics centres show a differentiation in terms of scope and performed functions. The following types of logistics centres can be found:[9]

- international, characterized by highest level of organizational and functional activity, encompassing over-national distribution networks;
- regional, whose essence is a function of intermediate regional or city link with an area of operation of about 50-80km, equipped in required computerized system;
- local, which create basis for local or municipal network of distribution with a range of 6-8km, and which usually have a limited organizational structure;
- branch-related, operating within a branch or individual large companies which manufacture specialized products.

Establishment of logistics centres is a response to ever-increasing requirements and expectations of customers. Logistics centres can also be treated as objects which significantly impact on the competition level in businesses [12].

Place of logistics centres on the market can be shown as in the figure 1.

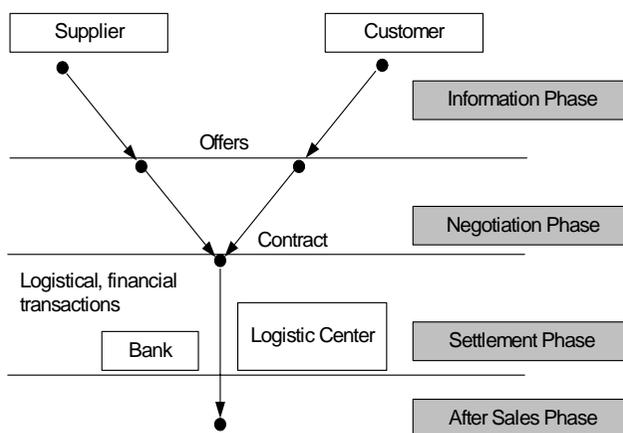


Figure 1 Phases of market transactions (Source: [13] p. 202)

Figure 1 shows four different phases: information, negotiation, settlement and after sale. In the information phase, buyers identify and estimate their needs and possible sources to fulfill them. At this point sellers provide their goods and identify potential customers. The second phase, begins with identifying offers and end with signing contracts. In the settlement phase, the agreed-upon terms of the contract are fulfilled. Depending on the type of the negotiated product or service as well as on the participating partners, the settlement phase can be an initiator of logistical, financial, or other transactions.[14] During this phase logistic center can play an important role. It can be an agent between buyers and sellers. Logistic center can be very helpful with signing contracts between participants of the market. Last fourth phase is named after-sales and covers after-sales product support and customer service.

3. E-business model

Logistics centres are going towards modern solutions and try to adopt them. One of such solutions can be business with use of internet technology including e-business model. In this model elements are covered:

- E-strategy – enterprise strategy and market development
- E-customer – customer development/management (including CRM)
- E-supply chain – e-business supply chain management
- E-enterprise – product, business party, knowledge, and resource development/management and financial services.
- E-technical services – e-business infrastructure.[3]

In order to illustrate how to e-business model works in the economy is below figure 2.

	Government	Business	Consumer
Government	G2G	G2B	G2C
Business	B2G eg. Gatetrade , eFederal	B2B eg. Transora, Varicalnet, Covisint.com	B2C Eg. Amazon.com, Letbuyit.com
Consumer	C2G	C2B e.g. priceline.com	C2C e.g. eBay.com

Figure 2 Participants of e-business model (Source: [13] p. 200)

Figure 2 is an extension of regular business to business and business to consumer figure by adding government. Instead of four relations there are nine relations and due to this fact all players on the market are involved.

The last 10 years have seen an enormous intensification in internet use, with dynamic growth in user numbers and websites. Businesses have seized new internet-based opportunities in terms of faster information flows as well as easier and cheaper access to markets, enterprises and individuals. The business-to-consumer (B2C) online trade has dominated attention in the media, with companies such as Amazon, and Letbuyit.com becoming household names relatively quickly.[2] These names are world-wide known while in countries, such as Poland, have their own companies as e.g. Allegro.com. However, majority of these B2C companies

have not as of yet managed to break-even and their economic feasibility remains uncertain, but some are in good conditions.

The business-to-business (B2B) trade has enjoyed a quieter existence in the last 5 years with the establishment of new intermediaries that trade products or services between businesses. New virtual intermediaries are represented on the internet by a complex web-site, where buyers and sellers meet to exchange products and services. [2]

The government-to-business (G2B) and government-to-customer (G2C) are still developing parts of e-business.

4. Supply chain and business-to-business

The Supply-Chain Council defines supply chains as “every effort involved in producing and delivering a final product or service, from the supplier’s supplier to the customer’s customer.”[7] Pointing at proper attitudes of supply chain such as:

- the subject structure
- the subject of flow
- the aim, the sphere of activities and fields of coordination of different participants

allows to define it. [14]

Depending from the configuration of the supply chain the participants can be: maiming production or distribution companies. The participants place in the supply chain results from the division of work on certain stages of purchase, production and sale of products. Important elements of supply chains are companies that fulfill service function. It is possible to include such enterprises as: transport, brokers, which deal with information sharing as well as recycling ones. Coordination refers to the pattern of interactions, decision-making and communication that takes place amongst the organizations involved. The coordination of materials, information and financial flows smooth the progress of value creation among participating organizations. [7] This coordination helps to create value within supply chain in dependence on structure and position. Value analysis within supply chain and networks between suppliers are shown in the table 1

Table 1 Value configuration analysis and other perspectives on supply chains and networks (Source: based on [7] p. 138)

