

# **The Role of E-commerce on Sales in Selected Countries**

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## **ABSTRACT**

E-commerce is an activity aimed at selling goods and services using information technology based on network interactions between the buyer and the seller. E-commerce tools allow consumers to organize trading in securities, transactions between legal entities, conduct activities on electronic exchanges, realize an order and payment for consumer goods, tourist and educational services, and pay utility bills. E-commerce is a parts of the economy, which includes all financial and trade transactions carried out with the help of computer networks, and business processes associated with the conduct of such transactions. It is known that in recent years an increasing number of transactions have been carried out remotely, using electronic devices. This is due to the fact that electronic payments are more convenient and faster than payment in cash.

This thesis deals with e-commerce and its impacts on sales in developed countries. The secondary data used for this study is extracted from official statistical sources. It is found out that in the five leading countries in e-commerce, sales and e-commerce is positively and strongly correlating. The main essence of the research was to be competitive in the market companies should include e-commerce into their system together with retail trade and gradually move to an electronic business management system. The recommendations developed in this thesis consist of the fact that companies need to integrate their business with users of mobile devices as their use is growing.

**Keywords:** E-commerce, e-commerce sales, retail sales, electronic business

## ÖZ

E-ticaret, alıcı ve satıcı arasındaki ağ etkileşimlerine dayalı olarak bilgi teknolojisini kullanarak mal ve hizmet satmayı amaçlayan bir faaliyettir. E-ticaret araçları, tüketicilerin menkul kıymetler ticareti, tüzel kişiler arasındaki işlemler düzenlemeleri, elektronik değiş tokuş faaliyetleri yürütmeleri, tüketici malları, turistik ve eğitim hizmetleri için bir sipariş ve ödeme gerçekleştirilmesi ve kamu hizmeti faturaları ödemelerine olanak tanır. E-ticaret, bilgisayar ağı yardımıyla gerçekleştirilen tüm finansal ve ticari işlemleri içeren bu ekonomi alanını ve bu tür işlemlerin yürütülmesiyle ilgili iş süreçlerini kapsar. Son yıllarda, elektronik cihazlar kullanılarak, giderek artan sayıda işlemin uzaktan gerçekleştirildiği bilinmektedir. Bunun nedeni, elektronik ödemelerin nakit ödeme yönteminden daha kolay ve daha hızlı olmasından kaynaklanmaktadır.

Bu tez, e-ticaret ve gelişmiş ülkelerdeki satışlar üzerindeki etkilerini ele almaktadır.. Bu çalışmada kullanılan ikincil veriler, resmi istatistiki kaynaklardan çıkarılmıştır. E-ticarette öne çıkan beş ülkede satış ve e-ticaretin pozitif yönde ilişkili olduğu görülmektedir. Araştırmanın ana özü piyasada rekabet edebilmektir. Şirketler, e-ticaretlerini perakende ticaretle birlikte sistemlerine dahil etmeli ve yavaş yavaş bir elektronik ticaret yönetim sistemine geçmelidirler. Bu tezde geliştirilen öneriler, işletmelerin sayıları giderek arttıkça işletmelerin mobil cihaz kullanıcılarıyla entegrasyon yapması gerektiğini içermektedir.

**Anahtar kelimeler:** E-ticaret, e-ticaret satışları, perakende satışlar, elektronik işgörm

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## **LIST OF ABBREVIATIONS**

|          |                                                   |
|----------|---------------------------------------------------|
| ATM      | Asynchronous Transfer Mode                        |
| BACS     | Bankers Automated Clearing Services               |
| CHIPS    | Clearing House Interbank Payment System           |
| EDI      | Electronic Data Interchange                       |
| EFT      | Electronic Funds Transfer                         |
| EU       | European Union                                    |
| HTML     | Hyper Text Markup Language                        |
| GTDI     | General-purpose Trade Data Interchange            |
| IBM      | International Business Machines                   |
| IDC      | International Data Corporation                    |
| MITP     | Ministry of Economy, Trade and Industry           |
| NTT      | Nippon Telegraph and Telephone                    |
| OLS      | Ordinary Least Squares                            |
| PRC      | The People's Republic of China                    |
| SABRE    | Semi-Automatic Business Research Environment      |
| TCP / IP | Transmission Control Protocol / Internet protocol |
| UN       | The United Nations                                |
| UNECE    | The United Nations Economic Commission for Europe |
| WTO      | World Trade Organization                          |

# **Chapter 1**

## **INTRODUCTION**

### **1.1 Aims of the study**

In this thesis, the relation between sales and e-commerce in five countries, namely China, United States, United Kingdom, Japan and Germany are analyzed. The main aims of the thesis are:

- To analyze the advantages and disadvantages of e-commerce and determine its role in world trade;
- To define the relation between e-commerce and sales in selected countries;
- Compare e-commerce with traditional trade;
- Understand how e-business functions in selected countries;
- Study the causes of the rapid growth of electronic commerce in the last decade.

It is found out that sales and e-commerce is positively and strongly correlating in the five selected countries.

There are some research questions of this study:

How sales and e-commerce have changed between 2008 -2015 in selected countries?

What is relationship between e-commerce and sales?

Is there an effect of e-commerce on sales?

How e-commerce is regulated in the legal field?

How e-commerce is rapidly growing in comparison with retail sales in selected countries?

## **1.2 Methodology**

Research is the process of scientific cognition of an object or phenomenon in order to reveal the laws of their origin, development and transformation in the public interest (Shakhovalov, 2007).

The use of research methods in the work is to form a comprehensive understanding of the research methods used in business practice, as well as the possible tools and technologies of IT and IP to collect, analyze, interpret and present data in order to optimize business processes and make management decisions (Shakhovalov, 2007).

This study used the quantitative methods of research. Quantitative methods make it possible to assess the degree of influence of factors on the effective indicator, calculate the simple regression equations for their use in planning and forecast analysis, and find the optimal solution for the use of production resources (Shakhovalov, 2007).

We used the Ordinary Least Squares (OLS) statistic technique method in excel sheet to measure the relationship between total retail sales and e-commerce sales in Japan, Germany, USA, China and United Kingdom.

OLS estimators have many desirable statistical properties. The method OLS gives us the best linear unbiased estimations of the regression parameters, because the sum of the errors is to be as small as possible in calculating the straight line that best fits the data.

### **1.3 Limitations**

Although the research has reached its aims we faced with some limitations. It was difficult to find data for a longer period. There are no official data on e-commerce for the early years of its development. Official statistical sources of selected countries began to publish data only since 2008. To get data from Japan, I had to use an translators because the data was stored only in Japanese. For some countries, I had to calculate the data for the period according to the growth index.

Since e-commerce is a new and young trend in the economy that is gaining pace of its development, respectively, few authors who have researched this topic in practice. Basically, all the authors describe electronic commerce from the theoretical part but only a small number of authors who analyze this topic so extensively and try to determine the relationship between electronic commerce and retail sales (Shaji, 2015)..

### **1.4 Structure of the study**

In the first chapter, we determined the objectives of the study and explained the limitations with which we encountered in the process of investigation. Also we tried to explain what e-commerce is.

In the second chapter, we attempted to analyze the work of other scientists and researchers in this topic in order to understand why e-commerce is so popular now, what are its main advantages and disadvantages, why do consumers prefer online shopping and through which countries such as China, the United States, United Kingdom, Japan and Germany have succeeded in this matter.

In the third section, we gave a description of our research methodology.

In the fourth chapter, focused on the analysis of the comparison of e-commerce and retail sales in the five most developed countries. Our results have been subjected to the work of many authors. E-commerce really has a fast pace of development compared to retail trade and in some countries even the crisis could not affect the growth of e-commerce sales.

In the last chapter, we gave a number of recommendations that our opinion will help the selected countries meet the growth of the needs of the customers, but also it will be useful for developing countries not only to follow the developed countries but to try to look into the future.

## **Chapter 2**

### **LITERATURE REVIEW**

#### **2.1 What is e-commerce?**

The relevance of this research topic is that e-commerce has become one of the main occupations in our life, since it is able to provide consumers with the necessary goods at any time of the day and at lower prices. Besides it is time-saving on making purchases. Modern business is characterized by a constant growth of the capabilities of the supplier companies, as well as the continuing expansion of global competition and an increase in the level of customer requirements. In response, business enterprises around the world are changing the way they organize and manage their businesses. . (Kabango and Asa, 2015). There is a rejection of the old hierarchical structure and the barriers between the company's departments are disappearing. The interaction of departments within the company and between its customers and suppliers is simplified. Business processes are rebuilt and go beyond the old boundaries. We see many examples of such processes, in which not only the whole company, but also its customers and suppliers can be involved in decision-making (Kabango and Asa, 2015).

It is difficult to give a unified definition to such a broad and relatively new concept as e-commerce. As a rule, various researchers who study this topic give their own interpretations, based on earlier work and adding to them their vision of what covers this issue. The United Nations Conference on Trade and Development defines e-commerce as a set of transactions related to the commercial activities of organizations

and individuals, which are based on the processing and transmission of digital information, including texts, sounds and visual data (UNCTAD, 2015). In 1996, the UN Commission on International Trade Law developed a model law on e-commerce, in which the term is defined rather broadly, not limited only to the sale and purchase, and includes commercial civil transactions concluded through the Internet and other networks. Thus, it can be assumed that e-commerce is a fast and economical type of business that knows no boundaries.

Chen Jian (2012) in his work «exploring online retailing strategies: Case studies of leading firms in the US and China» makes a theoretical overview of the very definition of "e-commerce" and the history of its development (Chen, 2012). Chen Jian (2012) gives a definition from the article "E-commerce" Carayannis and Alexander (2007): "E-commerce can be defined as a set of transactions for the purchase / sale of tangible and intangible goods and services via the Internet. It includes online retail, purchasing, online auctions and online payments" (Jian, 2012). This definition most clearly and exhaustively conveys the essence of e-commerce.

E-commerce is a mean to implement and support such changes on a global scale. It allows companies to efficiently and flexibly implement internal operations, tightly interact with suppliers and respond more quickly to customer requests and expectations. Companies have the opportunity to choose the best suppliers regardless of geographic location, as well as the opportunity to enter any region in the global market with their goods and services (Kabango and Asa, 2015).

A special case of electronic commerce is electronic retailing, implying that the customer is more than an ordinary consumer for the company. However, although

these special cases are very important economically, they are only isolated examples of a more general case that combines all forms of business transactions and transactions carried out electronically. Other equally important examples are internal interaction within a company or a free transfer of information from an external organization. The purpose of this work is to consider the business of e-commerce in the most influential countries in the world. The development of computer information systems and telecommunications technologies led to the formation of a new type of economic activity namely e-business (Kabango and Asa, 2015).

Shakhovalov (2007) most companies in the world have their own websites, 80% of the world's population look through hundreds of Internet pages every day, create their own businesses, and all these forms the World Wide Web, filled with interesting offers, goods, services and money. Electronic business is any business activity that uses the capabilities of global information networks to transform internal and external relationships to create profit. Business is electronic if at least two of its main components, for example, the production of goods and its sale is carried out via the Internet. E-commerce is an essential component of e-business. E-commerce refers to any form of business transaction in which the parties interact electronically instead of physical exchange or direct physical contact, and as a result of which the ownership or right to use the goods or service is transferred from one person to another. A more narrow interpretation of the concept of "electronic commerce" characterizes the system of clearing settlements based on plastic cards. Thus, e-commerce is a term used to refer to commercial activity using electronic means of data transmission. Provides the opportunity to carry out purchases, sales, service and marketing activities through the use of computer networks. In the broad sense of the word, e-commerce is the implementation of entrepreneurial activities through the use of electronic means of

data exchange. The exchange of goods, information and services is undertaken using e-commerce.

E-business has four main stages of use: marketing, production, sales, payments and the degree of using of information and communication technologies and systems serves as a measure by which a business can be considered electronic (Shakhovalov, 2007). The degree of use of telecommunication technologies is determined by the use of the global Internet as a tool for organizing a single electronic business information space. All the information is stored on web servers which computers belonging to organizations that provide Internet services. Access to information is provided by requests from browser programs of network clients. Promotion of e-commerce on the Internet provides manufacturers access to the maximum number of consumers and their diverse preferences and provides an opportunity for customers to enter their orders into the enterprise management system.

E-commerce is a special area of the economy, which also includes trading and financial transactions carried out using computer networks, as well as business processes conducted through such transactions. It is known that in recent years an increasing number of transactions have been carried out remotely, using electronic devices. This is due to the fact that electronic payments are more convenient and faster than payment in cash. More and more people prefer to pay for purchases with electronic money (Jian, 2012).

There are certain trends in e-commerce that will be relevant in the near future, both small and large businesses should pay attention to this (Shaji, 2015).

1) Growth of mobile traffic

Shaji (2015) the number of users of mobile gadgets is growing exponentially. But not all online stores have made maintenance convenient for owners of smartphones and tablets. Potential buyers do not have the opportunity to see the product in detail, information about it is given in abbreviated form, the interface is inconvenient for ordering. So far, more than half of customers still prefer to make purchases using personal computers, although they can search for goods on mobile gadgets.

2) Active use of social networks

Social networks have long turned into an effective promotion tool. Many manufacturers (fashion and sportswear, jewelry, health products) are actively using Facebook to redirect customers who have already visited their sites. Through social networks they remind about the goods that visitors saw. This is an effective tactic for increasing traffic for many online stores (Shaji, 2015).

3) Increased competition

Shaji (2015) believe that the competition in the field of electronic commerce in 2017 will intensify. New start-ups are entering the market, major trends are growing, which have been trading offline.

The more tools for development and promotion you use, the better. But to be as competitive as possible, you need to stand out from the crowd. For example, use original, uncommon, different from others content (Shaji, 2015).

4) Using artificial intelligence

This technology is still at the very beginning of its development path, but experts are sure that artificial intelligence will soon become an indispensable assistant for advancement. There are already developments that help to promote the product "smarter". This will make it possible to more accurately "beat" the target audience and get a better return (Shaji, 2015).

