Czech University of Life Sciences Prague

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Diploma Thesis

Driving forces and Barriers for e-commerce adoption in the Republic of Georgia

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Faculty of Economics and Management

DIPLOMA THESIS ASSIGNMENT

Elene Vadatchkoria

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Thesis title

Driving forces and barriers for e-commerce adoption in the Republic of Georgia

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Objectives of thesis

Main goal of the thesis is to review the literature of e-commerce in general and developing countries in particular and other related subjects, in order to develop a theoretical framework to conceptualize e-commerce driving forces and barriers, as well as to investigate practical driving forces and barriers of e-commerce in the Republic of Georgia and the impact of it's activities on the Georgian economy. Thus, develop an implementation plan for e-commerce adoption and a model to assist e-commerce adoption in Georgia and consider how it can be generalized for other developing countries.

Methodology

In order to fulfill outlined objectives, literature meta-analysis and survey questionnaire will be used as a scientific methods to gather the data.

For this research study a mixed research approach will be adopted to achieve the study's aim and objectives and to maximize the benefit of both methods. In other words, a qualitative and a quantitative research study will be conducted.

Both of these methods require data collection involving primary and secondary data collection methods.

Study would investigate the e-commerce situation in Georgia and explore what, if any, steps the country should take to adopt such technology.

Based on the synthesis of the methods and findings, conclusion of the thesis will be formulated.

The proposed extent of the thesis

60 – 80 pages

Keywords

e-commerce, Georgia, e-commerce adoption, online business, e-business

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Recommended information sources

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Declaration

I declare that I have worked on my diploma thesis titled "Driving forces and Barriers for e-commerce adoption in the Republic of Georgia" by myself and I have used only the sources mentioned at the end of the thesis. As the author of the diploma thesis, I declare that the thesis does not break copyrights of any person.

In Prague on …….

Elene Vadatchkoria

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I would like to thank my supervisor Ing. Petr Benda, Ph.D. for his support and guidance while working on this thesis. Additionally, I would like to thank my family and close friends for their encouragement and belief in me.

Driving forces and barriers for e-commerce adoption in the Republic of Georgia

Abstract

The theoretical framework has been developed in this thesis for driving forces and barriers of e-commerce adoption in developing countries such as Georgia. One of the major drivers of economic improvement is technology. Technology acceptance usually results in rapid economic growth, while rapid economic growth is accompanied by rapid structural changes. It is known by policymakers that e-commerce is a sign of economic and social transformation taking place in every country. E-commerce creates new economic and social landscapes. E-commerce enables emerging-country manufacturers to overcome the limitations of traditional businesses.

The process of topic analysis involves a diverse research approach. Firstly, semi-structured interviews were conducted involving decision-makers, government officials, managers, and general employees regarding e-commerce and economic development in Georgia. Additionally, the questionnaire was distributed to 116 Georgian Internet users.

There are many issues that effect on the adoption of e-commerce. Most results could be drivers or barriers. These issues created the theoretical framework. All issues were examined in Georgia; the theoretical and practical findings confirmed how it does effect on the maintenance of e-commerce. Furthermore, the thesis findings transferred in an improved theoretical plan by offering new problems. In addition, the literature on e-commerce drivers and barriers issues has been broadened.

Keywords: e-commerce, Georgia, e-commerce adoption, online business, e-business, Developing country.

Hnací síly a překážky při zavádění elektronického obchodu v Gruzii

Abstraktní

V této diplomové práci byl vytvořen teoretický rámec pro hnací síly a překážky při zavádění elektronického obchodování v rozvojových zemích, jako je Gruzie. Jednou z hlavních hnacích sil hospodářského zlepšení je technologie. Přijetí technologie obvykle vede k rychlému ekonomickému růstu, zatímco rychlý ekonomický růst je doprovázen rychlými strukturálními změnami. Tvůrci politik vědí, že elektronický obchod je znakem hospodářské a sociální transformace probíhající v každé zemi. Elektronický obchod vytváří nové hospodářské a sociální krajiny. Elektronický obchod umožňuje výrobcům z rozvíjejících se zemí překonat omezení tradičních podniků.

Proces tematické analýzy zahrnuje různorodý výzkumný přístup. Nejprve byly provedeny polostrukturované rozhovory, do nichž byli zapojeni činitelé s rozhodovací pravomocí, státní úředníci, vedoucí pracovníci a všeobecní zaměstnanci týkající se elektronického obchodu a hospodářského rozvoje v Gruzii. Dotazník byl navíc distribuován 150 gruzínským uživatelům internetu.

Existuje mnoho problémů, které ovlivňují přijetí elektronického obchodování. Většina výsledků by mohla být řidič nebo překážka. Tato čísla vytvořila teoretický rámec. Všechny záležitosti byly zkoumány v Gruzii; teoretická a praktická zjištění potvrzují, jak to ovlivňuje údržbu elektronického obchodu. Dále jsou závěry práce přeneseny do vylepšeného teoretického plánu tím, že nabízejí nové problémy. Kromě toho byla rozšířena literatura týkající se ovladačů elektronického obchodování a problémů s překážkami.

Klíčová slova: e-commerce, Gruzie, adopce e-commerce, online podnikání, e-business, rozvojová země.

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1 Introduction

The economic development studies are one of the current, the biggest and the most challenging parts of the wider disciplines of economics and political economies (Meier and Rauch, 2005).

Serious changes are taking place in all areas of the economy, especially in business. New terms are actively introduced into the daily vocabulary, namely e-commerce, e-business, etc., which adapts to the sustainable (continuous) development of new information and communication technologies and attracts the attention of economists and sociologists.

It is well known that the purpose of entrepreneurial activity is to make a profit, for which it is necessary to create some value for the public. The profits not only determine the feasibility of the business, but also shape the motives for new socio-economic relationships. Information technologies are becoming a vital element of the modern, new economy, and the share of this component in the costs of production is steadily increasing.

Technology and technological innovations are the main drivers of economic development. Technology and innovations are not a distinct process that evolves with economy, it is a process that countries have to continuosly and effectively promote and care (James. 1999; Todaro, 1999). Economic and social transformation are based on information, communication technologies and electronic commerce in our century and are effected on all countries around the world.

It is widely known that developing countries face the lack of evolution of their electronic economy which is caused by low rate of knowledge, level of income, insecure payment systems, no online transactions, electronic trade and some cultural barriers(UNCTAD, 2003). Accordingly, developing countries need to take into account that fixing all the issues mentioned above require big investments and inflows from Foreign Direct Investment (FDI) in order to develop infrastructure (Jenkins and Thomas, 2002; UNCTAD, 2003). There has been emerged micro- and macroeconomic challenges by revolution of electronic economy not only for governments but for organizations as well (Callioni, 2004).

Reconstructing business approach and create new business strategies, as well as apply new processes of management, implement new procedures and increasing their employee‘s

knowledge and build well-organized and secure payment systems are required in order to adopt electronic commerce by organizations(Well, 2004).

By identifying driving forces and barriers, thesis will try to explore what are the reasons of facing the problems of e-commerce adoption in developing countries, such as Republic of Georgia (World Population Review). Therefore, the research will become important so it will show what are the difficulties of using e-commerce and creates theoretical framework why e-commerce adoption is important. Moreover, a plan of action will be established in order to help developing countries in adoption of e-commerce.

2. Objectives and Methodology

Objectives

Main goal of the thesis is to review the literature of e-commerce in general and developing countries in particular and other related subjects, in order to develop a theoretical framework to conceptualize e-commerce driving forces and barriers e-commerce in the Republic of Georgia and the impact of it's activities on the Georgian economy. Thus, develop an implementation plan for e-commerce adoption and a plan to assist e-commerce adoption in Georgia and consider how it can be generalized for other developing countries.

The goal of the thesis is to find the answers for the following questions:

1. Which driving forces and barriers developing countries face when trying to adopt and maintain electronic commerce?
2. Is it possible to establish plan of action in order to assist adoption of e-commerce?
3. Can introduced plan generalized to other developing countries?

Following objectives are established for answering the above questions:

1. Conduct literature meta-analysis of economic development and e-commerce in general and developing countries such as Georgia in particular and other dependent materials.
2. Create the theoretical plan in order to classify e-commerce drivers and barriers.

3. Explore the effect of drivers and barriers of e-commerce activities in Georgia.
4. Establish adoption plan for Georgia.
5. Generalize the plan to other developing countries.

Methodology

Related data and information to the thesis topic is defined and justified in correspondence to the research questions. The outcome of the thesis topic is to determine the impact of electronic commerce use in economy of developing countries such as Georgia, where no studies or few research has been conducted around that implicates the proposed topic. Critical analysis and relevant approaches have been used in order to illustrate the research process.

In order to fulfill outlined objectives, literature meta-analysis and survey questionnaire will be used as a scientific methods to gather the data, as well as conduct interviews with stakeholders.

In order to achieve thesis goal and objectives and expand the benefit of these methods, mixed research approach will be used. In other words, a qualitative and a quantitative research study will be conducted.

These methods require data collection which includes to gather primary and secondary data.

Study would investigate the e-commerce situation in Georgia and explore what, if any, steps the country should take to adopt such technology. Based on the synthesis of the methods and findings, conclusion of the thesis will be formulated.

3 Literature Review

3.1 E-commerce

After introducing broadband in industrialized countries, internet has become very popular and its use is spreading and increasing daily and becoming domestic device which greatly simplified the access to the internet fastly and easily for everyone. Because of its extreme popularity, internet has become the major channel for business, therefore E-commerce has become an crucial part throughout the Internet community (Hamed, 2009).

Electronic commerce is a combination of technical and organizational forms that can transfer material and financial assets from one business entity to another, conducting any type of transaction and commercial activity with partners, banks, suppliers and customers using the Internet.

Typically, in e-commerce systems, there are number of stages of executing transactions: searching for the required product and service, specifying transaction details, paying, ordering, delivering raw and finished materials, etc. In terms of the company's marketing strategy, e-commerce offers such forms on the Internet as an electronic business card, which is a mainly a web page containing company's activities and information.

Electronic commerce can be classified in many different ways. One of the way is to look into the essence and see who are the players in the e-commerce transactions. Mainly, e-commerce is categorised in business-to-consumer (B2C) e-commerce, business to business (B2B) e-commerce, consumer to consumer (C2C) e-commerce, consumer to business (C2B) e-commerce.

Business to Business (B2B):

B2B E-commerce is easily explained which implies business between two companies. This is the type of e-commerce that is reflected in the relationships and activities between business firms. About 80% of e-commerce is of this type and the majority of experts believe that this type will grow faster and faster than „Business to consumer "(B2C) segment. B2B has two key elements Components: e-infrastructure and E-markets.

Business to consumer (B2C):

This model is a business relationship between businesses and consumers. B2C is the one of the most widespread and most commonly associated with online store e-shop, its direct sales to end customers. Sales in B2C is implemented mainly by web applications and virtual shops. The main domain of B2C model is to provide information about products. Using electronic catalogs or leaflets placed on the website.

Consumer to consumer (C2C):

C2C is the trade relationship between private individuals or users. This type of e-commerce is characterized by an increase in the number of online markets and online auctions, especially in the vertical area of the industry where businesses and firms can offer price to multiple suppliers according to their wishes. This may have great potential for developing new markets.

Consumer to business (C2B):

C2B Commerce platforms, when customers are the product or service providers and the business is the buyer. For example, a cleaners' platform that provides businesses with a professional service.

With the latest computerization and IT Internet technology, the future of international business for all personal or commercial investment companies involves e-commerce. Therefore, Internet has unique characteristics, among which It is notable for its hypermedia nature, interactivity, communication, trading, settlement, transaction capability and more, which greatly enhances business capabilities. It can be said that the Internet has laid the foundation for an electronic civilization. The level of information and information technologies determine the development of any country. Decisions in the fields of economy, education, defense and production, as well as decisions by the state, depend on obtaining and processing relevant information.

