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SUCCESS FACTORS OF ELECTRONIC COMMERCE IN THE BALTIC STATES

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ABSTRACT

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Electronic commerce can be described as a new way of doing business. Electronic commerce offers new opportunities for a wide range of companies working in different business sectors. Moreover, electronic commerce is widely adopted as new strategy to gain more business advantages over the competitors.

To maximize the potential of electronic commerce, companies should know what is most important in implementing electronic commerce. The purpose of this research is to identify the most important success factors of electronic commerce in the Baltic States.

The literature review helped to build a theoretical framework to describe the success factors of electronic commerce. Using the Information System success model this research explores factors like: System quality, Information quality, Service quality and Attractiveness.

Using the theoretical framework a survey was created. The sampling procedure was used to identify the target organizations for the survey. The target organizations were Baltic companies that have already implemented electronic commerce. The findings indicate that the most important success factors are: Usability, Trust, Complete products/services descriptions, Customer service responsiveness and Security.

This paper fulfils the identification of electronic commerce success factors and offers practical guidelines for building successful electronic commerce websites.

SANTRAUKA

Rubežius, I. Elektroninės komercijos sėkmės veiksniai Baltijos šalyse [Rankraštis]: magistro baigiamasis darbas: vadyba ir verslo administravimas. Vilnius, ISM Vadybos ir ekonomikos universitetas, 2007.

Augant interneto vartotojų skaičiui elektroninė komercija tampa svarbia verslo dalimi. Puikiai panaudojančioms savo potencialą įmonėms, elektroninė komercija gali atverti naujų verslo galimybių ir suteikti pranašumą prieš konkurentus.

Norint įgyvendinti elektroninės komercijos projektą reikia žinoti kas turi didžiausią įtaką tokio projekto sėkmei. Šio darbo tikslas – įvardinti svarbiausius elektroninės komercijos sėkmės veiksnius Baltijos šalyse.

Apžvelgus literatūra buvo išskirti elektroninės komercijos sėkmės veiksniai. Remiantis Informacinių Sistemų sėkmės modeliais veiksniai buvo suskirstyti į keturias grupes: sistemos kokybė, informacijos kokybė, aptarnavimo kokybė ir patrauklumas.

Literatūros apžvalga ir teorinis modelis padėjo sudaryti apklausos anketą, kurioje respondentų buvo prašoma įvertinti elektroninės komercijos veiksnius pagal svarbą. Apklausoje dalyvavo Baltijos šalių įmonės, kurios jau užsiima elektronine komercija. Pagal apklausos rezultatus, svarbiausi elektroninės komercijos sėkmės veiksniai yra patogumas naudotis, pasitikėjimas, išsamūs prekių ir paslaugų aprašymai, klientų aptarnavimo greitis ir saugumas.

Šis darbas įvardina svarbiausius elektroninės komercijos sėkmės veiksnius ir pateikia praktinius patarimus kaip sėkmingai įgyvendinti elektroninės komercijos projektus.

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INTRODUCTION

The Internet has radically changed the business world. Services like e-mails and websites became essential parts of almost every company. Therefore, the Internet is still growing, improving and provides many new possibilities for business. One of the most progressive and attractive online opportunities is electronic commerce.

Today most of the companies have websites providing information about the company, its history, products and services. Electronic commerce is much more than just a corporate website. Electronic commerce means selling of products or services online. Moreover, implementing electronic commerce can bring many benefits for a company including increased sales, reaching new markets and business efficiency. Furthermore, electronic commerce can help to gain competitive advantages. Implementing electronic commerce can have a huge impact on company performance. It could transform company activities in creating and selling products or services. Effective use of electronic commerce can add value for customers and improve business processes.

There are already many electronic commerce success stories, including such e-commerce systems like Amazon.com or eBay.com. However, there is still no clear formula for creating a successful online business. Electronic commerce is still considered to be risky and uncertain. Moreover, implementing electronic commerce includes many challenges and not all companies manage to maximize the potential of electronic commerce.

The aim of this research is:

- To identify the most important factors dealing with the success of electronic commerce in the Baltic States.

The objectives of the research are:

- To review the literature on electronic commerce successes factors. And build a theoretical framework describing the most important e-commerce success factors.
- To survey Baltic companies that have already implemented electronic commerce asking to rate the success factors.
- To develop guidelines for the most important e-commerce success factors identified by the Baltic companies.

First of all, the literature review will help to build a theoretical framework to describe the success factors of electronic commerce. The literature review will investigate a number of scholar articles and discussions on the subject. Moreover, two models of information system success will be analyzed.