The future of international trade is closely linked to the development of e-commerce, as its advantages are evident before traditional forms of trade. Proofs of this can serve as forecasts of analysts. So, the American researcher Hoar (2015) from firm Forrester published forecast studies for the period 2015-2020. For the e-commerce sector in Russia, Europe, the Asia-Pacific region, and also in the USA:

- the share of online sales in the Asia-Pacific region (Australia, China, India, Japan and South Korea) will increase to \$ 1.4 trillion by 2020, and the average annual growth rate will be about 14.3% (Hoar, 2015);
- online sales in the US will increase by 56% to \$ 523 billion by 2020: on average, the sector will add 9.3% growth over five years (Hoar, 2015).

The market forms new forms of economic relations of the next economic cycle that do not fit into the traditional institutional framework. The effectiveness of the subjects of the traditional economy is falling, and their methods of promoting goods become obsolete. In place of established economic relations and institutions, new ones are coming.

## **2.2 History of e-commerce**

The history of e-commerce is only about two decades of intensive development, which in comparison with the history of other branches of the economy, seems an

insignificant period of time. The first systems and methods of electronic commerce are straight with the birth of technologies for automating the sale of air tickets, banking operations, plastic cards and the construction of automated systems for managing the resources of enterprises (Miva, 2011). The first systems of electronic commerce started in 1960s in USA. Initially, e-commerce was conducted over networks using proprietary data exchange protocols, which was objectively constrained by e-commerce. For the development of e-commerce, electronic data interchange standards (EDI) were created which are sets of rules for the electronic registration of standard business documents: orders, invoices, customs declarations, insurance forms, invoices, etc (Miva, 2011).

The project of American Airlines and IBM is one of the first examples of e-commerce in 1960 (Shakhovarov, 2007). American Airlines and IBM have started to build a system for automating the operation for reserving seats for flights. Through the automation of the process of calculating tariffs when reserving places, the cost of services declined and passenger transportation grew. The SABRE (Semi-Automatic Business Research Environment) system has created air travel more available to usual passengers and support them to orientate themselves in tariffs and flights. By the late 1960s (Ross, 2013). In the United States, there were already four industrial standards for the exchange of data in the management systems of aviation, rail and road transport. Approximately in the same years similar events occurred in England. The set of Tradacoms specifications developed and adopted by the United Nations Economic Commission for Europe (UNECE) as a standard for data exchange in international trade organizations. This set of formats and protocols was called GTDI (General-purpose Trade Data Interchange).

On June 27, 1967, in the Northern region of London Enfield, Barclays Bank installed the world's first ATM, developed by De La Rue. At the moment there are more than 1.5 million ATMs in the world (Morley, 2017). In 1968 in the UK, an electronic system of transfers and clearing BACS (Bankers Automated Clearing Services) was created to service commercial non-cash turnover (Lowe, 2017). A similar system in the United States (CHIPS, Clearing House Interbank Payment System) was founded by the New York Association of Clearing Chambers in 1970 to switch from paper checks to electronic payments (Shakhovalov, 2007). The end of the 60's., two founders of global American plastic card service systems: Bank of America and the Interbank Cards Association organized a joint dispatch of plastic cards by mail, which resulted in a rapid increase in the number of cardholders (Shakhovalov, 2007). At the same time, the number of companies working with these cards also grew. This action forced US banks that have their own local card systems to join one of the existing global systems. It is necessary to explain how in the market of mutual settlement systems on plastic cards there were two main players: Bank of America and Interbank Cards Association. The largest of the banks that implemented their own "plastic" projects - Bank of America had a wide network of offices throughout the United States. This allowed them to first offer a federal-scale card project. Unlike locally-operated banks, whose cards were served only in a certain geographic region, Bank of America cards were serviced throughout the United States. Increased competition from the Bank of America forced the rest of the banks to unite. Thus emerged the second largest card market player - Interbank Cards Association.

In middle -70's, for the first time, electronic data interchange (EDI) and Electronic Funds Transfer (EFT) tools began to be used (Miva, 2011). The disadvantage of the first systems was their high cost and non-standard software and hardware components.

Significant initial costs for the acquisition of equipment and operation of private networks could be afforded by only a few banks and large enterprises.

The attractiveness of the Internet for e-commerce is primarily due to the low cost of data transfer. However, the problem was to make EDI-systems available to the masses of consumers of the global network. As a result, in the mid-1990s, another standard was developed - EDIFACT over Internet (EDIINT), which describes how to transfer EDI transactions via secure SMTP / S-MIME e-mail protocols (Trauth and Thomas, 1993). Nevertheless, this standard did not become exhaustive, and attempts to link the formats of electronic documents - HTML on the Internet and EDIFACT - in global computer networks (WANs) are not stopping (Trauth and Thomas, 1993). An essential disadvantage of HTML can be called the limited set of its tags for displaying specialized information (for example, multimedia, mathematical, chemical formulas, etc.). HTML is replaced by XML (Extensible Markup Language), a markup language that describes a whole class of data objects called XML documents. This language is used as a means to describe the grammar of other languages and to control the correctness of the compilation of documents. That is, XML itself does not contain any tags intended for markup, it simply determines the order of their creation.

CompuServe offers online retail products to its customers in 1992 (Ying, 2008). This gives people the first chance to buy things off their computer. In 1992 the two biggest e-commerce company was created; Amazon and eBay.

## **2.3 Types of e-commerce**

There are several generally recognized categories, into which e-commerce is divided. As a rule, such a delimitation is carried out according to the target group of consumers (Krishnamurthy, 2003).

### **Business-to-business (B2B)**

The term B2B usually refers to a wide range of online services, in which, in one way or another, not only private individuals, but enterprises and companies are also involved (Krishnamurthy, 2003). That is, in the B2B sector, companies sell goods and services to each other. The main commodity and money turnover occur in the corporate environment and practically do not enter the consumer market. A particular attraction of this sector of online commerce is that it is more tied to commercial necessity, rather than to consumer preferences and fashion. B2B (business to business) - a form of interaction and building of Internet business, in which the parties are enterprises. An electronic trading platform built on the principle of B2B (Business to business marketplace) is the place where business deals are concluded between enterprises - buyers and sellers. The introduction of B2B systems contributes to the development of the market and fair competition, increases the adequacy of market policies. B2B is a type of activity where two companies conduct business transactions using the Internet. For example, a company can place a request for commercial offers, get current quotes from its suppliers, sign a contract, get or pay bills, publish documents. This type of activity on the Internet is the most promising for Russian companies. It allows to build a new level of commercial ties between producers and creates a favorable ground for partnership between them. The market is becoming more open and a lot of opportunities for interaction and acquisition of necessary services in the local market,

eliminating the need to import materials and equipment from abroad or a long search for a business partner. In the international sense, e-commerce gives the company more chances for high activity in the global market. The B2B system can be as open as ordinary users or other possible partners can see and visit, or closed - existing only for certain partners or working groups and performing only certain technological functions (Krishnamurthy, 2003).

According to the functionality of the B2B sites, it can apply to the following groups (Krishnamurthy, 2003):

- Catalogs. They are the most trivial version of a B2B-type site where buyers find a seller of commodity items with a fixed price.
- Electronic exchanges. They differ in complexity compared to catalogs and are functionally similar to real exchanges. They are used mainly for trade in consumer goods, such as grain, paper, metal, etc.
- Auctions. Such sites are functionally similar to real auctions and B2C virtual auctions, but due to the specificity of the B2B model, they are often used to sell surplus stocks.
- Electronic communities. Doing business is not always limited to committing business transactions that are common to everyone. There are many other areas in which business may require the participation of partners. For example, various kinds of research, political lobbying or the exchange of ideas. The Internet is the ideal environment for bringing together these groups with similar goods and interests (Krishnamurthy, 2003).

The main task of B2B systems is to increase the efficiency of companies in the B2B market by reducing the costs of preparing trade procedures and expanding the geography of the business to the scale of the whole world. The tasks of B2B systems also include (Krishnamurthy, 2003):

- Organization of interaction between enterprises - fast and convenient
- Building of secure reliable channels for information exchange between firms
- Coordination of enterprises' activities and their joint development on the basis of information exchange.

According to the B2B model, companies enter into transactions with each other using the Internet. B2B platform combines solutions for suppliers and buyers, forming a single system in the form of an Internet portal. When creating any B2B platform, one should take into account a number of important aspects that are necessary for successful work (Krishnamurthy, 2003).

#### Business-to-consumer (B2C)

B2C is the most "obvious" business model. An enterprise (a legal entity or a private entrepreneur) sells goods or provides services to individuals. This category of business includes a significant number of e-commerce enterprises: Internet shops, paid services for individuals, electronic casinos, numerous enterprises selling consulting and information services. The structure of B2C enterprises usually includes the following components (Krishnamurthy, 2003):

1. An interactive web site containing information about products, products and services, price lists and catalogs. As a rule, the site gives the client the opportunity to register an on-line order and track the stages of its execution. If we draw an analogy

with the non-electronic business, we can say that the site performs the functions of the front office, shop window, dispatch service and partly customer support (Krishnamurthy, 2003).

2. Site hosting site - the place where the site is physically located. It can be a company's own server located in the office of the enterprise or in the territory (hosting site) of the Internet provider. This option is typical for large network projects. For a small project, the site can be hosted on the provider's server. This is much cheaper and allows you to reduce the number of personnel responsible for the functioning of the site (Krishnamurthy, 2003).

3. Backofis - technical personnel and the administration of the enterprise, the premises where it is located and where the administrative and technical management of the project takes place (Krishnamurthy, 2003).

4. Delivery service in B2C enterprises plays a very significant role. The faster the goods will be delivered to the client and the less inconvenience he experiences, the more likely that he will make a re-purchase. For different businesses, the delivery service can take many forms. Sometimes it may not be at all as a significant unit (for example, if an enterprise provides consulting or information services). In other cases, you can limit yourself to courier service. There are situations when an enterprise trades in goods that are of considerable size and weight. Then the delivery service can have its own or rented warehouse, car park, etc (Krishnamurthy, 2003).

5. Division of work with suppliers. Like any non-electronic enterprise, a good supplier (reliable, with reasonable prices) is an integral part of the business. Some other firms provide services entirely by their own personnel (Krishnamurthy, 2003).

6. System of payments for goods and services. Ordering the goods, the customer must pay for it. It's good when you can combine the payment with the delivery of the goods. But this is not always possible (for example, when the goods are sent to the client by mail or in general in electronic form, if this is information or software). In this case, the customer must pay for the goods without entering into direct contact with the personnel of the enterprise. Of course, you can pay for the purchase of a regular bank or postal order, but this is associated with great inconvenience - with a significant time for payment. To solve these problems on the Internet, there are electronic payment systems. The formation of a settlement system implies the conclusion of contracts with these systems and the installation of software on the site that allows them to begin working with them (Krishnamurthy, 2003).

7. Marketing service. In modern conditions, no Internet project cannot survive without a thoughtful marketing system. Traditionally, it is one of the most complex components of the network business, where mistakes are especially costly (Krishnamurthy, 2003).

Already at the stage of creation of the B2B enterprise, it is necessary to clearly understand the consumers to which it will be targeted. A very important issue here is the sufficiency of resources to achieve the goals (Rania, 2011). The Internet, as a business environment, gives entrepreneurs a lot of illusions associated with "unlimited" coverage of potential customers. Often the investor, conceiving a certain

network project, seeks to make it as global as possible and to cover as wide a market share as possible, not taking into account that he cannot digest it with available resources. The reason for this approach is in many respects the relatively low cost of creating an Internet enterprise in comparison with the usual company. For example, the creation of a small, without much frills, online store with a reasonable approach will cost one thousand and two dollars, while the potential number of buyers of such a store (with an optimistic forecast) can amount to tens of thousands. When you try to compare these costs with the costs of creating a normal business (serving a similar number of customers), it turns out that the costs on the Internet are lower by several orders of magnitude (Rania, 2011).

#### Consumer-to-consumer (C2C)

Type of electronic commerce between the buyer and the seller. The site acts as an intermediary between the buyer and the seller. Consumers enter into a deal and expand their activities with the help of a third-person provider (it provides exchange services). Around the website, an online community of people is formed, united by specific interests, their number is directly proportional to the efforts of project participants and the organization of necessary services (Rania, 2011). Direction C2C allows you to enter into transactions at any convenient time, reduce overhead costs and save money for the end user. The C2C sector includes online auctions where sales are made directly from one person to another in the framework of electronic business, when there is one seller and many buyers. To take part in auctions, a buyer or seller should become a client of one of the auction servers and put up for sale their goods or express a desire for its purchase through the Internet. The Internet allows one person who has become an auction client to participate simultaneously in several electronic tenders, and for registration it is enough to have an electronic bank account. Banking structures use

electronic auction technology for currency trading. Sale of goods for the highest possible price is called direct auction. In this structure - one seller, and buyers two or more. Reverse auction - one buyer and several sellers - all auctions of public procurement work on this structure (Rania, 2011). Auctions implement a scheme of natural pricing, so it is used to explore market opportunities. Bidding at auctions are conducted according to the following schemes: 1) Standard or English auction: the open format of the offer is used, when all buyers know about each other's offer. The seller assigns a starting price, and buyers indicate a price of 3% more than the proposed price (Shakhovalov, 2007). 2) The Dutch auction: starts with a deliberately inflated price, also uses an open form of offers and continues until one of the buyers agrees to accept it. 3) Simultaneous bid auction: all buyers simultaneously assign prices and the winner is the one who offers the maximum. 4) Double auction: when the offer comes from the seller and the buyer at the same time. As a result, an equilibrium price is established - electronic exchanges operate on the principle of electronic auction. 5) Auction of closed bids: when the buyer and the seller make closed (secret) offers within the set time. The winner buys the goods at a price that precedes the maximum.

Online auction is an information base communication, which contains a description of the goods admitted to trading. The system of rating evaluations of bidders operates at auctions. It consists in the fact that the winner of the auction and the seller expose each other estimates reflecting their attitude to the counterparty that has developed during the interaction. The issuance of this assessment is mandatory (Rania, 2011).

## **2.4 E-commerce in China**

Adopting the policy of industrialization and innovative development, China fully tries to use the opportunities and methods of electronic commerce to intensify the country's development and comprehensive modernization of all aspects of the society.

As in the rest of the world, the development of Internet and e-commerce in China began with the use of EDI (electronic data interchange) (Qin, 2009). In 1990, the UN introduced a single EDI standard and began distributing it around the world, thereby launching its use on a global scale (Qin, 2009). Qin (2009), in 1995 the Internet started to seep into various spheres of life of Chinese society. Internet companies, e-commerce companies were wide spread. Since 1997, in this sector of the economy, a wide range of types of advertising and mailings are being distributed; Terms and concepts of e-commerce are applied throughout China.

