Information Technology and Distribution Channels: Current Trends

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Abstract

The research of this paper is focused on the analysis and presentation of the possibility of application of contemporary information technologies and tools in marketing (distribution) sector. One of the often asked question today is how to best, optimally and with least cost achieve customer satisfaction. Undoubtedly, in the global competitive competency arena, customer satisfaction can have powerful effects. The main focus and strength within organizations and employees is the importance of fulfilling customers' expectations. Companies pay special attention on processing of the contemporary information models and techniques to meet the needs and desires of consumers. These systems are used in order to timely inform the customers about new products and services, price discounts, information about the place, the time of movement and the expected dates of arrival of the ordered product etc. This is often achieved by using new GPS technology and wireless technologies.

Key words
Distribution channels, IT technologies, GIS, Logistics

1. Introduction

With the increasing globalization of economic activities and the rapid development of information and communication technology, the primarily task of each prosperous company is constantly looking for ways to strategically develop and organize, global markets. Global markets are supported by different logistics systems, enabling the cope with high level of competencies in the integration processes of production, distribution and consumption.

Development of Internet technology significantly influenced the increase of consumer segmentation. In the past, most of the information for particular products and services consumers have received through advertisements in the print and electronic media. Today, computer technology, scanners and other data sources allow companies to learn mora about the major preferences of their customers and the effects of the implemented marketing strategy on them. Companies apply the Internet technology to send multiple information about specific products and production lines to customers to sell products and services directly to consumers which decrease the cost of final products. Today, all successful companies are aware that modern consumers use IT searching, comparison and detailed introduction to the technical characteristics of the products, which helps them make the final decision. Such developments could be a threat to traditional

producers and retail chains unless they adapt the marketing strategies to the new sale and purchase habits of consumers.

The IT innovation in distribution sector has a critical role in the evolution of the world economy. Companies should start tinking about how to expand the old and conquer new markets; how to strengthen transport links between domestic markets and the rest of the world; how to win new consumers with the convenience that modern technology is fully prepared to provide.
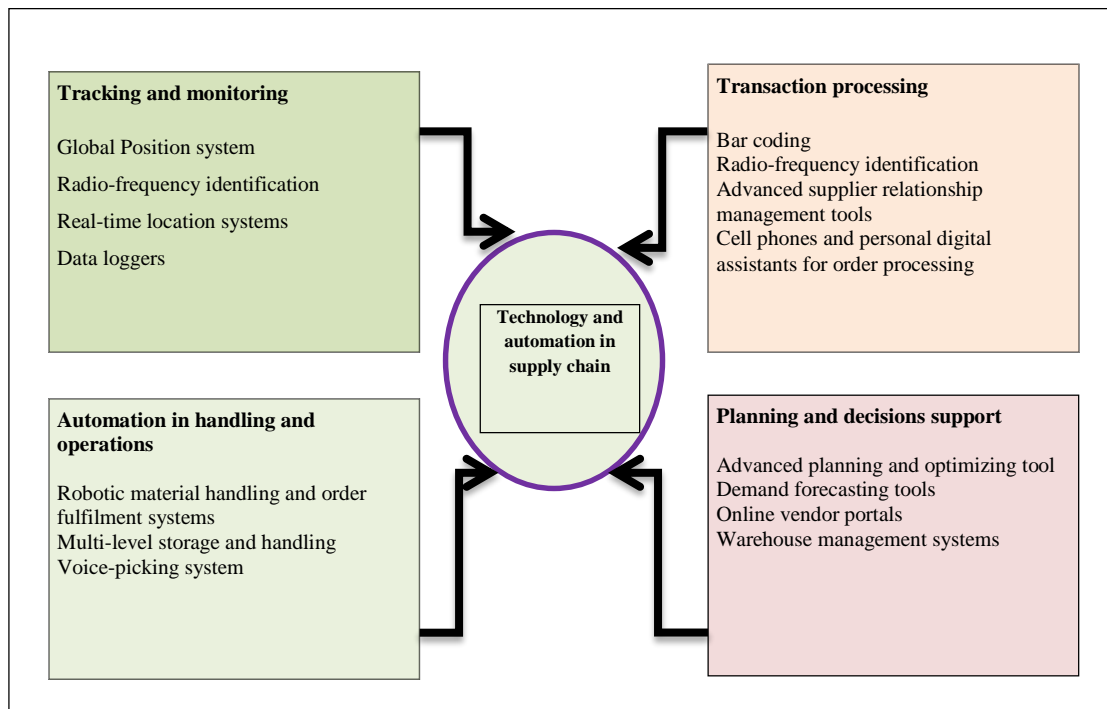
Tracking and monitoring