Modern E-commerce economy is based on two complementary process: The cost of very strong IT infrastructure and above all, the cost of internet and information services. Both of these factors lead to an increase in the number of computers and the rapid expansion of computer networks, which leads to lower fees.

E-commerce is essential for the introduction of innovations in the society, economic growth and implementation of the vision of electronic Georgia. Efficiency and effectiveness can be enhanced by optimizing electronic business services, streamlining data delivery, licensing applications to the government, improving public bidding and public procurement. Legal frameworks and standards for communication and data exchange need to be established in order to operate online commerce. There is a need to study public-private partnership models that provide universal ICT services. It is also necessary to coordinate the development of information and communication skills with the needs of the professional sector (Surmanidze 2018).

3.2 E-commerce in Developing Countries

Many developing countries has been following the strategy of developed world since the past century. They have launched their own ICT programs and took the exmaples. These strategies involve an extensive areas, such as raising awareness, creating the infrastructure, regulate the telecommunications, providing labor training and education, make changes in legislation and develop e-government. Accordingly. Increasing the awareness and understanding of real use and benefits of ICT is one of the most important starting point to start planning for developing countries. Other areas for developing countries are primary access to ICT, also low-cost hardware and software, and the use of local-language websites. However, the population of developing countries tend to shop online from foreign websites(developed countries) rather than local or regional websites because of the lack of local e-commerce contents.

E-commerce has a broader understanding in terms of forming the social changes, characterized as the globalization of markets, the shift to knowledge-based and information-based economies, and the increasing dominance of technology. In order to allow an easy transition to e-commerce, countries have to provide in social infrastructure and skills to enable population to use technology wherever it is possible, to access customers, to access users, to use environmental, cultural and global communities (Straub, 2003).

E-commerce technologies give an opportunity to enhance data and increase awareness as much as possible. With the huge potential of e-commerce networking and telecommunications, countries can create a very profitable enterprise. The ability to advertise and sell products and services online through company will be very profitable venture. With

the latest computerization and IT internet technology, the future of international business will be must to invest in e-commerce.

The development of the Internet will help fundamentally transform the business sector. In particular: the emergence of new technology companies, as well as the development of radically different business models from the traditional ones, which will enable us to expand not only the existing Internet companies, but also to start new businesses relevant to the online market.

Various countries' economy has a different approach, but one thing is clear to everyone: The Internet allows people to easily start a business and entrepreneurial activity, so it should ensure that a publicly accessible Internet space, to promote a competitive environment, which will enable any user to install a modul multi-occupancy sense the Internet Economy Benefits.

The Internet also plays an important role in the development of ICT (investment in information and communication technology) investments, with the potential of possible increase in the quality and functionality of existing ICT supplies. This creates an important environment to decrease number of main barriers to e-commerce as it combines an intangible standards based on existing communications infrastructure.

Modern information technologies have united and connected the entire planet, facilitating people's acquaintance, developing business ties, realizing scientific potential and resolving political relations between nations. It made it possible to circulate financial capital, manufacturing and labor resources, as well as information around the world in the smallest amount of time. It is information technology, first and foremost, the Internet as a global network and the unity of interconnected computers, has become the basis for globalization that has changed the lives, relationships and thus businesses of the world's peoples. The development of the Internet market and the integration of global information systems is of social and political importance for the country, as people are brought together in this way faster than in real life. A targeted audience can be formed on the Internet that can be managed. The governance aspect in the context of globalization is quite important.

Clearly, the Internet economy can play an important role in Georgia's economic development. First of all, we need to learn at what stage we are in this regard, how the Internet and related infrastructure are evolving, and set future goals and objectives.

It is important for the world to evaluate the Internet economy experience of leading countries. In this respect, China has been steadily developing over the last decades, especially the role of the innovation factor, with the main aim of the near future being to create an online economy and focus on exporting high-tech products. According to American publications, China is the world leader in online sales. The new source of its economic strength is precisely the development of digital technologies. Several decades ago, every family in China needed a special talon to get everything from rice to shoes to a bike. Today, China is the largest participant in the online market. The share of the digital economy in the modern world economy is about 25%. Europe first promoted the emergence of Internet companies and then created an e-government system. Currently, 40% of UN member states use social networks - Facebook and Twitter - in government processes (UNICAD 2019).

In Europe, Italy and Russia have become the most socially active, with users spending more than 40% of their time online. According to a survey by the Caucasus Research Resource Center, Internet users in Georgia spend most of their time on social networks. In the Big Twenty, internet commerce accounts for 4.1% of the economy. Total cash turnover reaches $ 2.3 trillion. This is more than the economy of Brazil or Italy. Such a trend is most profitable for companies such as Google, Apple, Facebook, Amazon, and others, which are mainly focused on Internet users (UNICAD 2019).

The Internet is becoming the driving force of the economy. Specifically, a report by one of the international consulting companies (McKinsey Global Institute - focused on strategic management) presents the results of the economics of the "Big Eight" countries (Canada, France, Germany, Italy, Japan, UK, US and Russia). The study also included China, India, Brazil, South Korea and Sweden (these countries account for more than 70% of world GDP). 3.4% of GDP in these countries comes from the Internet economy. Most importantly, e-commerce will enable developing country producers to gain access to low cost and minimum capital investment in new international markets, improve competitiveness and customer service, reduce transaction costs (Goldstein and O'Connor 2000).

However, the use of computers and the Internet for business development is widely understood in many developing countries, not to mention e-commerce. Being part of the global e-commerce process requires knowledge of many complex systems, including online advertising, internet technologies, international payments and shipping, which goes beyond the current limited capabilities of most businesses.

Moreover, expectations of e-commerce were unrealistically increased by media reports, along with the lack of early adoption success; Now many entrepreneurs are skeptical of its progress in developing countries. Also, it needs to mentioned that building telecommunications infrastructure is costly. In many cases, countries will need to attract foreign investment to improve their domestic infrastructure. This means that, in addition to creating a regulated telecommunications market, they must establish policies to retain a climate of appropriate investment for foreign service providers (Humphrey 2003).

Thus, The economic well-being of the population depends on how effectively the country can develop its economy and expand its export market. Since no state can live in isolation, therefore, every country seeks to integrate into the global, ie, unified economic, political, socio-cultural space. Internet economy is essential for the better future of the world. Therefore, the authorities of the countries should act in a coordinated manner, adhere to international standards, reach agreements, restrict internet interference, and create favorable conditions for the free development of the Internet economy.

3.3 E-commerce Development perspectives in Georgia

Georgia's restoration of independence was followed by two waves of economic reforms. The reforms that created the institutional foundation of the new economic system were implemented after the crisis of the first half of the 1990s. This policy, at the first stage of reform, has stimulated economic growth, which stalled in the late 1990s. The second wave of reforms launched in 2004 was aimed at market liberalization, which was, among other things, reduced by the number of taxes, permits and licenses. Despite recent reforms, the Georgian reality is still facing severe social and economic problems that can be addressed through sound state economic policies. And the development of the Internet economy can accelerate these processes. In addition, the development of the Internet economy requires the development of technologies (Surmanidze 2018).

Georgia ranks 73rd in the Global Innovation Index (GII) and 131st in the 2019 Innovation Opportunity Index (ICI). It is 44th among the countries.

Georgia ranks 59th out of 138 countries in the Global Competitiveness Index for 2016-2017, ahead of neighboring Armenia and Ukraine. Georgia holds the following positions in various criteria:

- Technological readiness index - 65th place;
- Labor Market Efficiency Index - 43rd place;
- Higher Education / Training - 89th place;
- Companies R&D Expenses - 116th.

Access to modern technologies and technological development are low. Although many measures have been taken to improve internet access in recent years, the rate of use of this tool by the population is still unsatisfactory (GII 2019).

One of the important areas of internet economy is internet / mobile banking. Modern banking can not be imagined without the internet, and its success is directly proportional to the introduction of modern technology. Most of the existing banks in Georgia have been implementing an online banking system for several years.

The development of Internet technology has enabled low-income people to find new jobs, emerging a different types of outsourcing, digital labor platforms where clients create new jobs. Outsourcing development would be impossible without the internet. (Surmanidze 2018)

Outsourcing of business processes is one of the important and demanding trends in the international market, as many international companies nowadays apply similar practices and manage their own company services in different countries. The most important reason why companies are outsourcing is to save money - the employee needs a salary, a job in the office, etc. This is usually much more expensive than the cost of outsourcing a company. Instead of creating staff and adding staff, the company prefers to delegate a specific job to a professional service company. For example this could be a cleaning company - instead of a janitor, a legal service company - a lawyer, an auditing company - an accountant, a computer service company - a computer systems and network specialist.

In outsourcing services, the company receives a team of highly professional people, not just one person. Continuous outsourcing can also be provided during outsourcing - an employee's

illness can have a bad impact on a company's performance if it has no substitute, and there is no problem with outsourcing.

The World Bank's May 17, 2016 report on the development of digital technologies in Georgia focuses on the benefits of developing digital technologies and the role these technologies play in the development of the economy. Based on the examples of developing countries, the report presents the challenges associated with technological development that hinder the digital revolution in achieving transformational potential. According to the report, the transformation of digital technology development cannot be achieved without improving the business environment, investing in citizens' health and education and good governance (Surmanidze 2018).

In the World Bank 2018 report, Georgia was also included in the context of the economic growth of developing countries. Specifically, the report includes an assessment of employment, digital engagement, e-government, e-payment system and electronic procurement system in the World Bank member countries and in Georgia.

Like Georgia, many countries have invested in digital technology, but have failed to create the right environment for technology-based development. The reason is that, in addition to investing in ICT infrastructure and IT, technology-based development requires a holistic approach and encouraging developmental areas (Surmanidze 2018).

3.4 E-governance

Since the end of 20th century, governments around the world have taken important initiatives to address the enormous potential of the Internet for the remaining purpose of improving and increasing the government process.

The development of e-government brings many benefits to citizens and businesses. The first stage of e-government development involves online access to public information. The websites of government agencies and other public electronic resources should be organized in such a way that the citizens and business owners can easily find and obtain any kind of information relevant to them (Budd and Harris 2009)

Another important area is the provision of basic services such as electronic ID card, electronic signature, online payment, or services to protect against cybercrime such as fraud, manipulation, phishing (espionage, identification), espionage, hacking, etc. (E.g., certification of trusted portals or online services, encryption mechanisms, etc.).

In addition to receiving information on the next stages of e-government development, it is possible to provide feedback on the completeness, accuracy and efficiency of this information (Budd and Harris 2009).

At this stage of e-government development, citizens are actively involved in online communication with various government initiatives and with respect to projects - good example of citizen engagement is online communication. For this purpose, public organizations often use social networks as well as web-based applications specifically for citizen relations.

The availability of electronic services enables citizens and businesses to benefit from a wide range of government services. It is important for the citizen to receive services with maximum comfort and minimal costs (Budd and Harris 2009).

In recent years, many successful projects have been implemented and high standards of service have been introduced in almost all areas. This includes well-equipped offices, a flexible information system, highly trained operators, automated queue management automation, and more.

Despite the high standard of service, one of the major challenges of the countries today is to provide citizens with electronic services. By using electronic services, the citizen is relieved of having to go to the office and stand in line. It is also important that unlike standard services, which are available only during business hours, electronic services are available 24/7.

One of the most important stakeholders in e-government is the business sector. The relationship between the state and the business sector is not limited to tax administration, licenses and permits. The government is one of the main partners who procures goods and services from the business sector. According to above, we can say that one of the most important aspects of e-government is services offered to businesses. As a result, it is very important to have a service such as online business registration. In its essence, this is a unique opportunity that opens the way for businesses to register without different types of

bureaucratic barriers that have been related to this procedure until now. Government makes possible to register a business on the internet via computer, without the hassle and unnecessary procedures (Budd and Harris 2009).