The development of trade and electronic commerce contributes to structure adjustments of the Chinese economy and the increase in production. It is useful for building a modern production system providing change in the economic and for raising the level of enterprises and their international competitiveness.

For 10 years, e-commerce has managed to take its place in the Chinese market, which was made possible primarily thanks to the state policy to support this sphere, and also because it is relatively easy to start a business in the segment of Internet commerce in China.

Despite all the positive trends in the development of e-commerce, nevertheless, a number of problems remain unsolved. Traditional forms of commercial activity continue to prevail due to the fact that many of the new e-commerce business models

are young and immature, so that, there is no corresponding legislative base. All this affects people's confidence in the system and hinders development in this area. Nevertheless, such facts as the colossal population and high rates of information lead us to the conclusion that e-commerce in China has great potential.

In the annual review of the development of the Chinese Internet, it shows that in 2014 China has the largest number of users in the world - 649 million people. The number of mobile Internet users was 557 million people or 85.8% of the total number of Internet users in the country ([www.reuters.com](http://www.reuters.com)).

In 2008-2012, the size of the Chinese online store market increased from £ 12.82 billion to £ 130.30 billion (Vlachos, 2016). In 2014, China's B2C market grew by 68.7%, and the C2C market grew by 35.2% compared to 2013 (Vlachos, 2016).

According to estimates of specialists, China's income level from e-commerce will grow to \$ 1 trillion a year, which will strengthen it to the position of world leader. As yet, the potential of electronic commerce is not realized and the logistics system is poorly developed. Also, online audience indicators have not reached their maximum values, respectively, which may increase the volume of the Chinese e-commerce (Znou, 2013). And although the young Chinese market will grow by 65%, the more mature markets of the UK and Germany are not going to stand still, the growth forecast for them is 14% and 13% respectively (Qin, 2009).

In China, consumers use the Internet as a retail channel much more actively than in other countries of the world, despite the fact that there are relatively few online customers. The leader of Internet trading in the B2C segment in 2014 was the Tmall

store, which is part of the "AlibabaGroup" corporation, with a market share of 57.4% (<https://seekingalpha.com>). On the second and third places are located "Jingdong" 21.1% and "Suning" 3.6% (<https://seekingalpha.com>).

The issues of state regulation of electronic commerce are within the competence of the Ministry of Industry and Information of the People's Republic of China, as well as the Ministry of Commerce of the PRC. The Ministry of Commerce of the People's Republic of China operates a specialized department of electronic commerce and information, whose functions include the development of plans for the development of e-commerce, facilitating the information of enterprises, implementing measures to support the development of domestic and foreign e-commerce markets, and the development of a system for analyzing and managing e-commerce. The basic normative document regulating activity in the field of online trade is the "Interim Measures for the Administration of Online Commodity Trading and Relevant Service Activities" approved on May 31, 2010 by the State Administration of Industry and Commerce of the PRC and effective from July 1, 2010. (Binding and Purnhagen, 2011).

## **2.5 E-commerce in USA**

The economic leadership of the US today is largely determined by their technological and information advantage over other countries. The US leadership in the field of information industry is due to the fact that the federal authorities are clearly aware of the important role played by information technology in the development of the economy and society, large-scale investments in the private sector in the field of information technology and the development of intellectual capital. The US has advantages as creators of the Internet. One of the industries of the information industry,

most actively developing in the US is e-commerce. The reasons for the wide spread of e-commerce include the growth of business transactions on the Internet, the reduction of communication prices, which allows for doing business "at a distance", narrowing the mass market to small groups of consumers. The development of e-commerce in the US is supported by state policy. Thus, in the US, a moratorium on sales tax exemptions was introduced with respect to Internet sales. E-commerce is becoming more common as the Internet expands and the number of network users increases (Qin, 2009).

The project of American Airlines and IBM are the first examples of e-commerce in 1960 (Shakhovalov, 2007). American Airlines and IBM have started to build a system for automating the operation for reserving seats for flights. Through the automation of the process of calculating tariffs when reserving places, the cost of services declined and passenger transportation grew. The SABRE (Semi-Automatic Business Research Environment) system has created air travel more available to usual passengers, give supporting them to orientate themselves in tariffs and flights and the number of which is permanently growing (Ross, 2013). By the late 1960s. In the United States, there were already four industrial standards for the exchange of data in the management systems of aviation, rail and road transport. If you consider the e-commerce market in the US, you can see that the three most top categories of online sales are Computer and electronic consumers, apparel and accessories and auto and parts. In monetary terms, the category of computers is \$ 76 billion, the category of apparel and accessories is \$ 60 billion and the category of auto and parts is \$ 36 billion (<https://www.statista.com>). But if you look from the point of view of quantitative analysis, then the category of apparel and accessories are the most frequently bought items online in the American market. This is due to the fact that most online shoppers make their online purchases by using the phone, which is a very convenient, easy and

fast way to make a purchase. The biggest giants of the e-commerce market are Amazon.com, Wal-Mart Stores Inc. and Apple (<https://www.statista.com>). But the real power driving e-commerce in the US is Amazon. It's sales account for 23.5% of the total e-commerce sales (<https://www.statista.com>).

Currently, there is no single officially recognized model of regulation and taxation of e-business activities in world economic practice, ensuring its use of the global Internet. At the same time, the development of the Internet in modern conditions has reached such an all-encompassing level, which implies a transition from self-development to the conduct of well-thought-out state regulation of activities in this area and, first of all, in the management of economic relations in the network. The solution of the question of taxation of economic relations carried out through the global information and communication network, currently in force in accordance with the law, which regulates the classical legal relations in the traditional economy. If you want to use it in relation to the world's computer network, the absolute majority of existing norms are simply not applicable. In addition, the worldwide nature of the Internet network does not provide an opportunity to fully conduct tax accounting within a specific country. Because of the specific nature of the industry, the processing of information flows in the network. In this regard, the question arises as to which international norms should be adopted in this field.

In the late 1990s, the experts of the US electronic trade working group under the US Government, together with the Organization for Economic Cooperation and Development, developed several versions of the International Agreements on Electronic Transactions, as well as a number of proposals in the field of taxation of economic activities in the global Internet communications network. The project

developers proceeded from the binding of "electronic services" to the physical location of the computer server, which was proposed to be considered a permanent representation.

The USA, which has leadership in the field of the latest information technologies, adheres to the concept of establishing a system of non-interference (or minimal interference) from the state in the activity of the electronic sector of the economy. In other words, we are talking about the process of self-regulation of electronic economic activity.

## **2.6 E-commerce in the UK**

The UK is one of the key players in the e-commerce markets in Western Europe. Traditions of trading business have long been formed here, and virtual services have won high positions among the most capricious consumers. The advantage of developing business in Britain consists in gaining experience in the English-speaking market with serious competition, which will become a reliable base for reaching the English-speaking continents - America and Australia.

In UK, e-commerce arose around the same years as in the US. However, in this country the main area of application of e-commerce was not transport, but trade. Today in the UK, rising living standards and fierce competition among Internet service providers cause an increase in the number of users at a high rate.

Reliable digital data transmission systems, the widespread use of mobile networks, the ubiquitous distribution of smartphones and high buying activity have brought Britain the first place in the ranking of the highest consumer online spending in the world, nearly 2 thousand pounds per person per year (<http://www.telegraph.co.uk>).

Online market in UK is among developed countries, e-commerce occupies the largest place in the economy for the British. Solovey (2016), the total market volume in 2015 is estimated at \$ 120 billion, only China and the US with their giant economies. The share of online sales in British retail has long exceeded 10% and is growing steadily (Solovey, 2016). What are the reasons for this success? First, in the traditional innovative activity of British business. Secondly, the British society, despite its "stiffness", is very modern. The British quickly realized the convenience of electronic purchases: low prices, remote service, saving time and attention, the breadth of choice (Solovey, 2016).

The legal regulation of e-commerce in the UK is based on the EU Directive on Electronic Commerce (Directive 2000/31/EC). Legislative work in the European Union on the development of a basic normative act in the field of electronic commerce was launched in 1996. Following a broad discussion, the European Commission in April 1997 launched the European Initiative on Electronic Commerce (COM, 1997). In June 2000, the Directive on certain legal aspects of the services of the information society and, in particular, electronic commerce in the domestic market was adopted (COM, 1997). Member States were instructed to align their legislation with this Directive by January 17, 2002.

The categories of goods in the UK the online shoppers prefer are the following goods and services: music, air tickets, booking room in a hotel (Solovey, 2016). Amongst the most visited are the UK e-commerce sites, we can find some of the biggest global e-commerce players such as eBay and Amazon (Solovey, 2016). However, we can also see that UK retailers such as Tesco, Argos and Next have all successfully adopted e-commerce into their strategies. Thus, e-commerce in the UK, as the most promising

market, is still gaining momentum. In the UK, e-commerce is a natural way of buying different products among buyers. More and more different categories of products prefer to buy using the Internet. Categories such as buying music, ordering air tickets, reserving places in hotels, buyers prefer to purchase without leaving home or using gadgets that are always at hand. The purchase of various equipment, clothing and insurance of the machines still makes both the traditional way, and through electronic resources.

## **2.7 E-commerce in Japan**

In 1997, Hiroshi Mikitani founded the Rakuten company (Akhtar, 2013). The name is translated from Japanese as "optimism". It is worth noting that the company was the first Japanese site for e-commerce. Mikitani does not hide the fact that initially he was not sure of further success, given the serious competition in the market of his homeland, where such services from other countries had already established themselves. The three big ecommerce sites in Japan, in order of market share, are Rakuten, Amazon Japan, and Yahoo Japan Shopping. An important trend in the development of trade and business in Japan is the active implementation of e-commerce systems that provide new opportunities for the realization of national products in the external and internal markets, as well as for managing financial flows using the resources of the global computer network Internet.

According to the Ministry of Economy, Trade and Industry (MITP) of Japan, in 2015, goods worth 9,480 billion yen were sold through the national e-commerce system (OECD, 2015). The volumes of the "consumer" electronic market according to the B2C (Business-to-Consumer) scheme amounted 90 percent of which came from consumer goods (cars, electronics and computers) and information services (OECD, 2015).

The Japanese e-commerce market has a significant potential capacity and in the next decade it can become one of the most dynamically developing sectors of the economy. Analysts include narrowly specialized B2B trading systems, oriented to both high-tech and traditional industries: information, communication, chemical, energy and gas, as well as agriculture, among the promising segments of this market. Among the main positive factors objectively contributing to the expansion of electronic business, a large number of small and medium-sized enterprises, a high level of development of the regional computer communication infrastructure, and the availability of highly efficient goods delivery services. In this regard, state organizations and private companies of the country pay special attention to the complex improvement of the communication infrastructure, the organizational and technical information security system and the legal and regulatory framework necessary for the accelerated development of electronic commerce and entrepreneurship.

State organizations and private companies of Japan pay special attention to the comprehensive improvement of the legal and regulatory framework for electronic commerce and business, the communication infrastructure, and the organizational and technical information security system necessary to accelerate the development of this sector of the economy. The basis of the legal framework of Japan in the field of electronic commerce and the further development and introduction into the practice of information technology are currently the following regulatory acts and laws adopted by the Government of Japan in 1998 (OECD, 2015). The plan is aimed at creating conditions for accelerated development of information technologies in the country, development of information and telecommunications infrastructure, development of competition in the communication industry, dividing the largest companies into smaller ones, reducing the level of state interference in commercial activities of

telecom operators, opening access to foreign companies for the Japanese market of communication and telecommunications, development of electronic commerce, etc.

In accordance with the special government program on combating computer crimes and preventing cyberterrorism adopted in February 2000, in Japan, the activity of government agencies is being intensified to improve the organizational and technical system for protecting against unauthorized access to network information resources.

The law was adopted by the Japanese Parliament in June 2002 and will enter into force on April 1, 2003 (<http://www.kantei.go.jp>). The law defines the content of "e-commerce", subjects and objects of trade transactions using network technologies, the role of state bodies in the regulation of electronic transactions, the procedure for registration of transactions, audit procedures for commercial activities in the field of electronic commerce, and etc.

## **2.8 E-commerce in Germany**

The development of electronic commerce in Germany as well as all over the world began with the development of information technology. The technological and innovative foundations created in Germany for many decades are one of the main sources of economic growth and the emergence of electronic commerce. Scientific, technical, technological and intellectual potential is viewed in German society as a national asset that allows the country to provide world leadership in many fields of knowledge and socio-economic development. One of the first electronic placards is OTTO, which started its online business from 1995 to today; OTTO is a leader in the German e-commerce market (<http://www.reuters.com>).

In Central Europe, the leader of e-commerce is Germany - it generates 25% of the total turnover in the region. E-commerce is 12% of German GNP in 2015 (<http://ec.europa.eu>). Online, there are 77% of Germany's population (almost 63 million) use e-commerce which makes the country the most important European online shopping market. 42 million Germans are 52% of the country's population, today they make purchases on the Internet (<https://ecommercenews.eu>). The most popular trend in Germany's online trading are fashion, books and home electronics. When promoting the online shop it is worth considering that, despite the high degree of penetration of the Internet, the inhabitants of Germany are not very active in social networks. So, for example, only 17% of users check their Facebook in the morning (<https://ecommercenews.eu>). The Germans pay much more attention to e-mail. Great value for German consumers is the opportunity to return the goods. Therefore, in order to ensure that customers are satisfied, online stores operating in Germany, should establish a return system and organize free shipping.

The E-Commerce Directive ensures the development of the EU internal market with regard to information society services, which are understood as "services rendered at the individual request of the client at a distance, usually for remuneration, through electronic transmission and storage of data" (Directive 2000/31/EC). The provision of such services on an individual request is their difference, in particular, from television services. The above concept goes beyond the scope of transactions concluded electronically, and includes services for the online search and provision of information, access to databases, transfer and storage of information, the exchange of commercial correspondence.

Germany is one of the most interesting European countries for the development of e-commerce. Consumer confidence is a priority in Germany. Special attention should be given to the security of making electronic payments, the clear organization of logistics processes and the high quality of customer service. Among the obstacles that may arise it is necessary to mention the problem of the language barrier (specific dialects of different regions of the country), the complexity of the device of the legislative and tax systems and strict observance of the laws on confidentiality. However, in Germany there is no difference in rights between citizens of the country and non-residents.