Secondly, using the theoretical framework a survey will be created. Moreover, a special website with information about the research and the online survey will be developed. The sampling procedure will be used to identify the target organizations for the survey. The target organizations will be Baltic companies that have already implemented electronic commerce. Invitation letters to visit the survey website and rate success factors of electronic commerce will be sent to the selected organizations.

The survey will identify the most important electronic commerce success factors in the Baltic countries. Moreover, the survey will provide an overview of the Baltic e-commerce market, describing what type of electronic shops are most popular and how electronic commerce differs in Lithuania, Latvia and Estonia.

Finally, the results of the study will give a useful direction and set of guidelines for the future development of electronic commerce in the Baltic States. Moreover, the findings of the research can be used to help companies build successful electronic commerce systems.

1. LITERATURE REVIEW

This chapter aims to discuss the existing literature on electronic commerce or the so called e-commerce. Specifically, the review on the related literature will tend to focus on the key factors towards the success of e-commerce. Moreover, this section will also present the models or frameworks about the success of information systems in general and electronic commerce in particular.

1.1. The Internet Technology

The coming of the Internet technology has permanently changed and even transformed the way of conducting life by people. The Internet provides an access to worldwide communication and allows human being to be interconnected with each other.

Undoubtedly, it has affected the lives of every single individual on this planet. More importantly, the Internet technology has become an indispensable tool on commerce. With this, Internet can be considered as the most efficient medium not only in terms of conducting business but even in everyday way of life.

In the contemporary society, the internet technology is considered as powerful communication and commerce medium (Delone and McLean, 2003). The successful conduct of business operations does not necessarily require the personal or face-to-face interaction of the different key players in organizations. As such, online business became a prevalent form of conducting business.

The emergence of Internet paved the way for the realization of the electronic commerce. Business operations are now highly possible to conduct using the Internet. As such, the conduct of business among organizations is more convenient thus making things faster and easier.

With the development of e-commerce, Internet has become a well-accepted ground to purchase any kinds of products and services. According to Pastore (2001), in the first year of the new millennium, the Internet reached 426 million consumers worldwide: North America accounts for the 43% of all Internet users, Followed by Western Europe (25%) and Asia (21%). This encouraging figure has resulted to the rapid increase in the number of firms that have integrated e-commerce philosophies into their systems.

1.2. Electronic commerce

1.2.1. Definition

Electronic commerce is considered to be an unavoidable alternative for companies of the 21st century (Adam et al., 1999). When the term “electronic commerce” was first introduced, it was understood as simple as transactions over the Internet (US Department of Commerce, 1999). However, as e-commerce evolves, the horizon of e-commerce expands and includes selling, buying, logistics, or conducting other organization management activities via the Web (Schneider, 2002).

Electronic commerce can be defined in numerous ways, but they all imply some manner of electronic mediation for business transactions. Kotler (2003) provides a description of e-commerce, which identifies the main differences between company corporate website and e-commerce website: “E-commerce means that in addition to providing information to visitors about the company, its history, policies, products, and job opportunities, the company or site offers to transact or facilitate the selling of products and services online” (p. 41).

According to the US Department of Commerce (1999) “e-commerce is the exchange of information across electronic networks, at any stage in the supply chain, whether within an organization, between businesses, between businesses and consumers, or between the public and private sectors, whether paid or unpaid”. Although the term “commerce” carries with it a sense of activities being undertaken for payment, this definition gives the term “e-commerce” a broad informational scope to also include activities for which no direct payment is made within a supply chain. This definition does not just place the scope of e-commerce as being Internet or Web mediated but also includes electronically mediated activities undertaken outside the Internet and/or which pre-date the Internet (Eckersley, Harris, and Jackson, 2003).

Kotler (2003) provides numbers of Internet usage in USA: “In 2000, more than 106 million Americans went online, with 80 percent looking for information, 73 percent researching product or service before buying it, 68 percent looking for travel information, and 65 percent looking for information on movies, books, and leisure activities”(p. 40). According to Kotler (2003), “the most frequent online consumer purchases (in terms of the percentage of online buyers saying they have purchased in the category) have been books (58%), music (50%), software (44%), air tickets (29%), PC peripherals (28%), clothing (26%), videos

(24%), hotel reservations (20%), toys (20%), flowers (17%), and consumer electronics (12%)” (p. 40).

According to Kotler (2003), “the Internet is most useful for products and services when the shopper seeks greater ordering convenience (e.g., books and music) or lower cost (e.g., stock trading or news reading), it is also useful when buyers need information about product features and price (e.g., automobiles or computers)”(p. 40). Therefore, Kotler (2003) identifies that “the Internet is less useful for products that must be touched or examined in advance” (p. 40).