Global Position system

Radio-frequency identification

Real-time location systems

Data loggers

Transaction processing

Bar coding
Radio-frequency identification
Advanced supplier relationship management tools
Cell phones and personal digital assistants for order processing

Technology and automation in supply chain

Automation in handling and operations

Robotic material handling and order fulfilment systems
Multi-level storage and handling
Voice-picking system

Planning and decisions support

Advanced planning and optimizing tool
Demand forecasting tools
Online vendor portals
Warehouse management systems

Figure 1 Areas of technologies and automation adoption in supply chain
Source: Kearney A.T.[1]

2. Global business trends and strategy of satisfying consumers and IT tools

The traditional model of marketing through mass media starts from the communication process, through a medium for a large group of consumers to whom the company presents its products. Information technology and the increasing presence of the Internet network in everyday work and life of people actually represents an extraordinary opportunity for the distribution of an advertisement or marketing message. This model is especially evident in the flexibility of the Internet through the ability to create interesting dynamic ads and messages that can easily be segmented and referenced to the desired target group. Mostly this business model is realized through the development of so-called "portal" that provides information, news and / or texts, which have many visitors who are actually targeted by targeting certain ads and promotions on services and providers.

The main goal of all modern business concepts is satisfying the needs of consumers and establishing such an environment in the company where all business processes are going to be oriented towards the needs and satisfaction of the consumers, and as a result the relationship with them is going to result in quality and profits. Many successful companies have recognized the importance of consumer information and have accessed and mastered the details on which

they develop their organizational and marketing strategies. Particular attention should be given to the perception that consumers do not always have the same perception of the product as the manufacturer [3]. Consumers can give more advantage of low price, time delivery, reliable delivery, or receiving digital and innovative customized product. For these reasons a possible breakthrough could be market segmentation.

Basically segmentation of the market consists of: [4]

1) detection of segments of the market consisting of consumers with a certain similarity in the characteristics and the environment in which they live and

2) adjustment of marketing strategy in order to meet the needs of consumers in the established segments.

Accordingly, the market segmentation is actually determined by the research process and the result is called - market segments.

Consumer behavior covers interaction between thoughts, feelings and action of people and their environment. The more sellers know how this interaction affects individual consumers or groups of similar customers and the society in the broadest sense, the more able are they in meeting the needs and desires of consumers and offer them something valuable. The manner in which this change may affect the minds of consumers, their feelings and concrete actions have a significant impact on the marketing strategy. The knowledge of the patterns of buying and purchases by consumers in order to devise successful marketing strategy for electronic commerce, increases the importance of research into consumer behavior.
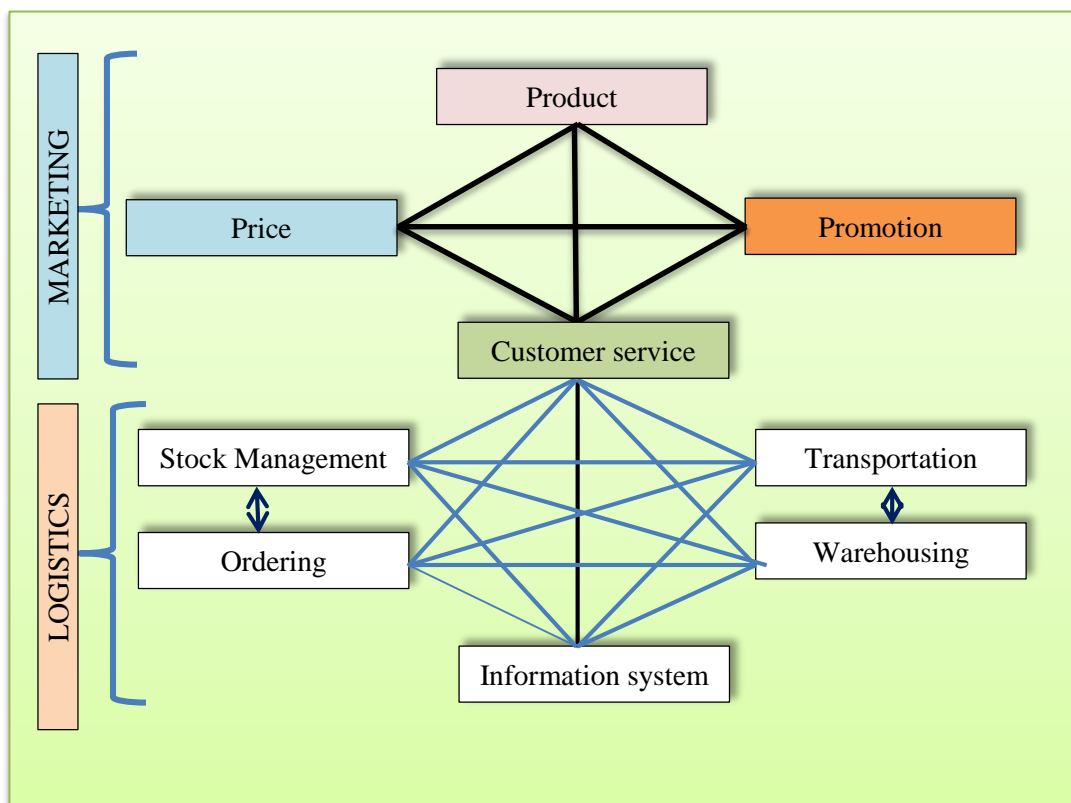