## **2.9 The reasons of the rapid growth of e-commerce in the last decade**

Many authors try to describe the reasons for the rapid growth of e-commerce. Kabango and Asa (2015) emphasize the following high rates and impressive scale of the development of electronic commerce in the world are due to the combination of economic, social, electronic, technological and legal nature. They can be separated into three essentials:

- The first is the liberalization of economic activity and the globalization of the economy. These factors are manifested in the free movement of capital, goods, services, technologies, both within individual countries, and between the International Scale.
- The second is the multi functionality of the Internet. The constant updating of resources, tools, computer technologies on the Internet leads to the promise and provides a universal character of this network. The advantage of the Internet is that it reliably provides not only individual commercial transactions, but communication in all stages of the commercial process.
- The third one is availability and efficiency of electronic commerce. E-commerce is available for a wide range of market entities in the technical, technical,

financial and economic fields. In addition, this kind of cooperation can be highly effective and also cost-effective.

A number of researchers argue that the use of e-commerce methods can become a driver of growth for the company and help overcome the periods of crisis. Akopova and Popkova (2013) consider the need for innovation as the main source of enterprise development under adverse economic conditions. The authors assess the current situation of the world trade markets through the analysis of WTO statistical indicators and on the basis of this data make a conclusion about the relevance and competitiveness of e-business (Akopova and Popkova, 2013). Modern economic conditions, according to the authors, contribute to an increase in the number of stagnant enterprises and a catalyst for growth in this case could be entering the e-commerce market and implementing an online sales and marketing cycle (Akopova and Popkova, 2013). The result of the economic growth of enterprises in the current conditions of economic instability directly depends on the improvement of their infrastructure based on the operation of enterprises in the online sphere with the use of advanced e-commerce tools, which so quickly reached its popularity during the inevitable spread of broadband Internet access.

According to Akopova and Popkova (2013), the growing trend in the popularization of e-commerce has most actively manifested itself during the global financial crisis, as evidenced by the indicators of the world turnover of transactions in the e-commerce system. According to a study by Akopova and Popkova (2013), conducted on the basis of 52 countries, accounting for a total of 93% of world GDP, the use of electronic transactions in the period from 2008 to 2012, contributed to an increase in consumption and GDP of \$ 1.1 trillion. In addition, the intensification of the use of electronic

payment instruments contributed to an additional increase in the GDP of the countries surveyed by an average of 0.17% per year for five years. (Akopova and Popkova, 2013). During this period, their GDP grew by an average of 1.8 percentage points (Akopova and Popkova, 2013).

The sociological indicators of the market structure of electronic entrepreneurship also largely confirm the tendency of this business structure to the progressive expansion of its functioning and the painless overcoming of the negative consequences of the global crisis by the system. Thus, the dynamics of the number of Internet users in the world demonstrate the unshakable growth of new members of the Internet space, stating the fact of the ongoing activation of the global system in question as a tool for implementing non-traditional business solutions. The total number of Internet users in the world on June 30, 2012 amounted to 2.4 billion people, two of which are large in Asia and Europe (1,076.7 and 518.5 million respectively). ([www.internetworldstats.com](http://www.internetworldstats.com)).

Chen Jian (2012) examines B2B and B2C in e-commerce, the strategies of leading American and Chinese online retailers, and how these strategies have helped them survive the crisis, proving the importance of accessing the Internet. At the same time, she also comes to the conclusion that the application of successful e-commerce strategies in one country does not guarantee the same result in the economic and socio-cultural conditions of another state (Jian, 2012).

Steve Burt and Leigh Sparks (2003) tried to analyze the importance of e-commerce in the current market. They argue that e-commerce, in contrast to the retailer sales, is not based on production potential, but on transaction opportunities for doing business on

the Internet. Therefore, e-commerce deals not with real goods, but with information about these goods and related transactions. Vendors, intermediaries and buyers in the virtual environment of the Internet benefit not from sales of goods, but from the provision of information services related to the conclusion of such transactions. This is the fundamental difference between e-commerce and retail selling.

Burt and Sparks (2003) conclude that e-commerce can very effectively complement traditional trade and take competing places on the market. The competitiveness of e-commerce market participants directly depends on the degree of their awareness. Therefore, a reduction in the imbalance between the actual and potential capabilities of information communications has led to the emergence and accelerated development of e-commerce.

Also the authors paid their attention to the rapid growth of e-commerce in the UK and how the needs of consumers vary (Burt and Sparks, 2003). Authors refer to the Dawson (2001) who identified the main characteristics of the new commerce such as the following:

- 1) New commerce companies operate through multiple marketing channels.
- 2) Channel structures in new commerce are intermediated in new ways.
- 3) New commerce retailers operate internationally.
- 4) New commerce uses new forms of nonprice competition.
- 5) In new commerce, organisational scale and scope economies become more important than establishment scale and scope economies.
- 6) New commerce companies do not subscribe to a traditional view of a difference between goods and services.

- 7) New commerce companies are using the convergence of information and communications technologies as a primary source of innovation.
- 8) New managerial ideas support innovation processes.
- 9) Customer loyalty is a central concept in new commerce.
- 10) Public sector policies relate to old commerce but not new commerce.

The authors conclude that the largest retailers are moving partly to the online market and thereby reducing operating costs, which will help to strengthen their place in the market, as well as the consumer's reaction will play a major role in the construction of e-commerce (Burt and Sparks, 2003). One of the main advantage for online retailers is the reduction in operating costs. The classic of the neo institutional theory North (1997) writes that transaction costs are an integral part of production costs. He distinguishes two types of production costs (North, 1997):

- 1) Transformation costs associated with changes in the physical properties of material objects;
- 2) Transaction costs associated with the transfer of ownership of goods.

In the traditional economy, this circumstance is explained by the fact that the supplies are controlled by the producers, which are an integral part of the traditional distribution channels. However, e-commerce is not the economy of material production, but the economy of virtual communications (Kelly, 1998). Therefore, electronic commerce is not at all connected with the physical transformation of material objects in the production process. Moreover, it is by no means always connected with the transfer of property rights. For example, in drop shipping there is no real transfer of property

rights, because drop shippers operate in transactions with suppliers and buyers not belonging to them values.

Participants in e-commerce do not produce tangible products. Their sphere of activity is the "production" of intangible information services. Transaction costs here cannot be part of production costs in the sense in which North (1993) wrote about them. In e-commerce, we are dealing with the provision of services not directly related to either the manufacturer or the consumer. The end product is information capabilities based on the use of Internet technologies and expressed in saving the forces, money and time of customers.

In the conditions of unlimited communication and information opportunities of electronic commerce in the competitive struggle, one who wins faster, and with lower costs accepts, processes and executes orders received. This need not necessarily be related to the processing of data on the Internet and the provision of purely information services. This can be, for example, the provision of related transport logistics services associated with the delivery of goods to customers. Terms of supply (price, terms, responsibility, etc.) are the same in all forms of commerce.

The involvement of an electronic reseller for the processing of orders implies almost instantaneous reception, payment and interactive control of performance. The coverage of a potential audience increases many times, operations are automatized and the complexity of processing orders is drastically reduced. As a result, rapid flourishing is experienced both by Internet services that provide services to transport companies, and transport companies themselves. Kumar (2006) tried to find the main reasons for the reduction in operating expenses:

1. Significant reduction in the cost of maintaining the store. Of course, there are additional costs, but it is not as large as the costs of maintaining a commercial hall and renting a room. In the conditions of a normally functioning "electronic copy" of a store, the dimensions of the trading floor can be significantly reduced or abandoned altogether. Warehouse structures along with premises and staff are still necessary, but the urgency of the problem of territorial attachment of the warehouse to the store is largely lost.

2. Reduction of staff costs. Despite the relatively higher qualifications (and salary level) of the employee of such a store, the savings can still be very significant for two reasons: automation of the product selection process and simultaneous processing of several transactions, as well as a much more evenly distributed load distribution for employees.

3. Reduction of transportation and other overhead costs. In conditions of the possibility of flexible scheduling of the regime and routes of delivery of goods from the seller there is a choice: either to significantly reduce their transportation costs, or to increase the competitiveness of their goods by making the delivery free of charge. As for other overhead costs, it can be listed for a long time - starting with the inevitable damage to the demonstration samples of the product and ending with the reduction in the number of sets of uniforms for sellers and consultants.

4. The growth of the popularity of the store due to the concomitant "free" advertising. Of course, the organization of a virtual store is associated with significant expenses for its advertising on the network, but with the growing number of Internet users, even the fact of having a popular electronic store will already be advertising.

## 2.10 The advantages of e-commerce over retail sales

The process of institutionalizing e-commerce was inevitable, since this process is based on a sharp reduction in transaction costs, which put e-commerce out of competition (Yurasov, 2003).

Table 1: Comparative characteristics of transactions

| Product group              | Cost of sales in traditional Systems, US \$ | The cost of electronic Sales, US \$ |
|----------------------------|---------------------------------------------|-------------------------------------|
| Software                   | 15,00                                       | 0,2-0,5                             |
| Banking services           | 1,08                                        | 0,13                                |
| Flights                    | 8,0                                         | 1,0                                 |
| Billing                    | 2,22-3,32                                   | 0,65-1,1                            |
| Insurance                  | 400-700                                     | 200-350                             |
| Trading margin for food, % | 25-50                                       | 5-10                                |

Source: Yurasov A.V. (2003). E-commerce. - Moscow: The Case.

As we can see from the table, the advantage of e-commerce can be seen very clearly.

The advantage of e-commerce for enterprises is obvious. Firstly, it provides a global presence in the market, where the Internet is present, the firm can serve there. Secondly, it is important for competitiveness of the company and its products. Thirdly, this personalization of sales, that is, manufacturers can study the individual requirements of the customers and are able to meet them in a short time. Fourth, the manufacturer can quickly respond to demand, again due to personalization of sales. Fifth, the use of e-commerce significantly reduces the cost of customer service, that is, the company does not have to pay for the office or premises, no need to pay the

managers, etc. Reduction of costs, as a rule, leads to a reduction in the prices of goods or services, so it becomes profitable to buy over the Internet. Take, for example, a phone that costs three hundred or four hundred dollars more in a store than online, in addition, you will not have to go shopping in search of "your" phone for long hours from shop to shop. It is enough to open the page on the Internet, make a request for the model you are interested in and it will give you all the information about it, where to find it and for how much to pay for it. Thus, e-commerce is very beneficial for businesses, in terms of prices, sales efficiency and global distribution of information about their business Kauffman (et.al, 2010).

The advantages of e-commerce for the consumer are that, he has a huge selection of products from all the world's suppliers. To search for an interesting product, the consumer spends a minimum of time, undertakes the transaction at a convenient time, even at night, and the consumer can compare his goods with the competitors' goods and choose the most suitable one Kauffman (et.al, 2010).

Kauffman (et.al, 2010) explain the advantages of e-commerce over traditional ways of doing business in that the added value of business is created by the achievements of information technology. The authors focus on the advantages of implementing IT solutions, standardized technologies and optimizing business processes as the main factors of value creation (Kauffman, et.al, 2010). The results of the research demonstrate the global changes through which the e-commerce industry passes, which makes it possible to use highly effective and innovative methods of increasing the value of the company.

In the article the authors describe the following advantages of e-commerce as such in comparison with traditional business (Kauffman, et.al, 2010):

- Reducing the costs of sellers by: saving on renting office space and optimizing the size of storage space, saving on staff salaries (with comparable sales, the staff of the "point of electronic commerce" is two to three times smaller than the staff of a traditional store), etc (Kauffman, et.al, 2010). Accordingly, the cost of establishment of the business is lower than in traditional trade.
- Opportunities for detailed presentation of goods, advertising, promotion of goods, etc. The cost of such activities is significantly lower than in office (Kauffman, et.al, 2010).
- For the buyer, these are lower prices, possible elimination of search costs (or simply simplification of search) and, what is very important, especially for large cities buying on the internet is a huge time saving (Kauffman, et.al, 2010).
- Both the seller and the buyer are provided with specialized, structured and purposeful information about the availability of products, the nomenclature of prices, the capabilities of suppliers and alternative options for transactions (Kauffman, et.al, 2010).

In order to make the Internet a more attractive retail, space from the consumer's point of view, the IT trade system must achieve an appropriate reduction in the operating costs of the sellers. In fact, achieved by trading web companies at the initial stage of their activities, savings due to the reduction in personnel and costs associated with the re-calculation of goods have already allowed many of them simultaneously to lower retail prices and increase the difference between them and the cost of production. There are also other aspects of buying and selling processes, for example, the possibility of

organizing the supply of goods to the consumer, optimizing the range, improving the relationships of dealers with manufacturers, whose potential, from the standpoint of increasing the economic efficiency of Internet trading, is not only exhausted, but still not really disclosed (Shahriari, 2015).

The biggest and most important advantage of e-commerce is that it allows an interested company or an individual to reach the global market. It serves the needs of both national and international markets. The business is no longer limited to geographical boundaries. With e-commerce, even small businesses can access the global market for the sale and purchase of goods and services. When doing business in this way, there are also no time constraints, because e-commerce allows you to perform transactions 24 hours a day, even on holidays and weekends, which in turn significantly increases sales and profits (Shahriari, 2015).

E-commerce removes the load of infrastructure for doing business, and thereby rises the amount of funds available for investment. On the other hand, it allows you to collect and process information related to the behavior of customers, which in turn help to develop and adopt an effective marketing and advertising strategy (Shahriari, 2015).

While it is difficult to even guess when it will begin and with what technologies the decline of e-commerce will be connected. The life cycle of institutions is determined by the life cycle of economic relations, and they can remain unchanged for a long time, although progress is undoubtedly accelerating. (Doherty, 2010). It is much more important to identify, analyze and classify in a timely manner structural changes in the economy that occur under the influence of e-commerce. Subsequently this can serve

as a basis for the development of economic growth strategies that are relevant both at the level of individual economic entities and at the level of state or municipal government. In the era of the networked economy, this kind of information determines not only the vector of institutional development, but also its competitiveness (Doherty, 2010).