A prominent expression of the development of e-government in Georgia is the Portal MY.GOV.GE. It is a platform that integrates electronic services of the state and offers citizens in a simplified form.

The Portal is not just one website through which certain operations can be performed. Behind this platform lies the enormous hard work and technology solution that instantly connects mobile users and dozens of government agencies. This process is simple at first glance. One of the main goals of e-government is to simplify processes, but behind all this is a complex structure that simplifies everything for its citizens.

A special place on the Portal is dedicated to electronic services, which are provided by state regulations to Georgian citizens. There are dozens of services integrated into the portal and their numbers are constantly increasing.

Services for maximum user comfort are organized into categories, which include the following:

1. Municipal Services;

2. Property;

3. Social Services;

4. Permits and licenses;

5. Transport;

6. Business;

7. Taxes;

8. Penalties;

9. Miscellaneous;

10. Online Payments;

These electronic services mentioned above will save time and money for the users but in Georgia e-government still needs to increase and develop the security and availability of documents and efficient use of administrative resources.

Open governance can provide a comprehensive view of how an e-society can be formed. The goal is general: to involve citizens in all aspects of e-society development.

Open Governance emphasizes transparency, participation and collaboration, enabling citizens and businesses to engage in greater aspects of public sector work. This is an important part of the e-governance and includes raising the level of knowledge about the government, increasing trust in it, increasing use of e-services, designing and delivering e-services, and participating in policy-making. Electronic engagement is an important tool that facilitates citizen engagement in public dialogue and more open political decision-making through the use of information and communication technologies (Surmanidze 2018).

3.5 Legislation and Regulation for E-commerce

To build trust in online commerce, a basic legal framework (e-commerce regulations) is needed to regulate aspects such as identification, validity of digital contracts and digital invoices, etc. E-commerce regulations should serve to raise public awareness and ensure compliance with the regulations on the use and re-use of digital concepts and products. These regulations should help to develop areas where digital technologies require better standards for e-services. They need to improve digital interaction between business partners. Such an example might be, for example, improving accounting practices and refining standards (Zautashvili and Girgvliani 2012).

The development of the digital economy also requires clearly formulated regulations on intellectual property rights. Intellectual Property Regulations clarify the rights of ownership and the rules for the use of digital products, the copying and distribution of such products, etc. However, regulation is good to the extent that it is enforced. This means that regulations need to be properly implemented.

In addition to specific e-commerce and intellectual property rights regulations that allow digital commerce, other relevant legal frameworks are being developed and regulated by key infrastructure aspects. Examples of this are the use of electronic signatures, the provision of

ICT security and data protection; Or regulations on other key aspects of online commerce between different businesses, whether providing online services to citizens or the government. Examples of such legal frameworks are, for example, the Electronic Government Act, the Electronic Signature Act, the Information Security Act, etc.

Finally, key standards need to be developed to effectively exploit the potential of innovative technologies to ensure interoperability and smooth interactions between organizations. Consequently, there is a need to set standards regarding the exchange of data, the sending of documents and information to digital networks and the secure transmission of data. They also need to be introduced among business actors. Standards for better interaction between different businesses should be defined among business actors. Since the wealthy business sector is crucial to economic growth and job creation, the relevant policy and government agencies must work with the business sector to bring business to the highest standards and facilitate smooth online trading. Such standards alone cannot be developed by the government. Extensive cooperation between business entities is very important. Public sector assistance will help identify innovations. Nevertheless, the decisive function still rests with the entities operating in the business sector (Zautashvili and Girgvliani 2012).

The legislation on intellectual property protection in Georgia is in line with European standards, which has been confirmed in the process of negotiating a Deep and Comprehensive Free Trade Area. Completion of these negotiations should result in minor legislative amendments to the rules governing the protection of intellectual property. Consequently, intellectual property regulations and standards are well respected in Georgia. These regulations include both digital and non-digital artifacts (Surmanidze 2018).

Along with the ongoing actions of the legal component of "Promoting E-Governance in Georgia e-commerce regulations are being developed. The Compatibility Component analyzes existing data exchange standards and develops an electronic Georgia interoperability framework. A number of standards specifications have been developed for G2B and B2G interactions between the private and public sectors (Surmanidze 2018).

E-commerce regulations have made a significant contribution to creating a safer and more secure environment for online commerce. These regulations specify the validity of an electronic contract, the use of an electronic identification card and digital signature in an electronic business, as well as anti-fraud and cybercrime.

3.6 Economic Development and Technology

Visa International has published the results of its 2016 survey by 'Moody's Analyst'. The report analyzes the impact of electronic payments on the growth of the economy in 70 countries over a 4-year period (2011-2015). The results show that the growing use of electronic payments (credit, debit and prepaid cards) GDP has grown by $ 296 billion and consumer products Consumption level per year by 18%.

However, according to economists at the Moody's Analytics (2016) Center, as a result of the increase in electronic payments, an average of 2.6 million new jobs were created annually over the five years of analysis. The 70 countries surveyed made up almost 95% of global GDP (Gross Domestic Product - GDP).

With the growth of e-commerce, an average of 2.6 million new jobs were created across the 70 countries surveyed over the five-year period, with China (427,000 new jobs) and India (336,000 new jobs) the largest.

Another important area is the provision of essential services such as electronic identification card, electronic signature, online payment, or services to protect against cybercrime such as fraud, manipulation, phishing (espionage, identification), spionage, hacking, etc. (E.g., certification of trusted portals or online services, encryption mechanisms, etc.).

Technology adoption is not just what happens to economies, it is a process that countries must consciously and actively promote and enhance, and for which certain socio-economic preconditions must be met if this is a potential technological benefit.

Knowledge must be effectively attained (James, 1999). Creating new technologies requires investment. In the case of capital raising, one should use the resources that could be derived from other things to create, refine, and actually implement a productive idea (Well, 2005). James (1999) stated that the faster the technology develops and the more it is able to operate in the economy, the faster the rate of economic growth will be. Technology usually changes the factors of production output and thus influences the process of economic growth (Well, 2005).

Thirlwall (1994), same as others (Keng and Ali, 2001; Meier and Rauch, 2003; Well, 2005), believes that the greater the business technology, the more productivity and per capita

technology you can use, and so on. Moreover, if you are able to witness the quality of the products you produce, the more you will be able to spend more on your ability to receive technology, and the more wealthy you will be able to communicate, as well as on international technological tools. Internationally, you will be able to access your corporate capabilities, knowledge management resources, and even more time to stop using these ideas. Other economies have fallen behind this strategy.

Successful implementation of the technology in any country in the domestic production process requires a domestic scientific institution that can first understand, process and obtain technological knowledge of foreign production locally and secondly to recognize the potential and dangers of its own discoveries when targeting the domestic economy (James, 1999).

The speed of progress itself varies from country to country, at the stage of its development and across the complex of social and economic forces (Thirlwall, 1994).

Nafziger (2006) argues that developing economies do not have mobile and highly skilled labor, commercial farmers, large numbers of responsive entrepreneurs, a favorable business climate. Nor do they have a high level of technical knowledge, local ownership of the industry, heavy reliance on direct income taxes, large quantities of exported goods, above average livelihoods, well-developed capital markets, or high rates of savings. Therefore, Companies in developing countries need to think getting one or more alternatives for new technology that can lead to higher level productivity.

It is a fact that policy makers, enterprises and the general public that ICT is at the center of economic and social transformation affecting all countries. ICT and globalization have combined to create a new economic and social landscape.

Internet and ICT (Information and Communication Technology) have created new business models, facilitated market consolidation, business environment sustainability, digital economy creation, business and commerce, business dynamics, competitiveness and more.

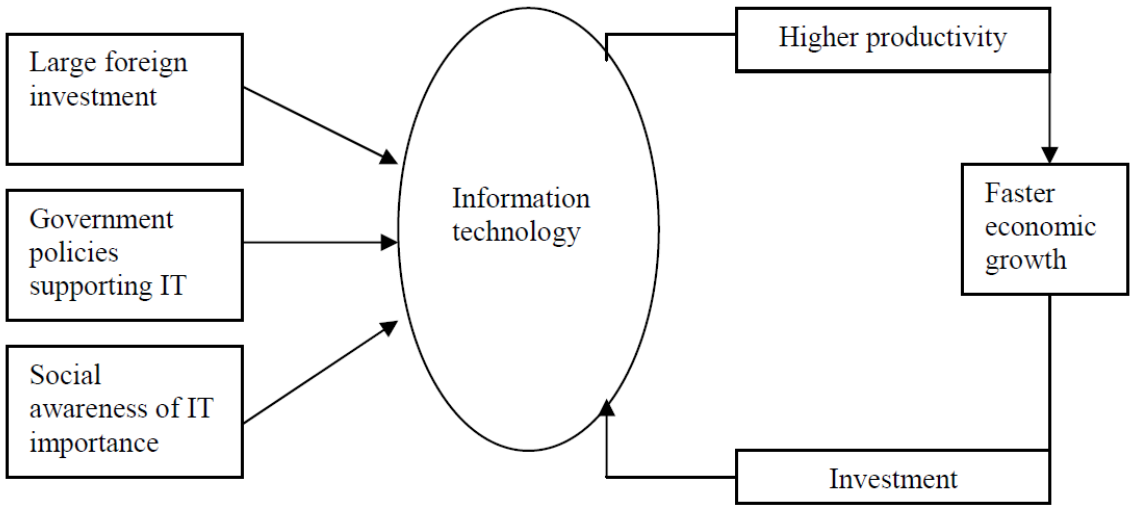
The Internet has affected all sectors of the economy and transforms existing markets. Worldwide, with unique IP address 1, 2.5 billion technology devices are connected to the Internet. Most of them are mobile phones and personal computers. Such a process is creating a new economy where Gartner (American Research and Consulting Company) predicts that

30 billion technology devices will be connected to the Internet in 2020 and generate $ 1.9 trillion.

The development of the Internet economy is accompanied by problems that many scholars study. They believe that the agility and cheapness of information products cause deformation of the price mechanism. The traditional principle of determining volume and price of production (according to production costs, costs, etc.) is changing substantially in the Internet economy as the marginal cost of producing each additional unit of production decreases. Increasing demand for products is causing prices to rise, while rising numbers of Internet users are not changing tariffs.

Kodakanchi et al., (2006) summarized the above discussion by implementing an IT-based economic development model, as shown in figure 2.1 below. They argued that rapid economic growth can be achieved using IT as a driving factor in the economic policy of the world economy. However, developing countries do not have sufficient infrastructure to support the development of IT. A major concern of IT arrivals in such countries is the inability to invest in IT due to poor financial infrastructure and insufficient human energy.

Figure 1 Economic Development based on IT
Source: Kodakanchi *et al.*, 2006



The government should promote such investments by adopting favorable foreign investment policies and by inviting many foreign companies to invest in IT. But, first of all, give people in the general awareness of the importance of IT. Kodakanchi et al., (2006) pointed out that IT literacy should be used by governments in educational institutions and many other steps can be taken to increase public awareness of IT among them.

3.7 Payment Methods

Electronic payments is a common term for systems and processes and means the transmission of data required for payment through an electronic network (Internet, universal mobile telecommunications system, etc.). These processes provide secure payments and payments to customers and suppliers.