Figure 2 Connection between marketing and logistics
Source: Ciesielski (1999) according to Barcik, Jakubiec [2]

One of the unique competitive advantage is to be the first mover of business. The competitive advantage of a first mover in the market is due to the fact that the company was first one to market useful products or services. If companies develop loyal followers or a single interface that is difficult to imitate, they can retain the advantage of first mover for a long time. Yet in technological business innovation most first movers lack complementary resources to maintain technological advantage, so companies that are followers often receive the biggest part of the pie. The number of pre-orders for the tablet Amazon - Kindle Fire, only for five days reached 250,000 pieces. The company Apple, went even further. It is thought that with over four million purchased model iPhone 6 and iPhone 6 plus, from the day of starting to sale. Because of the interests of consumers, a number of people were forced to wait for their favorite product for weeks. [5] [6].

3. Satellite technology and contemporary market trends

Use of satellite technology has a great impact on the functioning of global markets. Global positioning technology (GPS) satellites are used to track the vehicles during their movement from the beginning to the final destination. Existing technologies play an important role in modern distribution sector for the movement of their products or raw materials. In fact, the benefits of specific technologies, such as identification of the radio - frequency (RFID) and Global Positioning Systems (GPS) are already in use by leading distribution companies. Technological change in communications (such as satellite global positioning systems that maintain communication with the carrier) helped to significantly improve the quality of services.

The effective use of these modern information technologies contribute significantly to the effectiveness and benefits in supply chain management. The computer system also supports the flow of information related to materials and products covered by the supply chain. Transport systems are supported by electronic data interchange (EDI) and the application of Internet technology. A number of technologies, such as CAD / CAM and automatic tracking systems are high quality support for the manufacturing process: planning for the vehicle load management and transport of products, planning warehouse space and informing customers. The benefits of using integrated systems is to reduce logistics costs and improve customer service. [7]

However, the increased use of mobile phones worldwide and the growth in sales of smartphones with GPS applications is an important support for providing important tools and information to enhance the concept of the supply chain. In this respect GIS systems are increasing support in market planning and strategic goals of companies.