## **Chapter 3**

### **RESEARCH METHODOLOGY**

#### **3.1 Aim of the study**

In this thesis, the relation between sales and e-commerce in five countries, namely China, United States, United Kingdom, Japan and Germany are analyzed. The main aims of the thesis are:

- To analyze the advantages and disadvantages of e-commerce and determine its role in world trade;
- To define the relation between e-commerce and sales in selected countries;
- Compare e-commerce with traditional trade;
- Understand how e-business functions in selected countries;
- Study the causes of the rapid growth of electronic commerce in the last decade.

#### **3.2 Sources and collection of data**

We used secondary data for our research. The data used in this study are time series data, covering the period of 2008-2015. Data was extracted from official statistical sources of each analyzed state (NBS, USAGov, SBJ, ONS, DEStatis, 2015). The variables are measured as follows:

- The dependent variable is total retail sales.
- The explanatory variables is e-commerce sales.

State statistics accumulates generalized social indicators by regions, sectors, social groups. The received data are published in the form of directories, analytical notes and reports.

The main advantage of state statistics as a secondary source is the regularity of providing data and their wide accessibility, as well as a long experience of accumulating materials, which makes it possible to compare different historical periods. Statistical indicators in most cases are already grouped, normalized and therefore quite clear.

### **3.3 Research design**

To study this particular work, data were selected that will help us fulfill our goals and objectives. We selected 5 developed countries that are world leaders in the field of electronic commerce namely as: China, The United States of America, The United Kingdom, Japan and Germany.

For the accuracy of the perception of the result, we used external sources of information for the transformation of data into one currency dollars in order to compare e-commerce sales and total retail sales in developed countries.

To confirm or deny the assertion of many authors that the future of trade is e-commerce we decided to use financial analysis as well as regressive.

The use of analysis methods helped us:

- To reveal the factors influencing its condition, to reveal the reasons of their formation;

- Identify changes in financial performance indicators and determine the reasons for the achieved state;
- To assess the quantitative and qualitative changes in the financial condition;
- To assess the position of e-commerce at a certain point in time;
- Identify trends in the state of electronic commerce and the economy as a whole;
- Provide a justification for the management decisions made in the field of electronic commerce and forecast possible financial results under a variety of options for the use of resources.

By grouping the data in this way, we were able to gain a better understanding of global trends in e-commerce.

### **3.4 Research method**

This study used the quantitative methods of research. Quantitative methods make it possible to assess the degree of influence of factors on the effective indicator, calculate the simple regression equations for their use in planning and forecast analysis, and find the optimal solution for the use of production resources.

We used the Ordinary Least Squares (OLS) statistic technique method in excel sheet to measure the relationship between total retail sales and e-commerce sales in Japan, Germany, USA, China and United Kingdom.

OLS estimators have many desirable statistical properties. The method OLS gives us the best linear unbiased estimations of the regression parameters, because the sum of the errors is to be as small as possible in calculating the straight line that best fits the data.

It first needed to use the correlation matrix to observe the relationship between the relevant variables for two reasons:

- Are the variables used in the model high or low correlated?
- Can the relevant variables be modelled in such regression equations?

We also used a graphical method to make the trends of e-commerce and retail more expressive and understandable. Graphical representation of the analyzed indicators and processes can be linear, columnar, circular, volumetric, coordinate, etc. The graph regardless of the method of its construction corresponds to the economic essence and is the direction of the change of the reflected indicators.

## Chapter 4

### DATA ANALYSIS

#### 4.1 Analysis of data

The main data from which the analysis was conducted are in the Appendix A.

Table 2: Correlation and R Square coefficient for measuring the ratio of total retail sales and e-commerce

|             | United Kingdom | USA         | China       | Germany     | Japan       |
|-------------|----------------|-------------|-------------|-------------|-------------|
| Correlation | 0,909268516    | 0,960014215 | 0,956587841 | 0,866277051 | 0,843166988 |
| R Square    | 0,826769235    | 0,921627293 | 0,915060297 | 0,75043593  | 0,71093057  |

From Table 2, we can see that the correlation between the dependent variable (total retail sales) and independent variable (e-commerce sales) is positively high for all countries. The highest correlation is in USA and the lowest correlation is in Japan, but both are statistically significant. It means that there is a strong positively relationship between two variables.

If the correlation coefficient measures the severity of the linear relationship between the variables, then a linear equation is constructed in the regression analysis describing the statistical dependence of the variable y on the variable x. As a result, the analyst can predict the value of the variable y, moreover, if it is able to change the value of the variable x, he can to some extent manage the variable y. By using excel sheet I constructed the linear equation for all countries to show how will the total retail sales

change if e-commerce sales increases by one percent. Our results can found out in the Appendix B-F.

Regression equation for United Kingdom:

$$Y_{UK}=301.16+1.308x+0.24$$

These results indicate that for 1% increase in e-commerce sales will bring about a 1.308 increase in the total retail sales. R Square = 83% of the variance of variation in current retail sales is explained by e-commerce sales. Our result with  $t = 5.35$ ,  $p < 0.05$  is statistically significant.

Regression equation for USA:

$$Y_{USA}=3023.67+5.3x +0.62$$

These results indicate that for 1% increase in e-commerce sales will bring about a 5.3 increase in the total retail sales. R Square = 92% of the variance of variation in current retail sales is explained by e-commerce sales. Our result with  $t = 8.39$ ,  $p < 0.05$  is statistically significant.

Regression equation for China:

$$Y_{CHN}=1953.4+5.2x +0.64$$

These results indicate that for 1% increase in e-commerce sales will bring about a 5.2 increase in the total retail sales. R Square = 91% of the variance of variation in current retail sales is explained by e-commerce sales. Our result with  $t = 8.03$ ,  $p < 0.05$  is statistically significant.

Regression equation for Germany:

$$Y_{DEU}=432+0.5x +0.12.$$

These results indicate that for 1% increase in e-commerce sales will bring about a 0.5 increase in the total retail sales. R Square = 75% of the variance of variation in current retail sales is explained by e-commerce sales. Our result with  $t = 4.25$ ,  $p < 0.05$  is statistically significant.

Regression equation for Japan:

$$Y_{JPN}=106033+0.7x +0.24$$

These results indicate that for 1% increase in e-commerce sales will bring about a 0.7 increase in the total retail sales. R Square = 71% of the variance of variation in current retail sales is explained by e-commerce sales. Our result with  $t = 3.84$ ,  $p < 0.05$  is statistically significant.

As we can see, it is the highest index for the USA, we can predict that if 1% expect to increase in e-commerce sales, it will bring 5.3 points for total sales. And the lowest index is for Germany with 0.5, if 1% expect to increase in e-commerce sales, it will bring 0.5 points for total sales.

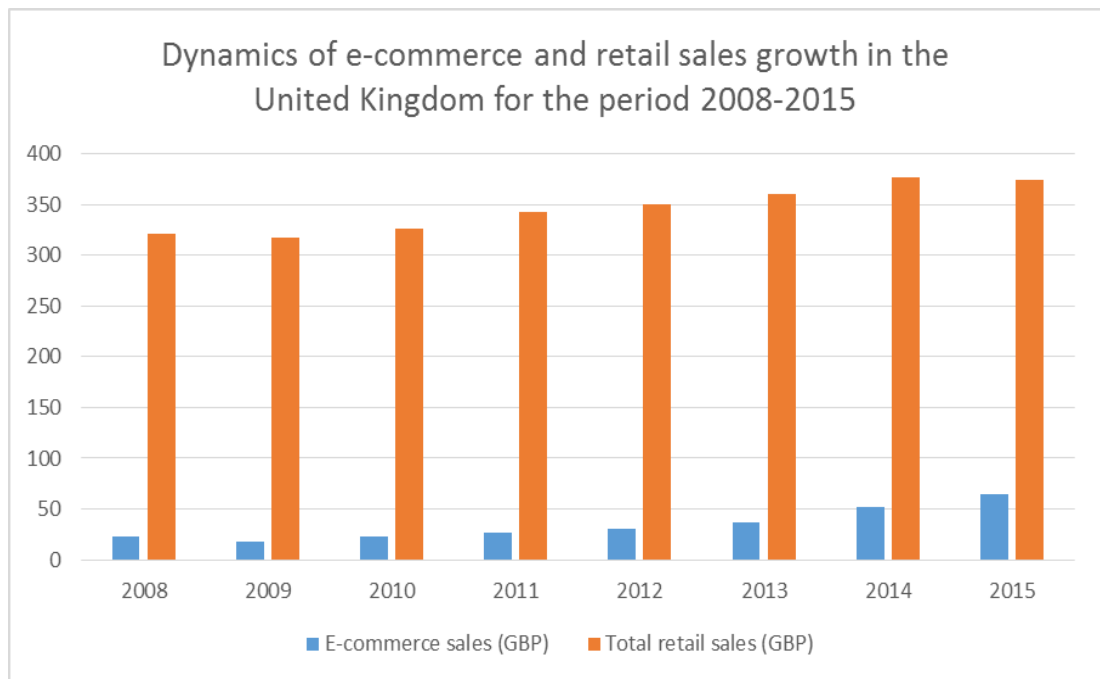


Figure 1: Dynamics of e-commerce and retail sales growth in the United Kingdom for the period 2008-2015

From the graph above, we can visually estimate that in the United Kingdom there is a rapid growth of e-commerce sales in comparison with retail sales.

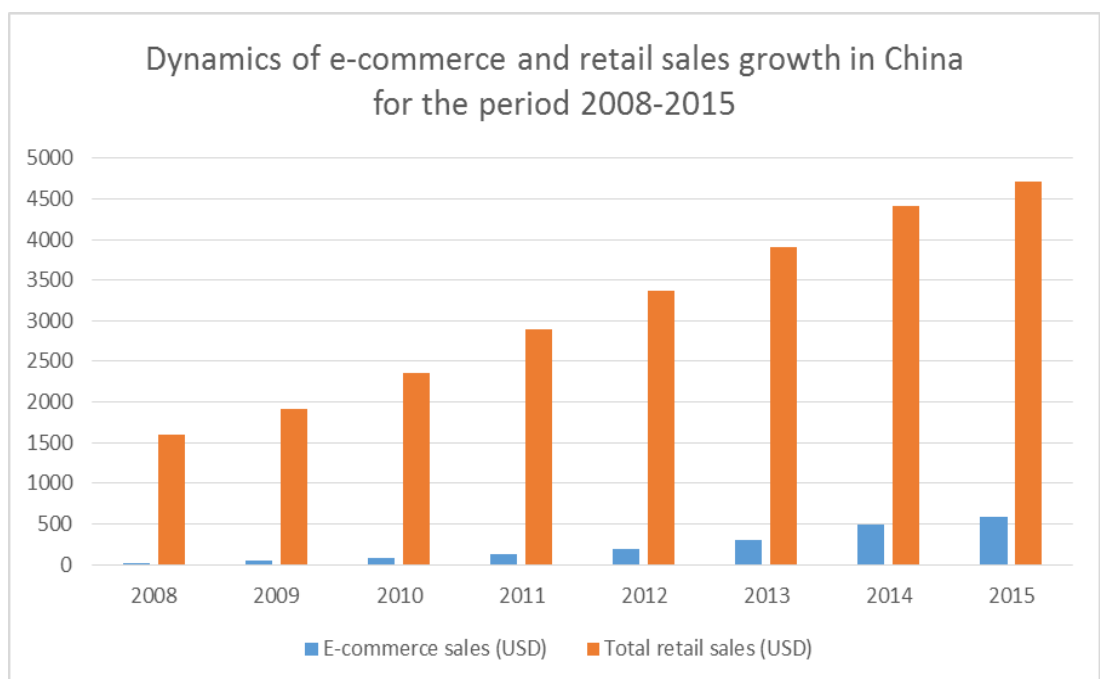


Figure 2: Dynamics of e-commerce and retail sales growth in China for the period 2008-2015

From the figure 2, at the beginning of the study period, we notice only a small part of e-commerce sales, but in 2015 we see a serious growth in electronic commerce in China.

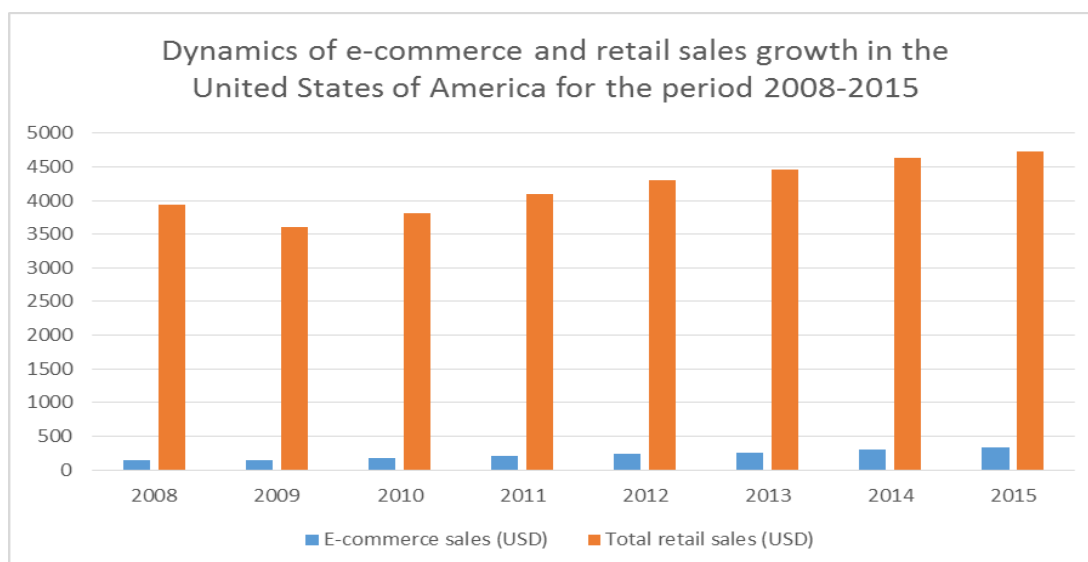


Figure 3: Dynamics of e-commerce and retail sales growth in the United States for the period 2008-2015

Findings from this figure show that there is a moderate increase in e-commerce sales while in retail we can observe some fluctuations in particular 2009 and 2010.



Figure 4: Dynamics of e-commerce and retail sales growth in Germany for the period 2008-2015

The dynamics of growth of e-commerce is very noticeable while retail is stable throughout the analyzed period in Germany.