The use of electronic payment instruments in Georgia is characterized by an increasing trend but still not satisfied. From the utilized tax instruments by customers - payment cards are most popular. It is impressive that the share of card payment transactions in total cashless payments is 29.8%, the share of internet transactions is 14.8% and the share of telephone / mobile banking is 3.1%. Also, 8.3% of payments come for credit tax payment, debit order, payment card and other means (Georgia's national communication centre). It is noteworthy that the payments made on the basis of an online bank-initiated transactions between cashless payment operations are increasing (with 31%). additionally, the number of cards issued in Georgia reached 1.9 million, which is 3 cards per 10 persons. A survey of electronic tax instruments in Georgia revealed that 47.3% of Georgian consumers prefer cash payment, 23.5% of respondents prefer internet banking / wire transfer, 11.9% of internet users prefer plastic card payment, and 10.1% of survey respondents use payment terminal. It should be noted that other forms of payment are less popular and do not exceed 4.8% according to Caucasus Business Week.

Currently, seven commercial banks operating in Georgia own international Internet payment systems licensing and serve commercial and service (including government) areas. Their electronic systems operate by Visa and MasterCard Secure Code technologies, implying three levels of card authentication (3D Secure). Also, consumers can make payments online not only through bank cards but also through electronic money. There are several electronic

money organizations in Georgia that allow its users to make payments within the client's electronic money balance online, purchase various services and products or transfer money to another user's electronic money account (Surmanidze 2018).

The general principle of the operation of systems that ansure the validity of plastic cards, goes through the number of successive stages:

- Buyer enters the site on which it is located Paid service or product for sale and which It is included in the payment card payment system.
- The buyer signs the order as a means of payment Selects a plastic card and confirms the order.
- The site redirects the buyer to the payment system Authorization site and meanwhile system server Sends your own registration information and order Number.
- The payment system site with the client creates security Receives his card details from the union and the buyer
- The payment system server addresses the system settlement bank, the bank checks the seller and transaction information. According to the results of the transaction, the transaction is either completed or denied.
- The payment system server sends it to the seller Information on the completion of the transaction (order number and other parameters) (Surmanidze 2018).

Therefore, it is important to define electronic payment standards and an affordable solution that will be integrated with the delivery of electronic services

3.8 Driving Forces and Barriers

Driver forces and barriers of Electronic commerce are different and are changing from country to country. Some of the drivers are already detected in developing countries, but some of them are not relevant yet in many others, also there are some cases when these driving forces can be identified as barriers in some developing countries. According to Hamed (2009), there can be many concerns of drivers and barriers but some of them are major in developing countries. These issues can be: cost, payment systems, infrastructure, government.

3.8.1 Cost

Cost can be seen as one of the major drivers of electronic commerce. Access to computer and mobile technology (due to high prices) is one of the obstacles to the development of the Internet economy; This driver is major aspect for e-commerce in general and especially for developing countries. Reduction of cost is one of the important factor for companies and government organziations to be Involved in international trade. E-commerce can reduce the prices of communication, export time and market goods and servicesas well as provides a chance to get low costt information and reduces the cost of managing cross-border trade supply chain (Chaffey, 2002). Reducing the cost of selling, buying and providing sellers and manufacturers with the opportunity to market their products online without the existence of a genuine store, while reducing the cost of customer service and subsequent sales services is another cost reduction caused by e-commerce adoption.

Additionally, cost in terms of hardware and software remains out of reach in cost terms for many people and organizations in developing countries (Straub, 2003). In addition, in terms of hardware and software, society and organizations in developing countries do not have access (Straub, 2003). Table 3.8.1 summarizes the cost issues that were mentioned in the literature.

Table 3.8.1 Cost Drivers and Barriers mentioned in literature

Driver	Barrier
Reduce cost	Implementation cost
Reduce communication cost	Maintenance cost
Deliver information in digital format	Shipping Cost
Reduce cost of supply chain	Cost in term of hardware and software
Reduce selling cost	Cost of internet connection and telephone charge
Reduce buying cost	Cost of implementing ICT infrastructure
Providing opportunities to sell	Delivery infrastructure
Reducing the cost of customer service and after-sales service	Increase Saving

3.8.2 Payment Systems

Payment systems are another important aspect in the adoption of e-commerce and economic development. Payment systems, as other factors, can be driver or barrier. The existence of a payment system will help developing countries do business around the world. An important detail for the success of an e-commerce is a Payment system that should be as comfortable as possible and speed up the transactions. One of the most important factors for the success of an online business is also gaining customer confidence, which is achieved by raising the quality of products and brand awareness. Payment systems is an important part of the major structure of a country's economy (Djankov et al., 2003).

In order to use e-commerce successfully in the developing country, electronic payment must be installed and ready. It accelerates payments, transfers and improves the quality of payment transfers and offers alternative institutions and better delivery channels through which customers can access banking products and services. The development of the Payment System will significantly help to strengthen the planning and monitoring of bank liquidity (Djankov, et al., 2003).

From the other point of view, developing Payment system requires big investments, which is an obstacle for many developing countries. Development also requires the assistance of central national bank cooperation with other oparating banks in the country where the action of government is very important.

Usually the old technologies are widly available in developing countries while New and automated services are strongly limited (Djankov, et al., 2003). Table 3.8.2 summarizes payment issues that were mentioned in the literature.

Table 3.8.2 Payment system Drivers and Barriers mentioned in literature

Driver	Barrier
Payment system will encourage people to do business	Adopting payment system requires large investment
Payment system will speed up transaction and other banking activities	Payment system needs co-operation between banks and participation by the central bank
Payment system provides new opportunities for online service	Social and technical factors need to be considered while adopting payment system
Payment system constitute part of the basic structure of a country's economy	In the world of Banking interest new technology in form of automatic services is strongly limited so long as the old familiar services are easily available
For e-commerce to be used, E-payment has to be installed and ready	Electronic payment activities are carried out by other companies which will result in higher charges
	Securing payment system in a country would need significant investment
	Payment in developing countries is cash or cheques

3.8.3 Infrastructure

Infrastructure relates to any ICT supplies or any other aspect that is required to develop electronic commerce. The infrastructure is weak in developing countries therefore expecting fast development of e-commerce has a low chance.

In the early stages of the Internet, the network was accessible only to highly socialized people with high levels of education, good income and rich professional experience. This was caused by the high cost of computers and the Internet, low availability, low usage abilities, limited distribution area, and more. However the problem is wider today then just a high cost. In developing countries usually government tend to support monopoly of network (monopoly or dominant firms are only players on market). It causes to limit the competition with other companies, therefore coutry has a lack of getting lower prices and quality services.

Additionally, Infrastructure in the country can attract fooreign investments and international companies to make a business.

Thus infrastructure is very important for developing countries to loan fundings, it needs new strategies, planning and management. New investments will cause the improve regulations and control infrastructure in a better way.

Table 3.8.3 Infrastructure Drivers and Barriers mentioned in literature

Driver	Barrier
The infrastructure of a country could be a main driver to attract international companies and foreign direct investors to do business in that particular country	If the infrastructure is in a poor condition then the expectation to see an improvement in the e-commerce adoption is significantly low
Infrastructure needs new strategies, planning and management	The potential for e-commerce is law because of the control of network by monopolies or dominant firms in many developing countries

3.8.4 Government

Governments play an important role in the development of the economy and are mainly the primary beneficiaries of small business and will support all investment and development in the country's infrastructure, as well as be responsible for enforcing laws and regulations in trade and ensuring the sustainability of economic growth. The use of information and communication technology for the government of any country is an opportunity for the government, economy and society. Internet technologies affect all aspects of economics. The development of the Internet economy allows people working in tourism, banking, transport, logistics, international trade, manufacturing to move forward. For the development of the economy, there is a need to strengthen the e-government, which in a way also promotes the development of e-commerce. To build trust in online commerce, a basic legal framework (e-commerce regulations) is needed to regulate aspects such as identification, validity of digital transactions and digital invoices, etc. E-commerce regulations should serve to raise public awareness and ensure compliance with digital concepts and products.

Therefore, governments need to think about adopting e-commerce and developing strategies forward. Such e-government strategies will bring significant advantages and efficiencies to citizens, other government agencies and companies. E-governance is an important factor in e-commerce as it provides services to businesses and the public. According to Daniel (2002),

procurement (one of the services of an e-government) and online exchange of a provider are services included in the G2G and G2B e-commerce. This allows for transparency in the bidding process and will allow small businesses that would not otherwise be able to bid on large government procurement projects. Also, once the country's e-government strategy has been developed, agencies, bureaucracies, and public services can focus on developing sectors that are indicator of growth.

Table 3.8.4 Government Drivers and Barriers mentioned in literature

Driver	Barrier
Government always play an important role in economic development	Government tend to support monopoly organization and limit the opportunities for private companies which could affect the adoption of e-commerce
The government is usually the main customer of small business	
Government will support all investment and improvement in a country's infrastructure	
Government is responsible for setting legislation and regulation for trade	
Government should think carefully about e-commerce adoption	
E-government strategies would provide significant advantage and efficiency	
E-government will create new jobs for other private and public organization	
E-government improving services to citizens	
Improving the productivity and efficiency of government agencies	
Strengthening the legal system and law enforcement	

3.9 Internet Technologies

All E-businesses, in order to implement their online transactions and business activities as well as the payment systems and integration with other companies within its industry, need to use a very strong technology. Internet technologies has the power to connect the business with infrastructures and technology while decreasing number of barriers and establish a new 'business global village' (Chafey, 2002). Therefore, the company must choose the right set of technologies for its business (Laudon and Laudon, 2004). Also, technology is constantly upgrading and introduces new systems and applications, therefore businesses need to keep to follow the latest trends of internet technologies.

Internet-connected computers can be conventionally divided into two categories: user computers and server computers, i.e. there is a client on one side and a server on the other.

Client or web user is any person who has any internet-connected device (computer, mobile phone, etc.). It also has a web interface with a browser such as Firefox, Chrome.

The server is a regular computer (preferably with very strong technical features), which stores the files, databases, etc. needed to operate the website. When a user opens a web page through a browser, a copy of the server-side system (of course, the only part that is accessible to everyone) is written to user's computer, and only then does the page open in the browser.

The client side covers everything that is visible to the user, including design (e.g. HTML, CSS, Javascript). The server side defines the layout of the website, in fact it is the "brain" of the website, it describes instructions for updating the page. The server side is naturally invisible to the user.

Client and customer relationships occur in a space, often referred to as the Web (WWW, World Wide Web), a web-based information system that identifies documents and various sources through URLs (URL, same Uniform Resource Locators). The URL may look like this: WWW.test.org

Let's consider the technical details of the user-server relationship, to understand the meaning and content of some of these concepts, these are:

Internet connection - allows us to exchange information with the server

IP Address - that is, an Internet Protocol address, a digital token that is defined for all Internet-connected devices. An IP address has two main functions: identifying server and network devices and identifying locations.

HTTP - Hypertext Transfer Protocol, Hypertext Transfer Protocol, Exchange Protocol, Instruction, Statute. Hypertext refers to the information that the user receives from the server or sends to the server.

DNS - Domain Name System, a computer space used to obtain information about domains. When a user searches for a site address in a browser, the browser checks the DNS for which IP address this site corresponds to, as he knows exactly where to send HTTP requests. The browser reads the DNS server and specifies the exact location and address of the website.

The browser then sends an HTTP request to the server and asks the user to send a copy of the site, exchanging this information via the Internet and the IP address of our computer or mobile phone.

If the server agrees to the user's request, its response will have a status of '200 OK', which means that everything is in order and the user can receive the appropriate response to the request. The server then sends the files to the browser to load the web page. The browser combines these files and the user opens the web page. Generally speaking, the work of a website is a kind of dialogue between the user and the server. The request is sent to the server through the page, and then the response is returned as text.

Businesses have to select the most suitable Internet technology that is in harmony with their business processes and data structures. There are different kinds of technologies and frameworks tools that can be used for different business applications:

HTML - Hypertext Markup Language is a large text with internal links to other texts, it may contain tables of images. It must be easy to read and resize (separate headings etc.). This is what HTML helps to do. With it's tags the browser makes it easy to choose where to go to a new line, where to make a new paragraph, where to create a title, and so on.