Internet technology becomes a powerful business tool because its online commercial services and opportunities encourage the growth and spread of e-commerce. This technology now becomes an integral part of the agreement of each company to exchange data and information with their business partners. The existence and application of high-performance information infrastructure will dictate future development opportunities for each logistics company. These complex and sophisticated information infrastructures will induce interactive processes in future logistics activities. [8]

4. Positioning of products and services with wireless technology

With wireless technology (Wi-Fi, Bluetooth, GPS systems) people and traders and consumers can be contacted at any time. These devices break the barriers of geographic space and time difference. Knowing where the user is physically located at any time allows the provision of appropriate services. Precise location information is known when the GPS is attached to the wireless device user. GPS is already a standard part in many mobile devices. For example, the user can use a mobile device to find the nearest ATM or a restaurant. Localization can be general

for everyone in a specific location. They can be in the form of a defined subscribed group (target group, so users can receive messages depending on their location, need and desire) or refers to all buyers of a promenade. For example, if it is known that people love Italian food and they walk around the promenade which has an Italian restaurant they can receive SMS which will inform the specialty of the day and the restaurant offers 10% discount.

The market of software technology today can also offer other sophisticated models of products and applications that are appropriate for application in the convenience market. Such are the GIS software packages. While there are many manufacturers of GIS applications, GIS manufacturers essentially have one common goal: to offer user relevant information for the support of business decision making. Regardless of the different definitions and approaches, it can be concluded that GIS technology enables the development of applications for production, processing, analysis and presentation in solving a specific problem. Within the information system, there are often multiple GIS applications for various purposes (vehicle tracking, monitoring machinery for transshipment, display of the sales item, the location of all suppliers, etc.). GIS product is actually geocoded information, professional multi-product that is used in various trades and fields. GIS is applied in areas dealing with specific search locations. They are used in the military, police, travel agencies, transport companies, transport, environment, geological and mining professions, forestry, water management, spatial planning, urban planning, etc.

By spatial models companies can automatically generate various kinds of information about their customers. Through appropriate applications companies can always be linked with their current customers, but they can also analyze with ease the customers that have "abandoned" their loyalty. [9]

On the other hand, depending on the precise and comprehensive creation of the database, the exact definition of the necessary attributes and the structure and size of the fields in which the table is built, it allows obtaining of all necessary data about the researched area and its connection with graphic part of the project. The knowledge of relational databases largely determines the completeness and comprehensiveness of the completed task.

Lately GIS applications are increasingly applied in economic areas like marketing agencies, as well as an integral part of the web pages. Promoting any website with tourist content, locating and finding a place (hotel, restaurant, bank, shopping center) in most cases is followed by a GIS application.

Digital guide to buying: Addresses and phone numbers of the most beloved stores in major trading houses in major capitals and other cities are provided with supported research program. Users can find information on the bestselling books which they want to buy. Users can purchase music on-line for all to enjoy.

Broadcast ads: Knowing the current location of the user of mobile phone (using GPS systems) and his preferences or surfing habits, the company may send the user specific advertising message. "E-mail messages and advertisements," can also be sensitive locations that inform users about the various ongoing special sales in shops, promenades and restaurants close to the place where the prospective buyer is at the moment. SMS or short paging messages can be used for sending this kind of advertising on cell phone and pagers for everyone separately. Most companies are capitalized to target advertising. Digital maps are showing detailed guides of local communication movements, public transport vehicles in all major cities. Users can access information on the timetable of trains and buses to use "electronic guides" to the business of buying and automated comments for delays of trains.

Reservations. Ticket, tickets for travel, holiday, visiting some celebrities and movie tickets can be purchased on-line. Some of them have additional information about the location of the action, using GIS benefits.

Model of "smart packaging". Increasingly perfected is the universal standard technology of smart packaging. In the system of smart packaging, the products are marked by what is called

high-tech bar code broadcast signal. Computer exit in the store takes the signal and automatically rings to purchase. This type of purchase will not only eliminate the long queues for the cash register, but will also serve to afflict customers from theft and forgery. Similarly, the system of arranging the shelves will allow stores to better control their reserves. Census data of the reserves will be sent over the Internet to managers, manufacturers and distributors, so they automatically know when a new delivery is needed. [10]

Model *"just in time"* with all customers is easier way of communicating with all the "actors" involved in the supply chain. Companies such as Ariba Network have created software that helps large companies to organize their procurement process, creating a mini digital markets for individual companies. Ariba network create a user-adopted, integrated online catalog (where companies suppliers can specify their offer) for supply companies. In terms of sales, Ariba network helps suppliers that sell to large companies to purchase, providing management software creation of a catalog, shipping, insurance and finance. The software which buys and sells on the side is generally called software "management value chain." [11]

Model *"smart wallet".* Mobile phone devices are increasingly being used as "electronic wallets". For example Apple is partnering with companies such as VISA, MasterCard and American Express, in order to realize their plan to use the devices and wallets. Their idea is to enable users to fully replace the wallet with the phone. iPhone 6 would in itself contain an NFC chip and special software that allows you to start paying in major outlets. Company Google also provides its beneficial etc. "Smart wallet" - Google wallet.