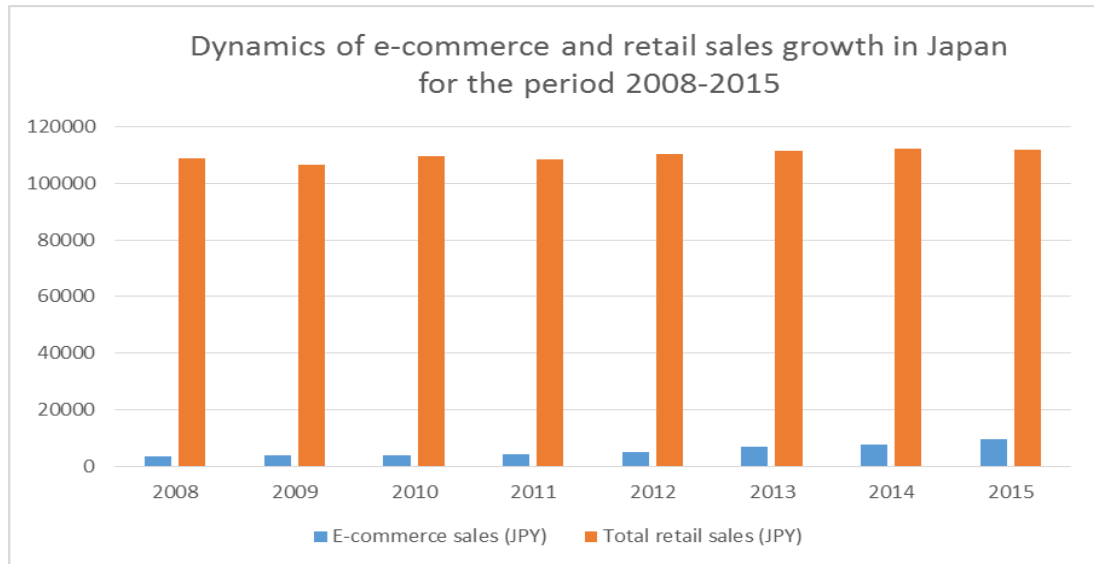


Figure 5: Dynamics of e-commerce and retail sales growth in Japan for the period 2008-2015

From the graph above, we see small fluctuations in retail while e-commerce is moderately growing and the particularly noticeable growth of recent years in Japan.

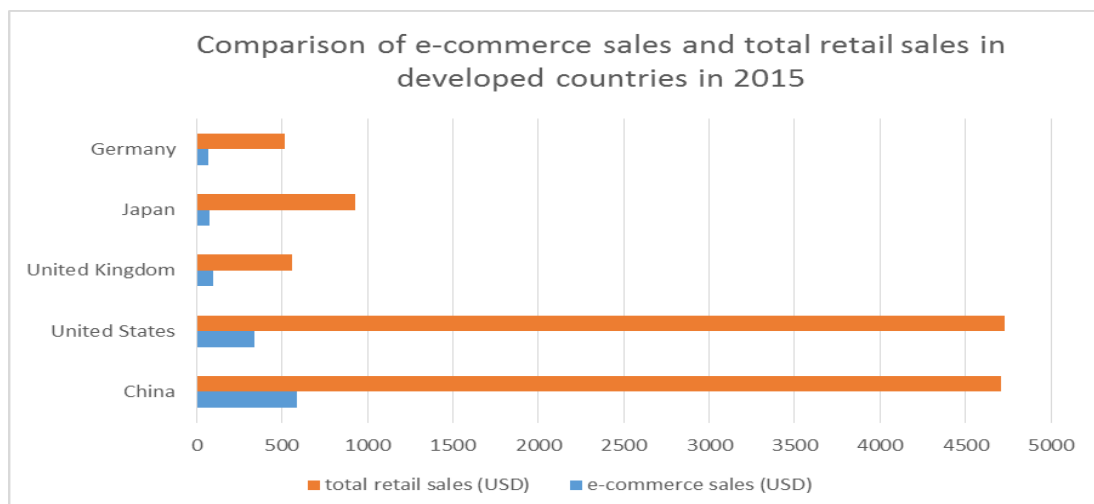


Figure 6: Comparison of e-commerce sales and total retail sales in developed countries in 2015

Comparison of e-commerce sales and total retail sales give us information about who is the world's leader in e-commerce sales as well as retail. As can be seen from the graph, China's e-commerce is ahead of all other countries with a large margin, and thus is the world leader in the field of e-commerce.

While the US is the world leader in retail, truthfully with a slight advantage from China, and given the growth rate of the Chinese economy, it can be assumed that China will also enter the retail market in a leading position. As we see, Germany is the last among such giants of the world economy, but it is considered to be one of the leading global economy.



Figure 7: Parts of retail and e-commerce sales in the United Kingdom in 2015

15% of the UK economy is e-commerce and this trend is going to grow. And this is a very influential part for the economy of the UK.

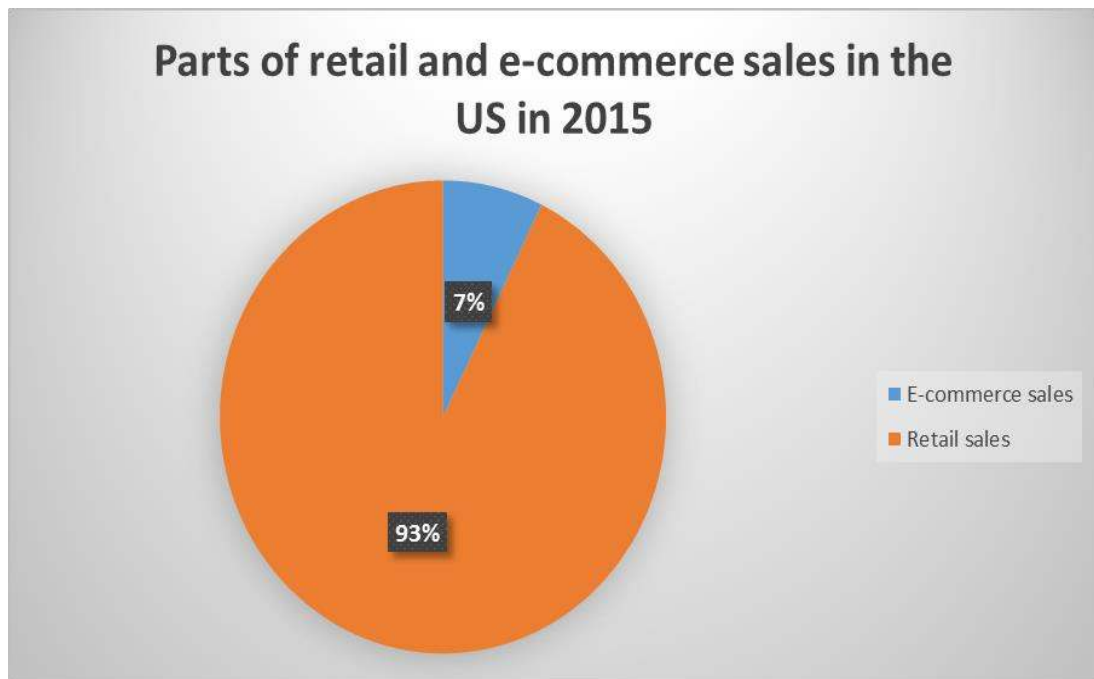


Figure 8: Parts of retail and e-commerce sales in the US in 2015

From the graph above, we can see that only 7% is the electronic commerce of the US sales and retail sales cover 93%.

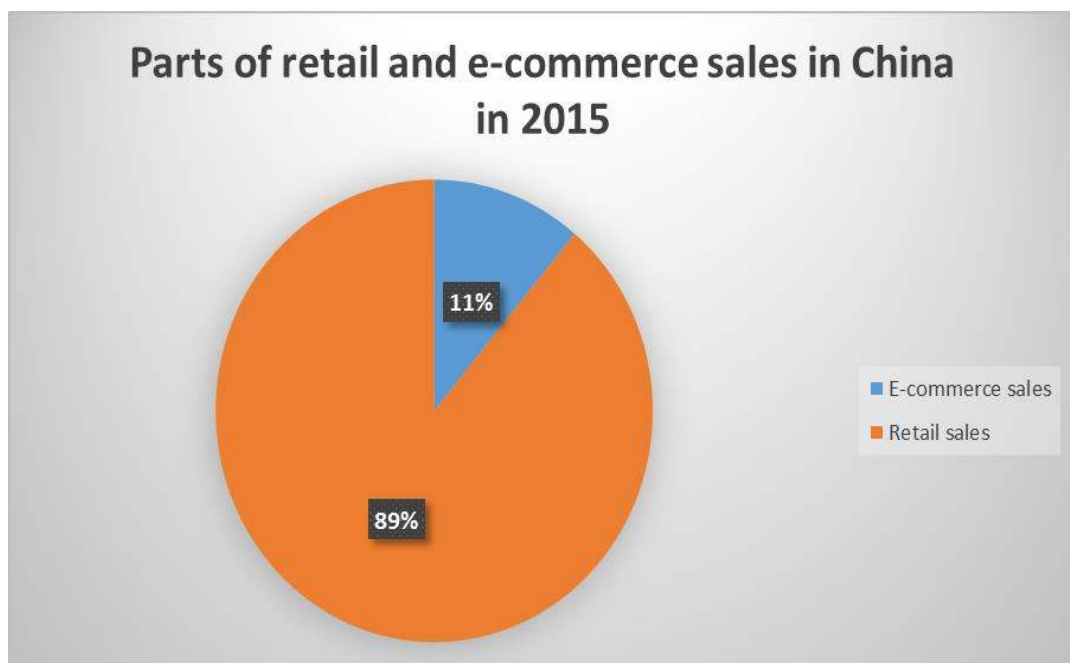


Figure 9: Parts of retail and e-commerce sales in China in 2015

Findings from this figure show that e-commerce occupies 11% of all sales in China.

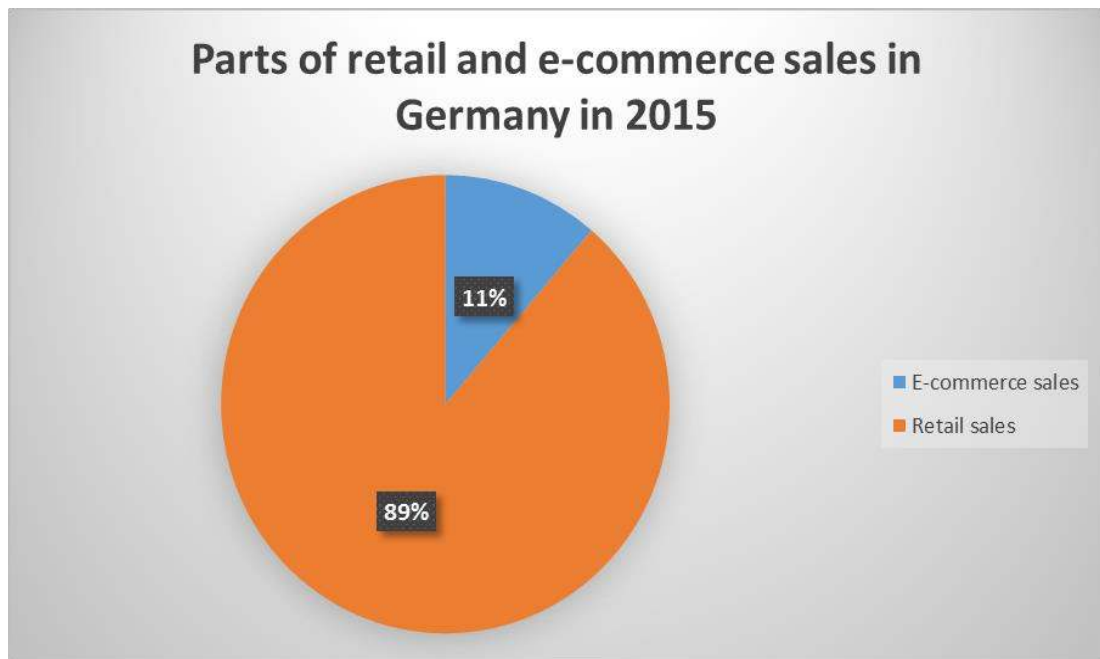


Figure 10: Parts of retail and e-commerce sales in Germany in 2015

We observe that as in the case of China, in Germany e-commerce also accounts for 11% of all sales.

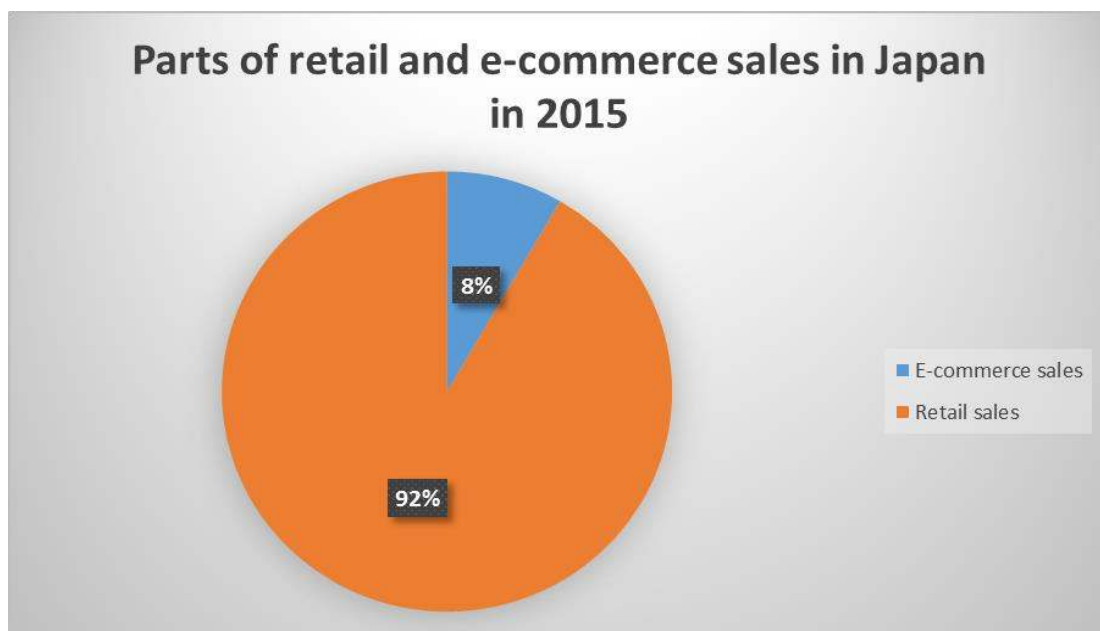


Figure 11: Parts of retail and e-commerce sales in Japan in 2015

From the figure 11, it is established that the part of e-commerce in all Japanese sales is only 8% percent.