CSS (Cascading Style Sheets) - used to describe the external appearance of an HTML document, which allows us to specify the length, width, background color, location of any

HTML element. Working with CSS is quite handy as a single CSS document can control multiple HTML documents. Styles are usually defined separately in a .css file.

Javascript - created to make HTML pages more dynamic. This language was originally called LiveScript, but then, as now, it was a very popular language in Java, and marketers decided that a name similar to Java would make the language more popular. That's how the name of Javascript came from. It was intended to be a Javascript affiliate of Java but events evolved, Javascript was refined, developed and developed into an independent language. it is an interpretive programming language, so its code does not need to be compiled. It runs automatically when running on the server.

Bootstrap - framework used to work with a client-side structure that can make a website easier and faster. It includes HTML and CSS based templates, forms, buttons, tables, navigation elements, picture and can easily create responsive designs.

PHP - widely used programming language for server-side applications. PHP files can contain text, HTML, CSS, JavaScript and of course PHP code. PHP code runs on the server, and the result is returned to the browser using HTML. PHP file extension is ".php"

3.10 Questionnaire and Interview Design

As it’s known, questionnaires and interviews are cheap way to gather information from a potentially big number of respondents, and one of the comfortable and good sources of secondary data. Often, they are the only possible way to reach a number of reviewers large enough to allow statistically analysis of the results. A well-designed questionnaire that is used effectively can gather information on both the overall performance of the test system as well as information on specific components of the system. If the questionnaire includes demographic questions on the participants, they can be used to correlate performance and satisfaction with the test system among different groups of users.

It is important to remember that a questionnaire should be viewed as a multi-stage process beginning with definition of the aspects to be examined and ending with interpretation of the results. Every step needs to be designed carefully because the final results are only as good as the weakest link in the questionnaire process. Although questionnaires may be cheap to

administer compared to other data collection methods, they are every bit as expensive in terms of design time and interpretation (Hammed 2009).

The steps required to design and administer a questionnaire include:

1. ***Defining the Objectives of the survey***

Aim of this thesis is to help the developing of e-commerce in Georgia. Find out what are the requirements for adopting e-commerce and develop action plan. Also, research aims to give the information about how comfortable and profitable e-commerce and e-business is. Most of the respondents with whom conducted interview, have some knowledge about electronic commerce.

1. ***Writing the Questionnaire and interview stakeholders.***

Choose the questions which are the most important and close to topic, it helped to gain the proper information, and get the decent proposal from questionnaire flows. research has fifteen questions, and that questions are connected with each other. The circulation of questions are relative, means that question by question research gains the full image from the respondents. Considered the fact that questions should not be private ones, because to avoid the clumsy situations and negative appearance from respondents.

Additionally, researched all questionnaires about e-commerce in Georgia, and found, that all of them were business oriented and there weren't any useful, decent information what people think about e-commerce, decided to create questions, targeted for individuals.

Furthermore, Interviews has been conducted for focused groups in order to identify the problems of adopting e-commerce, from the organization employees such as IT specialists from IT department, as well as Marketing, Sales and top management.

Questionnarie has been sent approximately 150 Individuals and got answers from 116 respondents. Others didn't know about e-commerce nor didn't they feel comfortable to take a part in survey.

Interview Questions

1.Do you know the term e-commerce?
2.Does your company have a strategy for electronic commerce?
3.Which communication do you use?
4.Does your business engage in electronic commerce?
5.If you are implementing e-commerce, what is the advantages / reasons of implementing e-commerce? What is the main befit to your business?
6.If you are not implementing e-commerce, what is the disadvantages/reason of not implementing. Why you are not involved?
7.If you don't have a clear strategy for e-commerce at present, is it likely to become important in 2-3 years?
8.How many products and services does your business offer?
9.How do you deliver your products and services to consumer/client?
10.What type of payment do you accept?
11.Do you update your web if you have one, or does the third party doing for you?
12.What are the barriers of e-commerce in Georgia?
13.What are the drivers of e-commerce in Georgia?
14.What is the threat to the traditional commerce?
15.Other comments

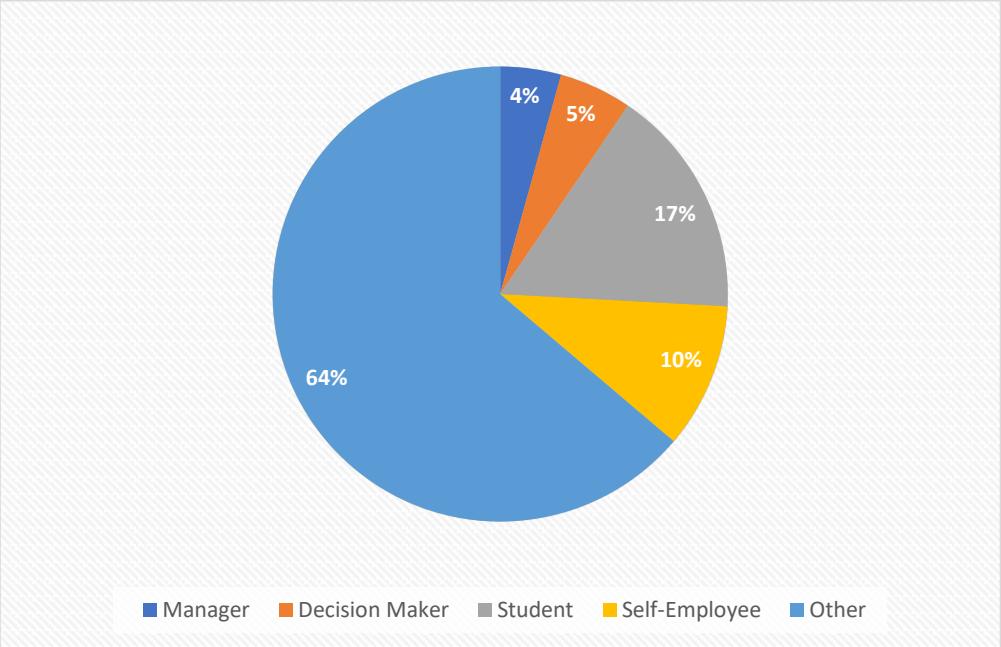
4 Practical Part

The Practical part of this thesis represents the findings of the study conducted in Georgia to identify barriers and drivers as well as the conditions and requirements of e-commerce adoption in the country. In this research the raw data has been analysed collected from survey without any transformation.

The Interviewees covered all Internet and economic development areas including decision makers, Internet users and service providers in the country.

One hundred and sixteen responses to the questionnaire were received. Respondents had different experience with different qualification and holding different positions in their companies. 83 percent of the respondents were either self-employed or employees in different sized organizations, 17 percent were university students.

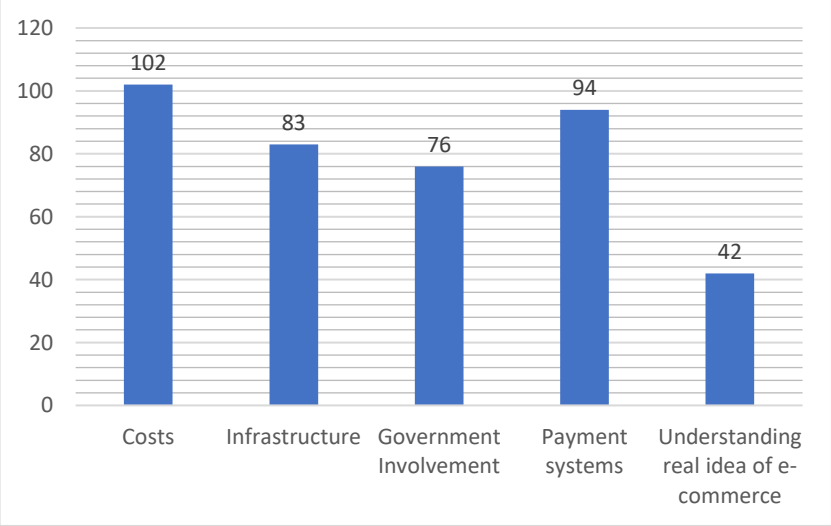
Figure 2 – Number of respondents based on position



In the section below five major factors are identified and analyzed separately with statistical illustrated diagrams.

Those major factors were identified based on level of importance of adoption of e-commerce considered by respondents. Therefore, factors were proportionally distributed on the statistical bar chart.

Figure 3 Important aspects for E-commerce adoption



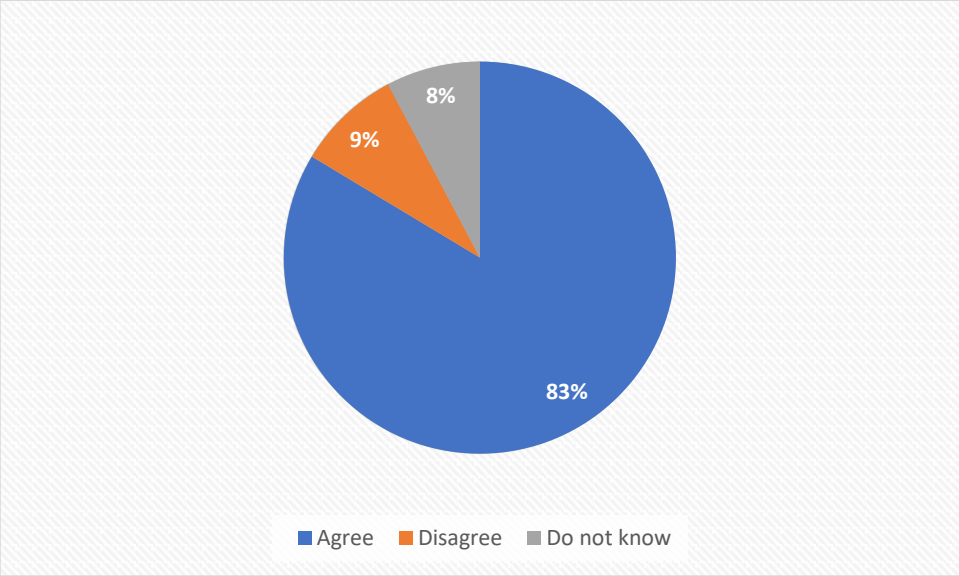
4.1 Cost

Almost all respondents and interviewees stated that cost is a major issue for e-commerce. Also, interviewees claimed that competition between service providers will drive down costs and benefit consumers.

All respondents agreed that the cost of internet connection is very high considering the average income and the quality of the internet, therefore it gas to be reduced. Almost, all answers from the questionnaire verified that the poor communication infrastructure with a high cost of Internet connection and low speed is a barrier for e-commerce use. Also, internet does not cover the whole area of the country - it is only available in big cities.

Eighty-three percent of the questionnaire respondents strongly agreed that reduced costs will helps to develop e-commerce, where only eight percent strongly disagreed with the statement.