	Value configuration analysis	Supply chain	Strategic supplier networks
Analytical framework/value creating logic	Value configuration analysis	Value chain/system analyses	Activity (value chain) or resource/knowledge explanations Value constellation/ web or strategic network
Supply structure	Interlinked chains and co-producing layered networks	Single value chains in a value system	defining networks with leading firms acting as hub
Interdependencies	Pooled, sequential and reciprocal	Sequential	stay independent, competitive interactions. Relational view, social embeddedness
Coordination	Implicit a need for planning, standardization and mutual adjustment	Planning	Arm’s length contracting. Relational norms. Creating a shared sense of purpose. Trust and identity building.
Positioning	Horizontal and vertical scope in business value system	Within end point of the chain	Positioning within an industry or between different networks

Five different levels, which are analytical framework, supply structure, interdependencies, coordination and positioning create bases for analysis in supply chain and networks. Two main elements are supply structure and coordination. They generate value by sharing responsibilities and pointing at leaders both in supply chains and networks. The supply chain concept relies strongly on the idea that there is sequential interdependence among activities which, therefore, should be co-ordination. Sequentially dependent activities may also be 'closely complementary'. [4] Pooled interdependence is vital to the efficiency of any kind of operation since this form of interdependence has to do with joint utilization of resources. By utilizing common resources, economies of scale can be achieved in the performance of individual activities that belong to different supply chains.[4] Value in the supply chain is created also with use of e-business model especially business-to-business and business-to-consumer marketsites. (figure 3)

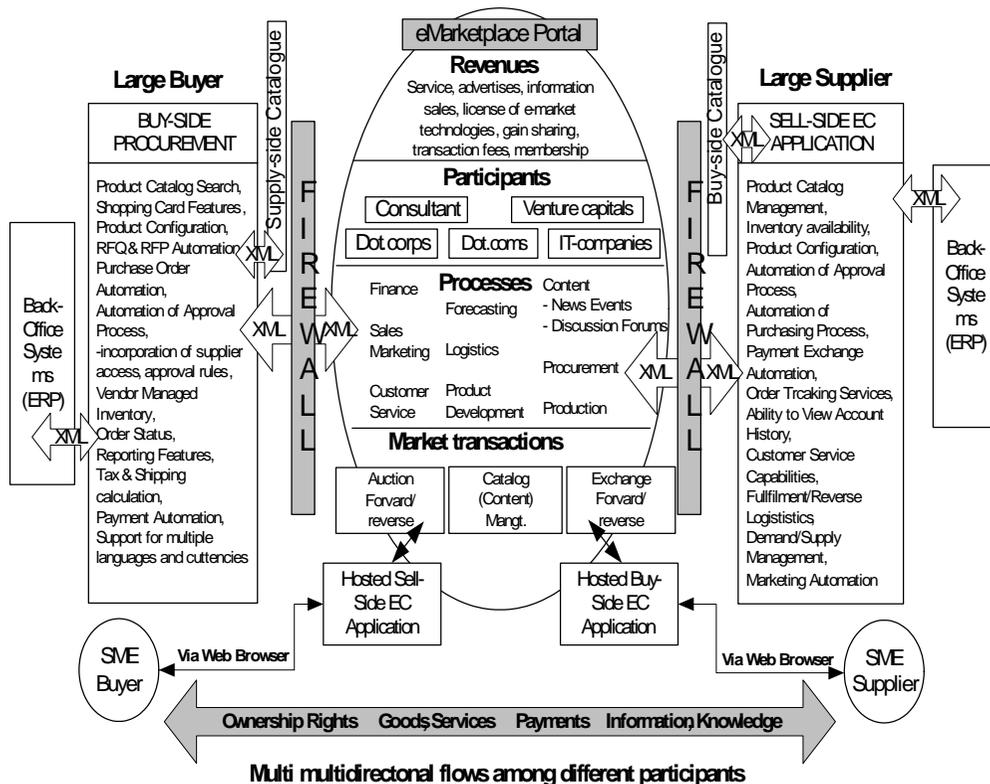


Figure 3 Combining B2B and supply chain from the information flow point of view (Source: [13] p. 204)

Figure 3 represents flow of information and products with use of different systems and modern technology. Information exchange means that retailer and supplier still order independently, yet exchange demand information and action plans in order to align their forecasts for capacity and long-term planning.[6] Information sharing not only helps to create more noticeable and knowable demand in the system, but also helps to establish supplies from both groups large companies and small and medium enterprises. Majority of transactions, which take place in the supply chain, use modern technology and internet. Different applications such as Demand/Supply Management or Marketing Automation on the large supplier side or Vendor Managed Inventory on the side of large buyer defines new

standards of transactions with supply chain. Information technologies, integrated telecommunications networks, transportation systems, logistics centers, service support, technical and organizational infrastructure, are the main elements sustaining supply chains on the electronic market. [10] The critical point is effectiveness of processes, which take place on the market with use of modern technology.

5. Summary

Logistics centers play important role in supply chain structure. Building logistics centers in proper place with good infrastructure is beneficial for all participants of supply chain. Information flows and products flows have to be integrated within a supply chain. Such integration is possible due to many systems implemented in enterprise and logistics centers. Automation of all processes in the supply chain will bring time savings. The success of an supply chain will depend upon the choice of the specific partners in the supply chain and on the way in which they co-operate with each other.

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