Table 3. Analysis of e-commerce sales and total retail sales for the period 2008-2015 in the United Kingdom

| United Kingdom, £ billion | Changing  |                |           |           |            |           |           |           |           |           |            |           |           |       |
|---------------------------|-----------|----------------|-----------|-----------|------------|-----------|-----------|-----------|-----------|-----------|------------|-----------|-----------|-------|
|                           | 2008-2009 |                | 2009-2010 |           | 2010 -2011 |           | 2011-2012 |           | 2012-2013 |           | 2013 -2014 |           | 2014-2015 |       |
|                           | billi on  | %              | billi on  | %         | billio n   | %         | billio n  | %         | billio n  | %         | billio n   | %         | billi on  | %     |
| E-commerce sales          | -5        | -<br>21.7<br>% | 5         | 27.7<br>% | 4          | 17.4<br>% | 3         | 11.1<br>% | 7         | 23.3<br>% | 15         | 40.5<br>% | 13        | 25%   |
| Total retail sales        | -4        | -<br>1.2<br>%  | 9         | 2.8<br>%  | 17         | 5.2%      | 8         | 2.3%      | 9         | 2.6%      | 17         | 4.7%      | -3        | -0.8% |

From Table 3, it could be observed that majority (40.5%) of the changing were e-commerce sales between 2013-2014 while the biggest change in total retail sales were during the period 2010-2011 (5.2%). It should be noted that there was a negative trend of changes between 2008-2009 in e-commerce and total retail sales of 21.7% and 1.2 respectively this was due to the global crisis. But as we can see the growth of e-commerce is huge and this is not going to stop.

Table 4. Analysis of e-commerce sales and total retail sales for the period 2008-2015 in the United States of America

| United States of America, \$ billion | Changing  |         |           |        |            |        |           |        |           |      |            |        |           |        |
|--------------------------------------|-----------|---------|-----------|--------|------------|--------|-----------|--------|-----------|------|------------|--------|-----------|--------|
|                                      | 2008-2009 |         | 2009-2010 |        | 2010 -2011 |        | 2011-2012 |        | 2012-2013 |      | 2013 -2014 |        | 2014-2015 |        |
|                                      | billi on  | %       | billi on  | %      | billio n   | %      | billio n  | %      | billio n  | %    | billio n   | %      | billi on  | %      |
| E-commerce sales                     | 4         | 2.8 %   | 24        | 16.5 % | 30         | 17.7 % | 31        | 15.6 % | 30        | 13%  | 38         | 14.6 % | 42        | 14.1 % |
| Total retail sales                   | -323      | - 8.2 % | 206       | 5.7 %  | 284        | 7.4%   | 200       | 4.9%   | 156       | 3.6% | 181        | 4.1%   | 88        | 1.9%   |

So, calculating the indicators of changes in trade and food, we can draw the following conclusions:

- The biggest positive change in the US was in 2011, when the indicators of e-commerce sales and total retail sales increased by 30 billion (17.7%) and 284 billion (7.4%) respectively. And this confirms our previous conclusions that retail sales depend on e-commerce.
- Yes, if it take into account the quantitative indicators, then many times the retail sales exceed e-commerce sales, but in percentage terms, retail trade is inferior to electronic sales, which means that the growth of e-commerce is many times faster than retail sales in the US.

- A negative trend of change was seen in the period 2008-2009 in retail sales -323 billion \$ (8.2%), but as we can see even the global crisis did not affect the growth of electronic commerce in the US. This increased by 4 billion dollars (2.8%).

Table 5. Analysis of e-commerce sales and total retail sales for the period 2008-2015 in Germany

| Germany, €<br>billion | Changing    |               |             |           |             |           |             |           |             |      |             |           |             |           |
|-----------------------|-------------|---------------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|------|-------------|-----------|-------------|-----------|
|                       | 2008-2009   |               | 2009-2010   |           | 2010 -2011  |           | 2011-2012   |           | 2012-2013   |      | 2013 -2014  |           | 2014-2015   |           |
|                       | billi<br>on | %             | billi<br>on | %         | billio<br>n | %         | billio<br>n | %         | billio<br>n | %    | billio<br>n | %         | billi<br>on | %         |
| E-commerce<br>sales   | 2           | 14.2<br>%     | 2           | 12.5<br>% | 4           | 22.2<br>% | 14          | 63.6<br>% | 9           | 25%  | 7           | 15.5<br>% | 8           | 15.4<br>% |
| Total retail<br>sales | -13         | -<br>2.9<br>% | 7           | 1.6<br>%  | 5           | 1.13<br>% | 2           | 0.4%      | 2           | 0.4% | 6           | 1.3%      | 14          | 3%        |

In Germany, there are very low growing of retail sales figures for the analyzed period, but e-commerce sales were booming at this time, especially in the period between 2011-2012 when electronic sales grew by 63.6% (14 billion). The lowest growth indicators of electronic sales were recorded for the period between 2009-2010 which increased by only 12.5% (2 billion euro).

Table 6. Analysis of e-commerce sales and total retail sales for the period 2008-2015 in China

| China, \$<br>billion  | Changing    |           |             |           |             |           |             |           |             |           |             |           |             |           |
|-----------------------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|-------------|-----------|
|                       | 2008-2009   |           | 2009-2010   |           | 2010 -2011  |           | 2011-2012   |           | 2012-2013   |           | 2013 -2014  |           | 2014-2015   |           |
|                       | billi<br>on | %         | billi<br>on | %         | billio<br>n | %         | billio<br>n | %         | billio<br>n | %         | billio<br>n | %         | billi<br>on | %         |
| E-commerce<br>sales   | 23          | 115<br>%  | 37          | 86%       | 44          | 55%       | 69          | 55.6<br>% | 112         | 58%       | 188         | 61.6<br>% | 96          | 19.5<br>% |
| Total retail<br>sales | 316         | 19.8<br>% | 453         | 23.7<br>% | 537         | 22.7<br>% | 474         | 16.3<br>% | 524         | 15.5<br>% | 507         | 13%       | 303         | 6.9%      |

Findings from this table show that in China, the most rapid growth of both e-commerce and retail was observed. In the period 2008-2009 there was the biggest change in e-commerce, as in 2009 it increased by 115% (23 billion \$), but if we look at the quantitative indicators the biggest increase was in 2014 when it increased by 188 billion. In percentage terms the lowest indicator was fixed in 2015 e-commerce sales grew by 19.5% (96 billion \$). For the rapid growth of electronic commerce, retail trade grew at a slower pace. In 2010 retail increased by 23.7% and 453 billion, and in 2011 if it take into account the quantitative indicators retail sales increased by 537 billion dollars and 22.7%.

Table 7. Analysis of e-commerce sales and total retail sales for the period 2008-2015 in Japan

| Japan, ¥<br>billion   | Changing       |     |             |          |             |      |             |           |             |           |             |      |             |           |
|-----------------------|----------------|-----|-------------|----------|-------------|------|-------------|-----------|-------------|-----------|-------------|------|-------------|-----------|
|                       | 2008-2009      |     | 2009-2010   |          | 2010 -2011  |      | 2011-2012   |           | 2012-2013   |           | 2013 -2014  |      | 2014-2015   |           |
|                       | billi<br>on    | %   | billi<br>on | %        | billio<br>n | %    | billio<br>n | %         | billio<br>n | %         | billio<br>n | %    | billi<br>on | %         |
| E-commerce<br>sales   | 175            | 5%  | 211         | 5.7<br>% | 199         | 5.1% | 714         | 17.4<br>% | 1881        | 39.1<br>% | 1000        | 15%  | 1812        | 23.6<br>% |
| Total retail<br>sales | -<br>2,13<br>6 | -2% | 2,74<br>6   | 2.6<br>% | -<br>1,085  | -1%  | 1,988       | 1.8%      | 1,105       | 1%        | 792         | 0.7% | -449        | -0.4%     |

From the results of the table 6, we can conclude that the biggest change in e-commerce was in the period 2012-2013 when it increased by 39.1% (1881 billion ¥). The smallest growth was recorded in 2009 when it increased by only 5% (175 billion ¥). The largest increase in retail was in 2010 and it went up by 2.6% (2,746 billion ¥) and the biggest negative change occurred in 2009 when it decreased by 2% (2,136 billion ¥). As we see from the results in Japan when the growth of retail trade is almost unchanged, e-commerce is growing.

## **4.2 Interpretation of data**

From the analyzed study, it can be noted that in each of the analyzed countries there was a high growth of e-commerce sales. However, China made a very rapid step in the development of e-commerce, so in 2008 it was at the level of Germany, but in 2015, China was the world leader in e-commerce with a large margin.

It is also worth noting that 15% of the UK economy brings from e-commerce is the largest indicator among the analyzed states.

Regression analysis is the confirmation that e-commerce has an impact on the total number of sales in each analyzed state.

E-commerce is growing much more than retail sales in all the five countries analyzed.

## **Chapter 5**

# **SUMMARY, CONCLUSIONS AND RECOMMENDATIONS**

### **5.1 Summary of thesis**

Most authors were of the same opinion that e-commerce plays a big role in the foundation of the country's economy and that developing countries have the ability to succeed in creating an excellent online marketplace.

In the fourth chapter, we focused on the analysis of the comparison of e-commerce and retail trade in the five most developed countries. Our results have been subjected to the work of many authors. E-commerce really has a fast pace of development compared to retail trade and in some countries even the crisis could not affect the growth of e-commerce sales.

In the last chapter we gave a number of recommendations that our opinion will help the developed countries meet the growth of the needs of the customers but also it will be useful for developing countries not only to follow the developed countries but to try to look into the future.

### **5.2 Conclusion**

The modern age of information technologies radically changed the previous rules of doing business. This is due to the simplification of many processes due to their automation, which, on the one hand, opened new business opportunities, on the other,

forced many companies to redirect the company's resources to the sphere of studying and developing e-business. Any manifestation of technological development is associated both with the positive advantages that economic actors receive and the negative aspects that are associated with a change in the old way of life of society. At the end of the twentieth century, a completely new type of business appeared - e-commerce.

Opportunities that are associated with the advent of e-commerce, allow you to open your own business, not limited to traditional activities.

According to the finding of this research, the sales and e-commerce are significantly and positively correlating in UK, USA, China, Japan and Germany. The highest correlation is in USA and the lowest correlation is in Japan.

From the regression equations the highest index for the USA, we can predict that if 1% expect to increase in e-commerce sales, it will bring 5.3 points for total sales due to the fact that the federal authorities are clearly aware of the important role played by information technology in the development of the economy and society, large-scale investments in the private sector in the field of information technology and the development of intellectual capital. And the lowest index is for Germany with 0.5, if 1% expect to increase in e-commerce sales, it will bring 0.5 points for total sales due to the fact that German e-commerce is young and only gaining growth rate.

R Square = 92% of the variance of variation in current retail sales is explained by e-commerce sales in US. R Square = 71% of the variance of variation in current retail sales is explained by e-commerce sales in Japan.

### **5.3 Recommendations**

International trade is the basic form of international economic communication, mediates many other forms of relationships. In particular, the progress of international specialization and cooperation, international scientific cooperation is reflected in the expansion of the exchange of goods and services between countries. Despite the fact that the history of e-commerce has only about two decades of intensive and effective development (in comparison with the history of development of other branches of the economy this seems to be a short period of time), the use of modern information and communication technologies and electronic means in trade now becomes the main factor, providing a significant reduction in the trading operations costs, advertising, workflow simplification, increased mobility level and safe of electronic transactions, optimization of logistic schemes of delivery of goods and services.

Since we came to the conclusion that e-commerce is a powerful force in international trade that has not yet reached its peak, we would like to give some recommendations which can help not only to retain your positions in the market but to get ahead of your competitors and win part of the market.

1. Today, the price, convenience and fast delivery are important for the buyer. The bulk of buyers will belong to the generation, brought up on digital technologies, which are constantly online, are not used to waiting, and dictate the terms to the seller through social media.

Instant response to the order, 24/7 delivery will be the norm for the buyer. On the foreground are: proactive service, customer support and free delivery to a specific place and time. The buyer wants to receive only what he saw in advertising, and if the

seller does not provide a correspondence between the "seen" and "received", the company is waiting for failure. So our advice is the following, in order to the company has developed an effective delivery system and has constantly maintained it at a high level. This is especially true of the Chinese e-commerce market, since we have already said that Chinese online sellers cannot serve all customers in time. Competition in the online market is increasing and the main way to surpass the competitor is to increase the speed and quality of the order.

2. To expand the physical presence for online companies and online presence for retailers. Gradually, the line between online and offline stores is lower. Online stores expand their physical presence, as exemplified by Amazon and Alibaba, which open their own point of sale. At the same time, offline stores reduce the amount of physical space by switching investments in e-commerce projects.

3. Successful e-commerce sellers must switch to omni-channel sales (omni-channel). Several sales channels, coordinated among themselves, give the buyer the opportunity to make an order (in social networks, on the site, through the application, offline and so on) and receive their goods in a convenient way for him. A salesperson sees sales statistics in one place and can manage all channels at once.

4. The buyer begins to communicate directly with the brand, regardless of the entry point. The client himself chooses where, when and how he wants to buy the goods, while receiving the goods at the same price, regardless of the channel. Such a concept requires investments in information systems and logistics, otherwise the seller risks being ousted from the market.

5. Mobile devices - the key platform for digital content, this trend will only grow with time. The number of smartphones will soon reach 2 billion pieces.

With the increase in screen, the smartphone becomes a platform that can satisfy the needs of the buyer at all stages of the purchase. Consequently, sellers are forced to optimize sites for mobile devices, so as not to lose the buyer.

6. Technologies of augmented reality will become a driver for online and offline trading. Augmented reality blurs the boundaries between the virtual and the real world, as opposed to the virtual reality that plunges into the virtual world.

Thanks to this technology, sellers will help the online shopper solve the problem with fitting and significantly reduce the return of purchases.

7. It also needs to develop a good legal framework for e-commerce that would remove the borders between states and simplify the terms of use for both sellers and buyers.