Figure 4 – Internet cost reduction will help e-commerce development

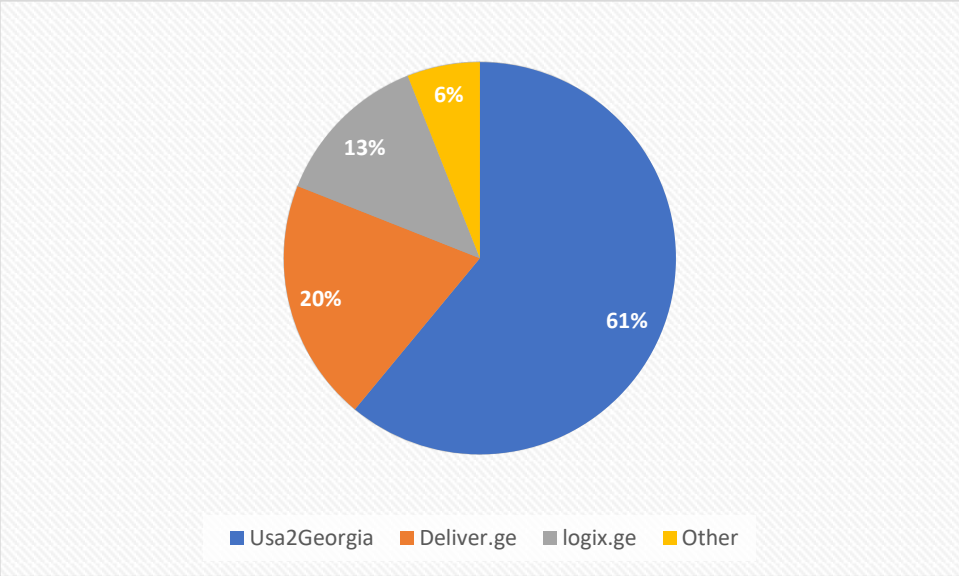


Additionally, thirty one percent of the respondents stated that in order for the Internet to be successful in Georgia, a reduction of connection costs has to be implemented.

Delivery Cost is not an issue according to Business environment. Therefore, international companies can deliver physical products to customer's premises as well as local companies. The research shows that there are two big delivery companies that Georgian population and small businesses use, these are: usa2georgia.com and deliver.ge. 61% of respondents said

that they are using usa2georgia.com and 39% said that they are using deliver.ge service. logix.ge and other delivery companies have way small share on that market. They also admitted that those delivery companies are somehow very expensive, and they will be very happy that competition will increase, and prices will decline in that business.

Figure 5 – Delivery companies in Georgia and its customers



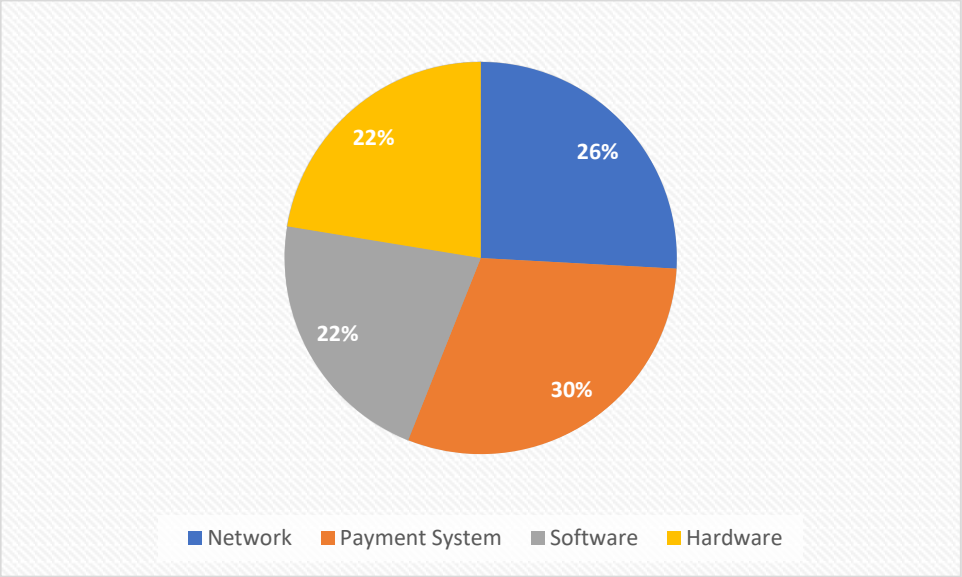
4.2 Infrastructure

All respondents from questionnaire and interviewees agreed that one of the biggest problem country is facing is infrastructure and government need to have strategie and plan to develop its communication infrastructure.

Respondents were asked what components of infrastructure they think country should develope.

Interviewees stated that Infrastructure elements for increasing the number of users and introducing innovation and future improvement in the thematic priorities of the service areas. Infrastructure such as telecommunications networks, advanced payement system and software, hardware and servers are important for development of e-commerce as well as governance of e-commerce.

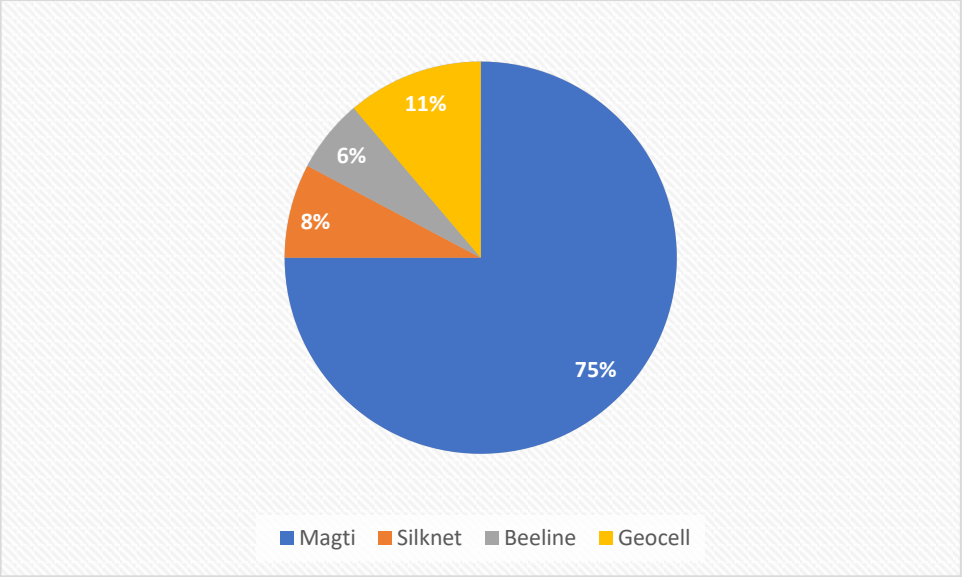
Figure 6 – Components of Infrastructure



Respondents were asked about the Internet in their organization and the type of communication used to connect to the Internet. All interviewees were connected to the

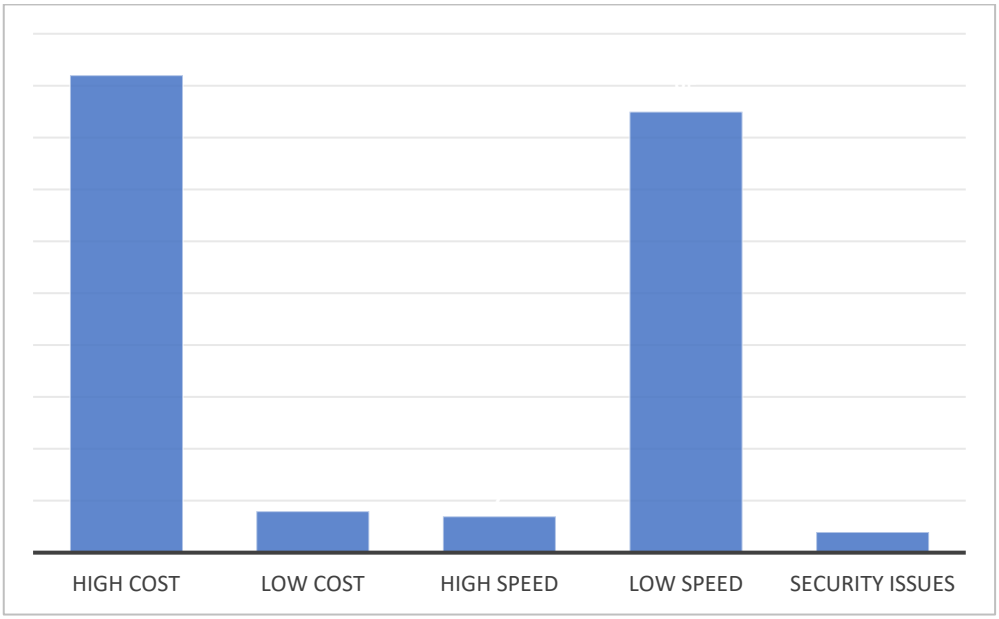
Internet using different Internet Service Providers. Most respondents were connected to the internet provider by Magti.

Figure 7 – Internet provider of respondents



Most of the respondents stated that internet has low speed and high price in Georgia. Also, the Fiber optic communication is not provided from all internet providers and is not available everywhere.

Figure 8 – Respondents answers about their Internet provider



Interviewees also stated that Georgias infrastructure is not ready for adopting e-commerce for now as it should be. Problems, that one of the inteviewee who is holding managers position, stated that internet is not covering all regions of the country, as well as the success of payment systems is relying on the ICT infrastructure, same comments has been made by IT managers and also added that for example the branches of banks can not connect to each other because of bad infrastructure. IT manager also stated that It is possible for the user to disconnect from the international internet network twice or three times a month. At that time, the telecommunications infrastructure allows Georgian users to access only Georgian websites. In general, the speed of access to Georgian sites is higher than that of foreign sites. Many factors influence this, including the underground fiber optic cable, which is often at risk of damage due to landslides that may be caused by heavy rain or ongoing road construction.

Thus, infrastructure is a major aspect, as well as barrier of adoption of e-commerce in Georgia, therefore government has to pay attention to ICT for e-commerce success in the country.

4.3 Payment Systems

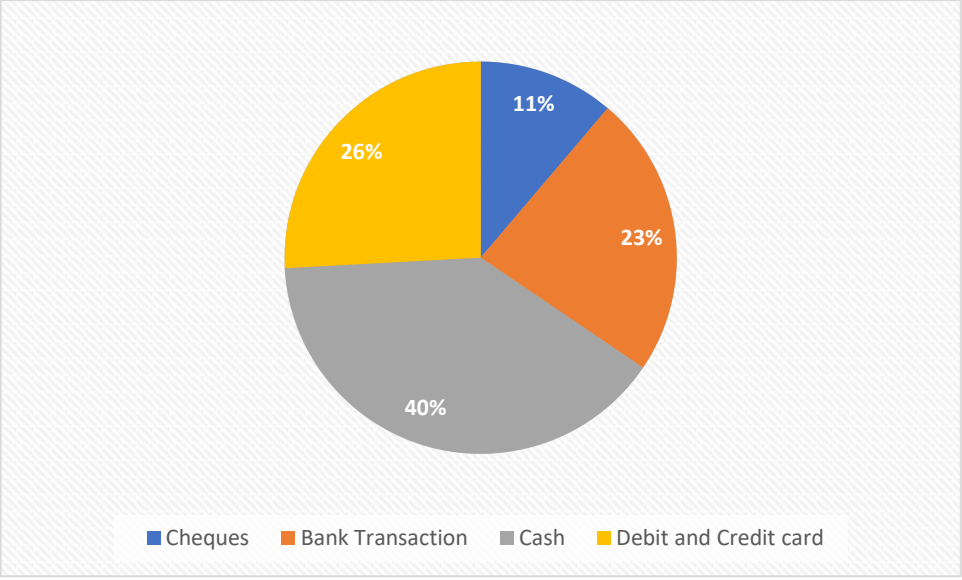
All respondents agreed that major aspect of the country's economy as well as driver of e-commerce is the payements systems.

Along with traditional payment instruments, remote banking service channels are being developed which allow users to conduct banking operations using various electronic channels. Also, good payment systems will speed up the transactions between banks and organizations and save time and money.

However, adopting payment systems requires large investment. Additionally, interviewees stated that once the system is ready to use, banks will introduce advanced Internet banking to customers.

Part of the questionnaire was what type of payment method respondents use. Questionnaire responses as well as interviewees responses show that cash payment is most popular in the country. Other common payment methods are bank transfer and debit and credit card, however respondents stated that cardpayment is not widely available for everyone.