5. Using GIS applications and services system CVS mobile

Most of the devices connected to GPS technology possess communication interface that enables connection to a variety of information systems and / or databases. An example is a system CVS Mobile, which is a top platform for monitoring and management of all motor vehicles, interoperable with tablet computing machines, smartphones and business monitoring systems. As a result of many years of experience, the use of technological advances most contemporizing, analysis and application of network graphic interface, "cloud" platform system CVS Mobile intend to keep pace with the needs and requirements of customers in the transport and logistics sector.

Initial configured version of remote graphic interface offers to users the following options: [12]
- interactive communication with drivers;
- fast and acceptable data on the current condition of the entire fleet;
- overview analyst with the possibility of configuring periodic information;
- simplified oversight fuel consumption;
- alert detection for sale of fuel, detection of deviations from optimal travel paths;

With its technical performance, this system achieves significant benefits for drivers and dispatch centers. The advantage for drivers:
- constant communication between the driver and dispatch center;
- simple navigation of the vehicle by voice command of different languages;
- greater security for the driver (information about possible roadblocks, traffic control, radar controls, obstacles on the road etc.).

Preference for dispatching services:
- management of the fleet through an Internet application;
- transport planning;
- planning road;
- display the current location of each vehicle;
- display the current position of each vehicle (moving or place);

- preparation of work orders;
- input and coordination with the desired points of interest;
- constant communication with the driver;
- monitoring of all telemetry data from the car and electronic sensors (speed, amount of fuel, temperature, load weight, etc.).
- monitoring and alarm response of the vehicle.

Preference for companies clients:
- monitoring of the movement of cargo own online;
- calculation of the estimated time of delivery of cargo / product.

Preference for the manager of the fleet:
- continuous monitoring costs;
- planning, management and maintenance of the fleet;
- sorted messages online by different parameters (vehicle, driver, customer, country)
- analysis on various parameters (vehicle, driver, customer, country)
- connection and integration with existing information systems and other software solutions.

Preference for owners
- possibility of buying and renting equipment;
- fixed monthly charges for use;
- return on investment in a short time;
- competitive advantage of the enterprise.

There are many reasons for attraction of this concept and others like it. This system enables the transmission of data in passenger charges, reimbursement of travel costs and other data applications purpose-built for data transfer terminal in the vehicle. It uses cutting-edge technology, which ensures a safe connection and authentication of data - faster, and most simple. Thus guarantees the user that the data will be protected and available for operational purposes and long-term needs of customers. Consumers today are constantly seeking new information about different products, delivered on time and without damage. In this respect coordination between suppliers and distributors in the modern global business environment through such modern mobile systems that guarantees the success of any modern business.

6. Conclusion

The Internet as a global network allows users to interactively access to diverse media content and communication. The Internet is one of the most complex work ever created. It elevates the whole social organization to a higher level. Internet influence on the creation of digital economy and the so-called "Third wave" of capitalism that affects the complete transformation of the business world, allowing positive growth worldwide.

As technological innovations are evaluated dynamically as the main factor for economic growth, drivers of economic growth and development can be not only large corporations, but also small and medium-sized enterprises if they are able to create and develop new technological solutions for production of new products or services. According to modern theories of economic growth, technological innovation, particularly in developed countries will be more important factor than capital growth because technological advances have increased the quality, thereby significantly contributing to the growth of economic power. Today, computer technology, especially the massive use of the Internet, will represent an important tool for companies to know who their individual customers and what are the effects on them of the marketing strategy implemented by the company to meet their needs. Companies apply the Internet to send multiple information about specific products and production lines in order to sell products and services directly to consumers which decreases the cost of final products. Companies are aware that modern consumers use

information technologies to search, compare and find detailed introduction to the technical characteristics of the products, which brings them to the final decision. So in that regard, companies need to maximize their efforts and business strategies to be always in step with market trends and expectations of consumers.

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