#### Recommendations for Future Research:

- Researchers may to investigate the relationship between e-commerce and retail sales in developing country;
- It will be able to investigate the role of e-commerce on GDP in selected countries;
- Also researchers can describe clearly new types of e-commerce.

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## **APPENDICES**

## Appendix A: Search and analysis data

|                | United Kingdom         |                        |                          |                          | USA                    |                          |
|----------------|------------------------|------------------------|--------------------------|--------------------------|------------------------|--------------------------|
| Year\Countries | E-commerce sales (GBP) | E-commerce sales (USD) | Total retail sales (GBP) | Total retail sales (USD) | E-commerce sales (USD) | Total retail sales (USD) |
| 2008           | 23                     | 34                     | 321                      | 481                      | 141                    | 3935                     |
| 2009           | 18                     | 30                     | 317                      | 507                      | 145                    | 3612                     |
| 2010           | 23                     | 36                     | 326                      | 505                      | 169                    | 3818                     |
| 2011           | 27                     | 43                     | 343                      | 531                      | 199                    | 4102                     |
| 2012           | 30                     | 49                     | 351                      | 561                      | 230                    | 4302                     |
| 2013           | 37                     | 61                     | 360                      | 587                      | 260                    | 4458                     |
| 2014           | 52                     | 82                     | 377                      | 588                      | 298                    | 4639                     |
| 2015           | 65                     | 99                     | 374                      | 561                      | 340                    | 4727                     |
| correlation    | 0,909268516            |                        |                          |                          | 0,960014215            |                          |
| reg            | SUMMARY OUTPUT         |                        | y=301.16+1.308x          |                          | y=3023.67+5.3x         |                          |

|                | China                  |                          | Germany                |                        |                          |                          | Japan                  |                                |                          |                          |
|----------------|------------------------|--------------------------|------------------------|------------------------|--------------------------|--------------------------|------------------------|--------------------------------|--------------------------|--------------------------|
| Year\Countries | E-commerce sales (USD) | Total retail sales (USD) | E-commerce sales (USD) | E-commerce sales (EUR) | Total retail sales (USD) | Total retail sales (EUR) | E-commerce sales (USD) | E-commerce sales (billion JPY) | Total retail sales (USD) | Total retail sales (JPY) |
| 2008           | 20                     | 1595                     | 20                     | 14                     | 670                      | 447                      | 37                     | 3515                           | 1147                     | 108977                   |
| 2009           | 43                     | 1911                     | 23                     | 16                     | 585                      | 434                      | 41                     | 3690                           | 1187                     | 106841                   |
| 2010           | 80                     | 2364                     | 24                     | 18                     | 582                      | 441                      | 47                     | 3901                           | 1063                     | 109587                   |
| 2011           | 124                    | 2901                     | 29                     | 22                     | 603                      | 446                      | 50                     | 4100                           | 1373                     | 108502                   |
| 2012           | 193                    | 3375                     | 48                     | 36                     | 582                      | 448                      | 58                     | 4814                           | 1381                     | 110490                   |
| 2013           | 305                    | 3899                     | 63                     | 45                     | 600                      | 450                      | 65                     | 6695                           | 1115                     | 111595                   |
| 2014           | 493                    | 4406                     | 65                     | 52                     | 570                      | 456                      | 71                     | 7668                           | 1021                     | 112387                   |
| 2015           | 589                    | 4709                     | 67                     | 60                     | 517                      | 470                      | 79                     | 9480                           | 932                      | 111938                   |
| correlation    | 0,956588               |                          |                        | 0,866277               |                          |                          |                        | 0,843167                       |                          |                          |
| reg            | y=1953.4+5.2x          |                          | y=432+0.5x             |                        |                          |                          | y=106033+0.7x          |                                |                          |                          |

## Appendix B: Regression results for US

|                              |                     |                       |               |                |                       |                  |                    |                    |
|------------------------------|---------------------|-----------------------|---------------|----------------|-----------------------|------------------|--------------------|--------------------|
| SUMMARY OUTPUT               | United States       |                       |               |                |                       |                  |                    |                    |
|                              |                     |                       |               |                |                       |                  |                    |                    |
| <i>Regression Statistics</i> |                     |                       |               |                |                       |                  |                    |                    |
| Multiple R                   | 0,960014215         |                       |               |                |                       |                  |                    |                    |
| R Square                     | 0,921627293         |                       |               |                |                       |                  |                    |                    |
| Adjusted R Square            | 0,908565175         |                       |               |                |                       |                  |                    |                    |
| Standard Error               | 120,893836          |                       |               |                |                       |                  |                    |                    |
| Observations                 | 8                   |                       |               |                |                       |                  |                    |                    |
|                              |                     |                       |               |                |                       |                  |                    |                    |
| ANOVA                        |                     |                       |               |                |                       |                  |                    |                    |
|                              | <i>df</i>           | <i>SS</i>             | <i>MS</i>     | <i>F</i>       | <i>Significance F</i> |                  |                    |                    |
| Regression                   | 1                   | 1031216,958           | 1031216,958   | 70,55726373    | 0,000155075           |                  |                    |                    |
| Residual                     | 6                   | 87691,91744           | 14615,31957   |                |                       |                  |                    |                    |
| Total                        | 7                   | 1118908,875           |               |                |                       |                  |                    |                    |
|                              |                     |                       |               |                |                       |                  |                    |                    |
|                              | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> | <i>Lower 95%</i>      | <i>Upper 95%</i> | <i>Lower 95,0%</i> | <i>Upper 95,0%</i> |
| Intercept                    | 3023,667087         | 146,3202274           | 20,66472382   | 8,35636E-07    | 2665,634389           | 3381,69979       | 2665,634389        | 3381,699786        |
| X Variable 1                 | 5,277027666         | 0,628229761           | 8,399837125   | 0,000155075    | 3,739804819           | 6,81425051       | 3,739804819        | 6,814250512        |

## Appendix C: Regression results for China

|                              |                     |                       |               |                |                       |                  |                    |                    |
|------------------------------|---------------------|-----------------------|---------------|----------------|-----------------------|------------------|--------------------|--------------------|
| SUMMARY OUTPUT               | China               |                       |               |                |                       |                  |                    |                    |
|                              |                     |                       |               |                |                       |                  |                    |                    |
| <i>Regression Statistics</i> |                     |                       |               |                |                       |                  |                    |                    |
| Multiple R                   | 0,956587841         |                       |               |                |                       |                  |                    |                    |
| R Square                     | 0,915060297         |                       |               |                |                       |                  |                    |                    |
| Adjusted R Square            | 0,90090368          |                       |               |                |                       |                  |                    |                    |
| Standard Error               | 361,9150271         |                       |               |                |                       |                  |                    |                    |
| Observations                 | 8                   |                       |               |                |                       |                  |                    |                    |
|                              |                     |                       |               |                |                       |                  |                    |                    |
| ANOVA                        |                     |                       |               |                |                       |                  |                    |                    |
|                              | <i>df</i>           | <i>SS</i>             | <i>MS</i>     | <i>F</i>       | <i>Significance F</i> |                  |                    |                    |
| Regression                   | 1                   | 8466491,079           | 8466491,079   | 64,6383443     | 0,000197936           |                  |                    |                    |
| Residual                     | 6                   | 785894,9208           | 130982,4868   |                |                       |                  |                    |                    |
| Total                        | 7                   | 9252386               |               |                |                       |                  |                    |                    |
|                              |                     |                       |               |                |                       |                  |                    |                    |
|                              | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> | <i>Lower 95%</i>      | <i>Upper 95%</i> | <i>Lower 95,0%</i> | <i>Upper 95,0%</i> |
| Intercept                    | 1953,422221         | 195,8034534           | 9,976444168   | 5,87039E-05    | 1474,30843            | 2432,53601       | 1474,30843         | 2432,536011        |
| X Variable 1                 | 5,161138188         | 0,641948777           | 8,039797528   | 0,000197936    | 3,590346119           | 6,73193026       | 3,590346119        | 6,731930258        |

## Appendix D: Regression results for UK

|                              |                     |                       |               |                |                       |                  |                    |                    |
|------------------------------|---------------------|-----------------------|---------------|----------------|-----------------------|------------------|--------------------|--------------------|
| SUMMARY OUTPUT               | United Kingdom      |                       |               |                |                       |                  |                    |                    |
|                              |                     |                       |               |                |                       |                  |                    |                    |
| <i>Regression Statistics</i> |                     |                       |               |                |                       |                  |                    |                    |
| Multiple R                   | 0,909268516         |                       |               |                |                       |                  |                    |                    |
| R Square                     | 0,826769235         |                       |               |                |                       |                  |                    |                    |
| Adjusted R Square            | 0,797897441         |                       |               |                |                       |                  |                    |                    |
| Standard Error               | 10,53057228         |                       |               |                |                       |                  |                    |                    |
| Observations                 | 8                   |                       |               |                |                       |                  |                    |                    |
| ANOVA                        |                     |                       |               |                |                       |                  |                    |                    |
|                              | <i>df</i>           | <i>SS</i>             | <i>MS</i>     | <i>F</i>       | <i>Significance F</i> |                  |                    |                    |
| Regression                   | 1                   | 3175,517285           | 3175,517285   | 28,63588002    | 0,001742538           |                  |                    |                    |
| Residual                     | 6                   | 665,3577154           | 110,8929526   |                |                       |                  |                    |                    |
| Total                        | 7                   | 3840,875              |               |                |                       |                  |                    |                    |
|                              |                     |                       |               |                |                       |                  |                    |                    |
|                              | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> | <i>Lower 95%</i>      | <i>Upper 95%</i> | <i>Lower 95,0%</i> | <i>Upper 95,0%</i> |
| Intercept                    | 301,1598976         | 9,190618123           | 32,76818747   | 5,37324E-08    | 278,6712652           | 323,64853        | 278,6712652        | 323,64853          |
| X Variable 1                 | 1,308075706         | 0,244443004           | 5,351250323   | 0,001742538    | 0,709945221           | 1,90620619       | 0,709945221        | 1,90620619         |

## Appendix E: Regression results for Germany

|                              |                     |                       |               |                |                       |                  |                    |                    |
|------------------------------|---------------------|-----------------------|---------------|----------------|-----------------------|------------------|--------------------|--------------------|
| SUMMARY OUTPUT               | Germany             |                       |               |                |                       |                  |                    |                    |
|                              |                     |                       |               |                |                       |                  |                    |                    |
| <i>Regression Statistics</i> |                     |                       |               |                |                       |                  |                    |                    |
| Multiple R                   | 0,866277051         |                       |               |                |                       |                  |                    |                    |
| R Square                     | 0,75043593          |                       |               |                |                       |                  |                    |                    |
| Adjusted R Square            | 0,708841918         |                       |               |                |                       |                  |                    |                    |
| Standard Error               | 5,746794352         |                       |               |                |                       |                  |                    |                    |
| Observations                 | 8                   |                       |               |                |                       |                  |                    |                    |
|                              |                     |                       |               |                |                       |                  |                    |                    |
| ANOVA                        |                     |                       |               |                |                       |                  |                    |                    |
|                              | <i>df</i>           | <i>SS</i>             | <i>MS</i>     | <i>F</i>       | <i>Significance F</i> |                  |                    |                    |
| Regression                   | 1                   | 595,8461281           | 595,8461281   | 18,0419223     | 0,005394512           |                  |                    |                    |
| Residual                     | 6                   | 198,1538719           | 33,02564532   |                |                       |                  |                    |                    |
| Total                        | 7                   | 794                   |               |                |                       |                  |                    |                    |
|                              |                     |                       |               |                |                       |                  |                    |                    |
|                              | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> | <i>Lower 95%</i>      | <i>Upper 95%</i> | <i>Lower 95,0%</i> | <i>Upper 95,0%</i> |
| Intercept                    | 432,0403104         | 4,480020033           | 96,43713806   | 8,3773E-11     | 421,0780963           | 443,0025245      | 421,0780963        | 443,002525         |
| X Variable 1                 | 0,515884094         | 0,121453695           | 4,247578409   | 0,00539451     | 0,218697607           | 0,81307058       | 0,218697607        | 0,81307058         |

## Appendix F: Regression results for Japan

|                              |                     |                       |               |                |                       |                  |                    |                    |
|------------------------------|---------------------|-----------------------|---------------|----------------|-----------------------|------------------|--------------------|--------------------|
| SUMMARY OUTPUT               | Japan               |                       |               |                |                       |                  |                    |                    |
|                              |                     |                       |               |                |                       |                  |                    |                    |
| <i>Regression Statistics</i> |                     |                       |               |                |                       |                  |                    |                    |
| Multiple R                   | 0,843166988         |                       |               |                |                       |                  |                    |                    |
| R Square                     | 0,71093057          |                       |               |                |                       |                  |                    |                    |
| Adjusted R Square            | 0,662752332         |                       |               |                |                       |                  |                    |                    |
| Standard Error               | 1111,989865         |                       |               |                |                       |                  |                    |                    |
| Observations                 | 8                   |                       |               |                |                       |                  |                    |                    |
|                              |                     |                       |               |                |                       |                  |                    |                    |
| ANOVA                        |                     |                       |               |                |                       |                  |                    |                    |
|                              | <i>df</i>           | <i>SS</i>             | <i>MS</i>     | <i>F</i>       | <i>Significance F</i> |                  |                    |                    |
| Regression                   | 1                   | 18246431,12           | 18246431,12   | 14,75625917    | 0,008545115           |                  |                    |                    |
| Residual                     | 6                   | 7419128,753           | 1236521,459   |                |                       |                  |                    |                    |
| Total                        | 7                   | 25665559,88           |               |                |                       |                  |                    |                    |
|                              |                     |                       |               |                |                       |                  |                    |                    |
|                              | <i>Coefficients</i> | <i>Standard Error</i> | <i>t Stat</i> | <i>P-value</i> | <i>Lower 95%</i>      | <i>Upper 95%</i> | <i>Lower 95,0%</i> | <i>Upper 95,0%</i> |
| Intercept                    | 106033,0372         | 1114,641329           | 95,12749477   | 9,0931E-11     | 103305,6081           | 108760,466       | 103305,6081        | 108760,4663        |
| X Variable 1                 | 0,730745784         | 0,190229638           | 3,841387663   | 0,008545115    | 0,265270629           | 1,19622094       | 0,265270629        | 1,19622094         |