Figure 9 – Type of Payment Methods



The one of the company's marketing manager argued that the National Payment System will be a driver for e-commerce in Georgia, also argued that a payment system will reduce the cost of employment and time of operating. Additionally, they explained that a payment system will increase the cost of securing cash.

4.4 Government

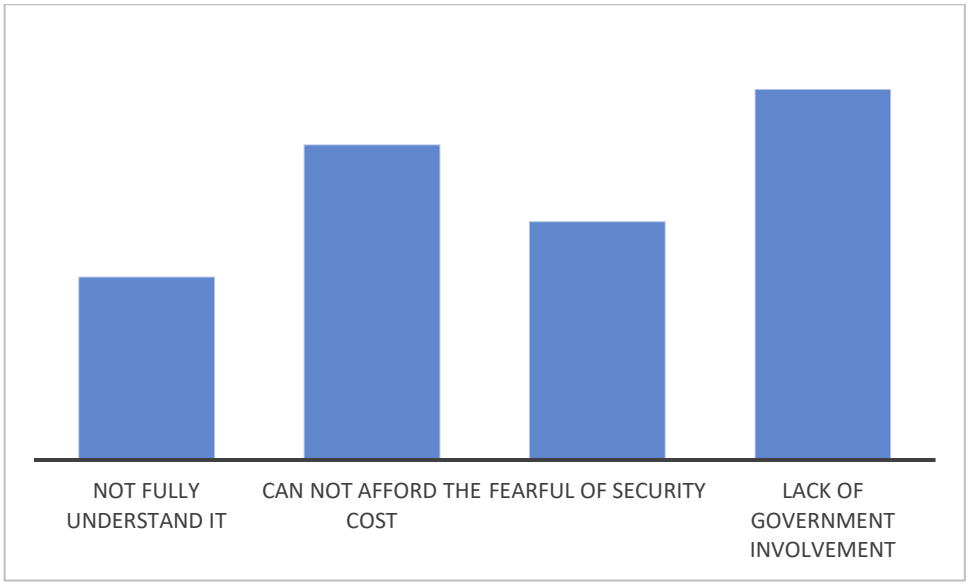
Respondents and interviewees agreed that among many barriers of e-commerce in Georgia, government has one of the main effect on it. All respondents agreed that Government is a major stakeholder and development of e-commerce depends on it.

There was also stated by the interviewees that part of the barriers has been created artificially by the government itself, such as forbid import of goods and products manufactured in certain countries or tend to support monopoly of internet provider companies and hinder the adoption of fiber-optic communication.

Also, e-commerce law and regulation is one the drivers taking place in the country. The lack of regulation has established more computer crime in Georgia. The Respondents argued that there is no legislation to control computer crime which encourages people to use pirated software.

Questionnaire respondents indicated that there is a lack of government and industry -led visibility and other government related issues for not adopting e-commerce by their organizations.

Figure 10 – Why Organization not adopting e-commerce



Interviewees admitting that all government organizations should colaborate in order to have the right infrastructure for e-commerce. Respondents stated that e-government adoption and payment systems implementation are the major drivers of e-commerce in the country. They

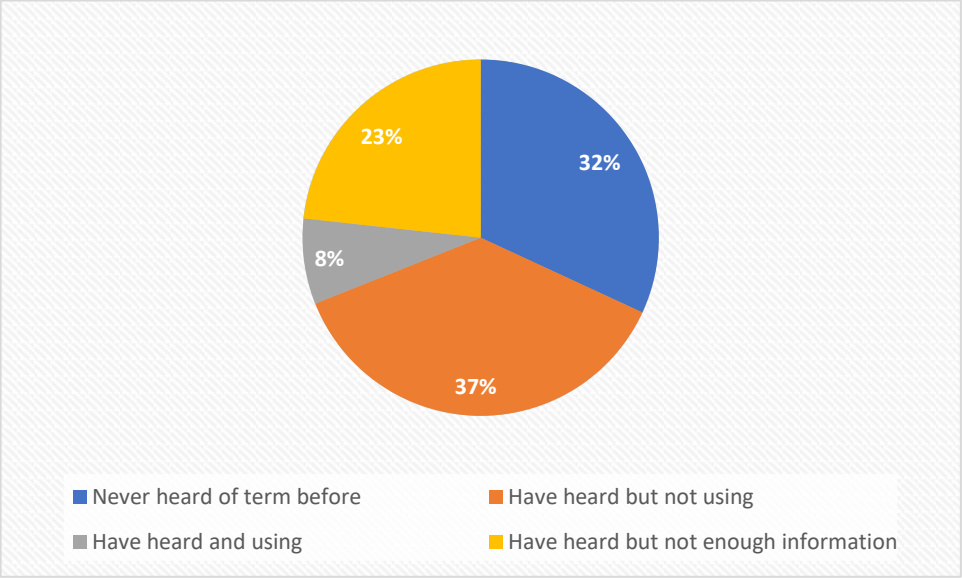
admitted that e-government applications, such as new company registration and other online services from government have already been implemented successfully and still working on developing full e-government for covering all departments and make everything visiable and easily accessible to citizens, organizations and business and centralize information. Ministries of Justice and Economy are major stakeholders who can deal with legal issues, respondents admitting that all government organizations should work together to have infrastructure for e-commerce.

4.5 Other Issues

Georgia must deal with other issues for adopting e-commerce such as Knowledge and Security.

For instance, Interviewees were asked if they had heard of the term e-commerce before. Significantly high percent of interviewees responded that they have not heard about it before.

Figure 11 – Respondents knowledge of term e-commerce



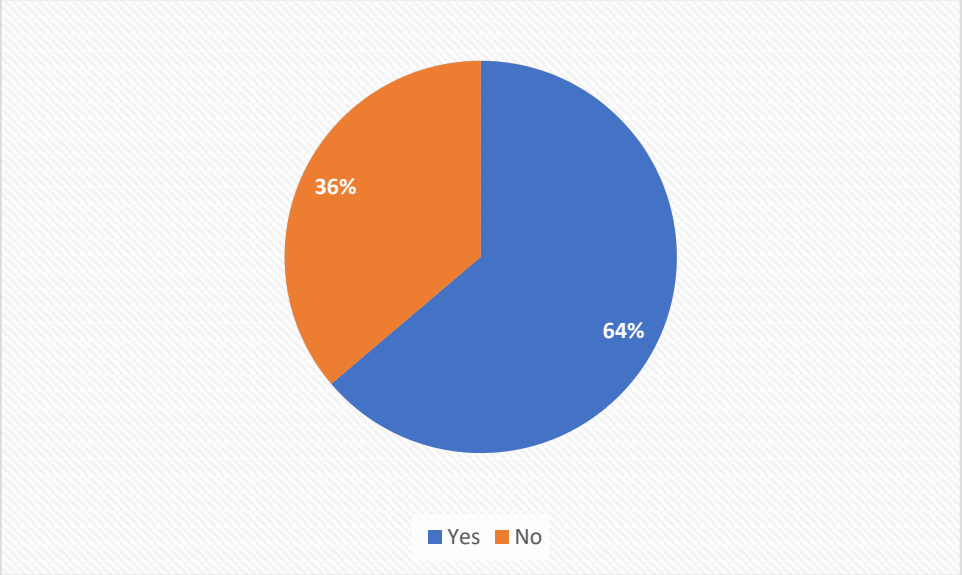
Population has to have the information what the term means in terms of commercial activities on the web including selling, buying and procurement as well; it is the future of business with less complexity as well as saving time and money.

Respondents also agreed that in order to adopt e-commerce successfully there is a need to have a resource with the enough knowledge, therefore government as well as organizations

and businesses must involve employees to learn the international standards, knowledge of electronic service and e-business ethics.

The phishing and online fraud is very high according to questionnaire respondents.

Figure 12 – Number of victims of Fraud and Phishing



Interviewees from IT department of Bank of Georgia agreed that many people do not know what phishing is, but it is a very common fraudulent method in the Georgia where many consumers lose their money. Fraudsters are creating a fake payment page with a completely identical interface to well-known online stores or internet banking and trying to mislead the user. Once a username and password has been entered on such a fake site, all data is already in the hands of fraudsters and the user is losing access to their profile. In order to protect ourselves from phishing, user needs to look at the correct sequence of letters in the browser's address field - such as amazon.com swap or say amason.com - whether or not the page looks exactly like Amazon, user should think it's a classic case of phishing.

5 Plan of action

The plan of action will try to seek the design of adoption of e-commerce in Georgia. In order to achive the successful adoption, Country should take an action and go through the stages or lifecycle represented in this chapter. These stages has to involve all actors who are

responsible in the adoption of e-commerce in Georgia. Priorities in this plan of action can be different from country to another which depends on diversity of issues. In this thesis, aspects of plan of action has been prioritized according the respondent‘s and interviewees‘ choice of the importance of each issue.

As it is mentioned above, issues have to be prioritized differently in each country according to their capabilities of implementation of plan which is driven by financial and other forces. For example, aspects of plan like ICT and security, country should attrack investments to speed up the process.

5.1 Before adoption

Before the adoption, country should focus on the following issues:

Infrastructure: Infrastructure services, such as digital interaction to promote, such as electronic identification, digital signature, online payment, secure and reliable network infrastructure, secure online delivery services, as well as Internet access for everyone and everywhere, including in the remote rural areas, etc. The mentioned basic infrastructure is required for both private and public sector entities as well.

International Trade: The goal of any country in the modern world is to foster international trade and to share experiences from different countries in order to create fair market, for buyers and sellers without any restrictions, as well as increase the share of exports, which is very important for Georgia and it is greatly facilitated by the e-commerce.

Payment systems: It is the crucial part of infrastructure for e-commerce adoption. Strong payment system must be created in order to speed up the transaction and enable the country to be involved in internation electronic commerce as well as give an opportunity to users to conduct financial transactions online. Must be specified the electronic payment standards that will be integrated into e-service offerings.

E-government: Georgia, in terms of information technology and e-government, is at a low stage of development. The country has strong human resources, but faces serious gaps in the implementation, application, delivery of citizen technology and their governance. The development of e-government does not just mean infrastructure, platform, internet

applications, websites, types of services. Citizens are interested in a system that is capable of enhancing knowledge, raising awareness, promoting employment, security, socio-economic well-being, providing services, match the needs and creating public capital.

Education and labor training: A successful economic model requires a social policy that focuses on the development of the main resource of the economy - human capital. One of the important factors in the country's development is the level of education that determines the strength of the country and economy. This will give a chance to the country to keep up to date with new technologies and best practices. In addition the research has to be cinducted related to the e-commerce before the adoption of it.

Lower taxes: By decreasing taxes will lower the barriers of adoption so that investors will encourage to trade with Georgia, therefore create new busines opportunities. Decreasing taxis also will solve the problem of high charges between countries and encourgae e-commerce users by increasing the activities related to electronic commerce as well as save the public sector and significant number of taxpayer‘s resources;

5.2 During Adoption

Once the infrastructure, payment systems and e-government has been implemented, country should move to the second part of the lifecycle of the adoption process and should fix following issues which will develop during the adoption of e-commerce.

New strategies: Implementation of the e-commerce strategy and the use of information and communication technologies will bring concrete benefits to both the population of Georgia and the enterprises of the country. As for the current situation and the goals that Georgia wants to achieve, it is recommended to transfer knowledge and international cooperation in certain areas. A strategy is valuable when all stakeholders contributes and reflects their views. Consequently, each of the organizations operating in Georgia should be motivated to contribute to strategy development and behavior.

Cyber security: It is one of the key areas of Georgia's security policy. Cyber security, on the one hand, will facilitate the flexibility of cyber infrastructure against cyber security, and on the other hand, it is an additional factor in economic growth and social development.

Cyber security means protecting infrastructure and other objects (databases, registries, websites, watchdogs, etc.) from attacks, as it threatens society and governance.

Regulation and legislation: The legislative framework is a necessary prerequisite for e-commerce and electronic transactions between government agencies, government and business, government and citizens, as well as for the private and civil sectors. Failure to provide a proper legal framework for e-commerce will greatly hinder its success, as stakeholders will have no confidence to use it.

Given the frequency of use of information technologies, coordination is needed to ensure consistent and effective development of information systems. A prerequisite for successful coordination is to provide the right information on the systems and services that are increasingly used by users. Several regulatory standards have already been defined in Georgia to enable the development and modernization of existing ICTs.

Short term and professional trainings: E-commerce applications are created by people to help other people, which means that Georgia, on the one hand, needs highly skilled system developers who can design, plan and implement the applications. This is only possible when higher education institutions offer appropriate courses and disciplines. On the other hand, users need to have the skills needed to use the proposed applications. The first step to successful use is to raise awareness of potential customers and to show them the benefits of using the system and applications mentioned above. As a result, users should be able to use the system. This can be achieved by conducting trainings or by providing explanatory documentation on the system and applications.

5.3 After Adoption

Monitoring and updating: monitoring and updating is different from one actor
to another. For example, government has to monitor the use of the Internet, generate statistics for the use of e-commerce and activities, and provide these data to researchers and companies enabling them to redesign and restructure their business activities. Additionally, government needs to update infrastructure, strategies and other related issues according to new challenges and changes in technologies. Companies should monitor their business

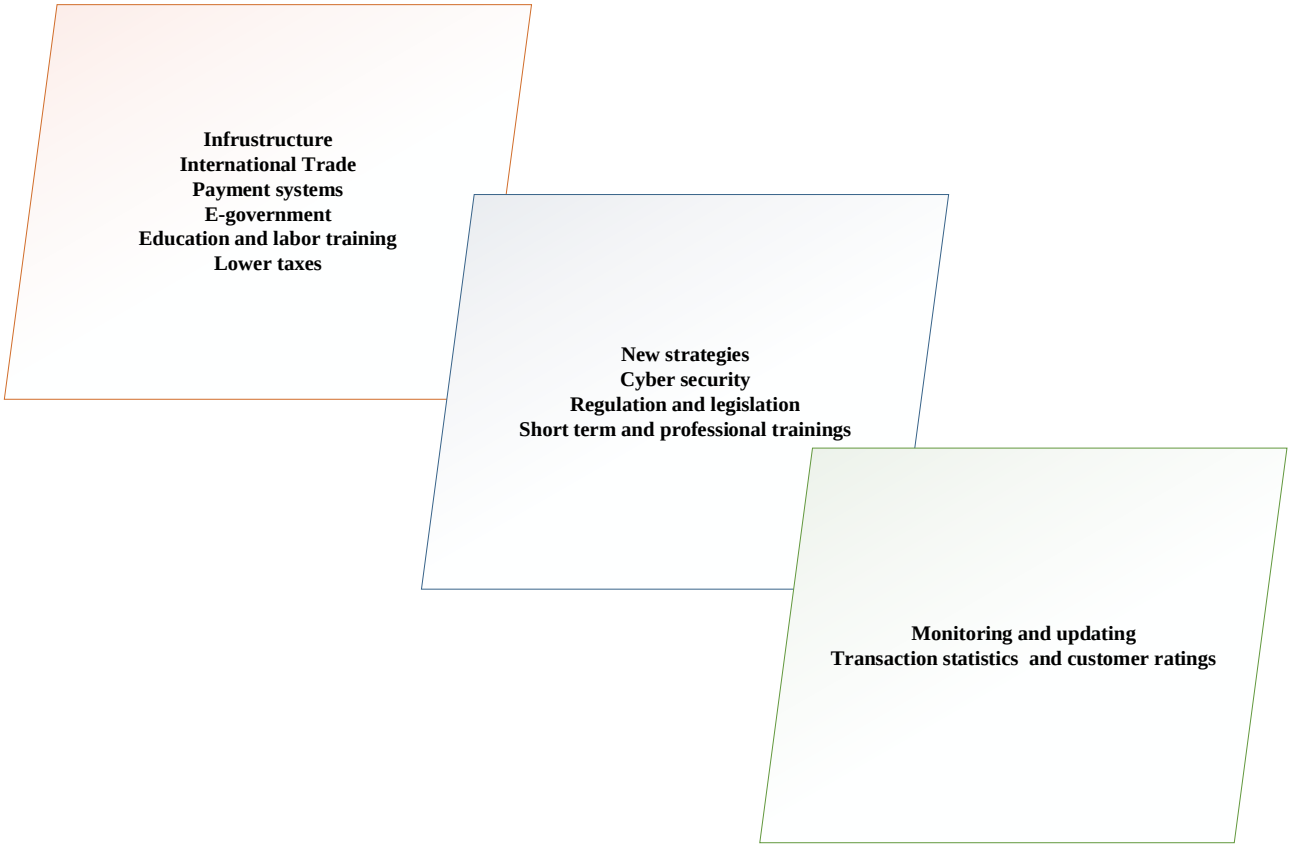
activities, website visitors and their interest and new technology and develop an understanding of their user's behavior and be technologically up to date.

Thus, companies need to update their websites with information to keep customers coming back and using the services. Furthermore, technologically advanced countries could help Georgia to monitor the use of the bought or licensed technology and advise on ways to maximize the use of that technology as well as helping Georgia to keep up to date.

Transaction statistics and customer ratings: Transaction statistics, customer ratings and comments on an e-services project focused on automated transaction data collection (eg, e-service user growth), qualitative feedback from users (ratings and comments). The focus should be on accessible (for example, my.gov.ge) services.

The goal is to manage information, execute strategy tasks, monitor the consumption of e-services compared to similar channels, contribute to the development of services and change their design. It is also relevant to link together a database of frequently asked questions and website statistics for better service design and service consumption analysis.

Figure 11 - The three stages of adoption



6 Generalize to other countries

Represented plan of action above has been created for Georgia, however this plan can be generalized to other developing countries as well. the impact of government will be less for the cuntries which has chosen the capitaist model of development of their economy.

Despite the type of approach, all developing countries are facing the same issues related to e-commerce adoption. However strategy and the number of aspects may be different in each country.

Business sector is more encouraged and involved in development of economy, infrastructure and investment in capitalist countries, therefore companies in the local market of the country are more powerfull and responsible in development of country's economy. Developing countries need to create a more efficient and effective private sector that offer consumers integrated, secure and high quality e-commerce, improved use and participation in sustainable economic growth focused on information and communication technologies. Even so, the private sector depends on the government facilitating electronic business, between companies and enterprises operating in the civil sector. This includes, for example, increasing investment to improve Internet access across the country, providing a stable, reliable and secure online network through appropriate legal, price and consumption regulations, or supporting online service delivery in remote locations.

6.1 Before Adoption

In the „before adoption" part, most of the issues will remain the same as it was represented above.

In the countries with capitalist approach, companies will remain the power to control the investments in the infrastructure and development of ICT. Business sector will help to keep healthy competition in the local market which may cause the decrease of costs and be progressive with technology, also promote a competitive and innovative business environment; Entrepreneurship development and partnerships in civil society, as well as public and private sector activities in the field of information and communication

technologies. Also, the payment system should incorporate all the essential and additional new technology-based functionality that is crucial to succeed in electronic commerce.

6.2 During Adoption

After the „before adoption“ stage, country will move to the „during adoption“ part where stakeholders has to deal with other issues such as payment systems, changing the business attitude and cyber security. In this case the government will have limitted involvment and business sector has to implement new strategies for their benefit.

Given the increased opportunities for technology use and increased access to information and communication technologies in the private sector, businesses need to operate online, therefore, build the secure systems. It turns out that the barrier in the small and medium business segment is often a language problem, which should be addressed by platform developers and bilingual - Georgian and English control panels, and the online shop itself should be accessible to visitors in any language in the world.

6.3 After Adoption

In the “after-adoption” level, companies should work closely to maintain a growth in ecommerce and gain the number of users and value of sales. Government will have to keep a close eye on the development and guarantee the positive effect on that country’s economy.

Businesses that use e-commerce in sales have all the conditions for success. However, this does not mean that it will always be so. Only those who use a far-sighted strategy will become prominent, therefore privet sector has to keep an eye on constant development of growth of ecommerce.

7 Conclusion

Today, digital processes are an integral part of every day life, not just for the economy. Modern information technologies have united and captured the entire planet, facilitating people-to-people contacts, developing business relationships, realizing scientific potential and resolving political relations between nations.

The countries has huge and well-recognized e-commerce and marketing potential. The potential of e-commerce applications to enable access to global markets and to reduce barriers to market entry is a fact which is heavily emphasized in the literature of e-commerce for developing countries (See Chapter 3, Section 3.2). E-commerce enables producers in the developing world to overcome traditional limitations associated with restricted access to information, high market-entry costs, and isolation from potential markets.

E-commerce driver forces and barriers has been identified by meta-analysis of literature of e-commerce and economic development (See Chapter 3, Section 3.8). Issues in context of Georgian situation has been examined afterwards (See Chapter 4). As a result of examination, issues has been confirmed and some sub-issues has been identified.

Consequently the research has introduced the plan of action for adoption of e-commerce (See Chapter 5). This plan of action is designed specifically for Republic of Georgia in order to adopt e-commerce. It has been devided into three stages: Before adoption, During adoption and After adoption. Each stage represents issues, developing countries are facing. In this thesis, plan of Action has been designed according to analysis of important aspects identified by questionnaire respondents and inteviewee comments.

Plan of action has been designed for Georgia, however this research tried to Generalize to other developing countries as well (See Chapter 6). Generalized version of design introduced modified version of Plan of action. Countries will have different approach depending on their level of development and involvement.

Taking into account the findings of this research and international experience, it is important to take certain measures in the following directions:

1. Education - It is important to educate the public about the Internet and information technologies. The study of modern technology gigs should be increased in schools. Special courses should be developed for anyone.

2. Infrastructure - The development of the Internet is closely linked to the development of the infrastructure. Effective in this regard, however, I think insufficient measures are being taken in Georgia. The state should provide every citizen with access to the Internet. In 2017, the Internet project was launched for all villages, which brought internet to approximately 150 rural libraries in Georgia.

3. Multiplication of Providers - The development of the Internet economy is linked to the abundance of Internet providers. There is not much competition in the Georgian internet market, there are several large providers throughout the country, which I think is insufficient. High competition and a multitude of providers will guarantee quality and low price;

4. Access to Technology - The state should promote the establishment of Internet-oriented companies in the country. Access to computer and mobile technology (due to high prices) is one of the obstacles to the development of the Internet economy;

5. Security - Cyber threats are not new to the internet. Hundreds of state and private companies are becoming victims of cyberattack each year and the losses are quite large. Lot of steps has been conducted in developing countries in order to avoid this danger. It is desirable that developing countries cooperate with leading countries of the world and take into account their experience;

As it is discussed in this thesis, the adoption of e-commerce can bring number of positive results to the developing countries, in general:

1. The e-commerce will encourage the strengthening of financial systems, since today only internet technologies enable fast and reliable banking transactions in e-commerce;
2. Develops trade - e-commerce will allow developing countries to increase the share of exports, which is especially important for developing countries;
3. Simplifies starting a small business - One has the opportunity to start a business on the internet without any capital, easy and convenient;
4. Promoting Globalization - The e-commerce is the key to globalization. The goal of any country in the modern world is to foster international trade and to share experiences from different countries, which is greatly facilitated by the Internet.

The internet economy in developing countries are evolving dynamically, but there are still many problems to be improved. In this way, sharing the experience of the world countries and supporting the state in different directions is very important. A strong state, educated and prosperous, built at the expense of an economically strong population, can be achieved through the development of the Internet economy.

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