1.2.2. Benefits of electronic commerce

The desire of organizations to adopt electronic commerce is largely influenced by the possibilities to create business value and get the potential benefits.

Among the benefits achieved by the adoption of different business organizations on e-commerce are competitive advantages, retained and increase customer base, increased sales, business efficiency and an increased automation of process (Kuzic et. al., 2002). The mentioned benefits are only few of the gains which can be achieved through the adoption of e-commerce on business.

More specifically, the benefits of e-commerce are divided into tangible and intangible ones. Primarily, on the tangible benefits of e-commerce, it includes the business efficiency, reduced operation costs, increased automation processes, retained and expanded customer base, acquisition of a niche market and the transformation of traditional market chain.

On the other hand, the intangible benefits of e-commerce are consumer loyalty, convenient shopping, competitive advantage and enhancing the well-being and education of customers (Kuzic et. al., 2002).

With the prevalence of electronic commerce, it can even be considered as the buzzword for the twenty-first century especially in the business arena. In fact, it has created another perspective on the way of conducting businesses. And so, e-commerce has successfully transformed the competition among various organizations as well as the business environment as a whole.

1.2.3. Phases in electronic commerce implementation

The approach used in electronic business follows several phases. Specifically, there are three phases involved in the successful implementation of electronic business. The first on this phase is the process of identifying the business opportunity. Secondly, one must also select the technology infrastructure. And lastly, it deals with the phase of implementing the electronic business solution (Esichaikul and Chavananon, 2001).

On the first phase, there is still a need to determine if the organization is suitable in the area of electronic commerce. One should bear in mind that not all kinds of business are feasible to adopt an electronic kind of business. Even if e-commerce opens a wide array of opportunities for organizations, it is possible that your business is not compatible with e-commerce.

Moreover, the second stage of electronic business deals with the selection of technology infrastructure. In electronic business, technology solutions still vary depending on the business opportunities presented. With this, it is important for organizations to capitalize on the existing technology infrastructure.

Finally, on the third phase of the electronic business, it states the need for the implementation of the electronic business solution. On the process of implementation, it may involve issues that pertain to the organization as well as the complex technology. And in the solution, it should be linked with the other systems and operations of the business.

Various technological trends may affect the implementation of electronic business. This includes managing the security and standards, enterprise integration and technology convergence.

On managing security and standards, the transactions being conducted between the organization and the customers, trading partners and suppliers must be necessarily secured and non-refutable. Also in electronic business, it maintains a standard between trading partners, such that it enables the exact and efficient processing of transactions. In enterprise integration, it involves the integration of the technology with the organization. As such, the application of electronic business should be aligned with the back-end systems in order to provide total integration for the electronic business as well as with the customer. Lastly, on the technology convergence, it is deemed that the electronic business shall utilize all types of communication transport as an integrated service (Esichaikul and Chavananon, 2001).

1.2.6. The Website

Websites are widely deployed in almost every industry today. In fact, this is evident in the area of education, government and other institutions. As such, it is also commercially deployed. And as the use and dependency for the web technology becomes widespread, there is also a greater need to assess the factors associated with Website success (Liu and Arnett, 1999).

Websites are central to the operation of the Internet, especially e-commerce. According to Liu and Arnett (1999), the Web technology is highly important for electronic commerce because of several reasons. Primarily, Liu and Arnett (1999) describe electronic commerce as “a way of conducting business by companies and their customers performing electronic transactions through computer networks”. Moreover, electronic commerce can be used by organizations in the aspect of cutting costs, interacting directly with customers, running more smoothly in a more timely manner, and helping organizations outperform its competition (Liu and Arnett, 1999).

Through the website, it served as an important instrument in order to realize the electronic way of doing businesses. As such, it is perceived that the success of website greatly contributes to the success of the whole organization, specifically in the context of e-commerce. As what Cao et. al (2005) believe, online business alone cannot guarantee the gaining of competitive advantages. More importantly, Cao et. al (2005) states that the firms that utilize e-commerce depend on the people who visit their website, purchase the products and becomes repeat customers. In short, the website is a tool used by firms in order to acquire potential customers. Nevertheless, the Internet users usually have many websites, which they can use as alternatives. In the Internet it is much easier to go to another shop than in the real life. Online competitors are only a few clicks away and shop location does not have any importance. So it is essential to build website which would be interesting and useful for customers.

Specifically, it has been claimed that there are different qualities of websites that make it effective. Cao, et. al (2005) assert four sets of factors that capture the e-commerce quality using an IS success model: information quality, attractiveness, system quality and service quality.

1.3. E-Commerce Success Models

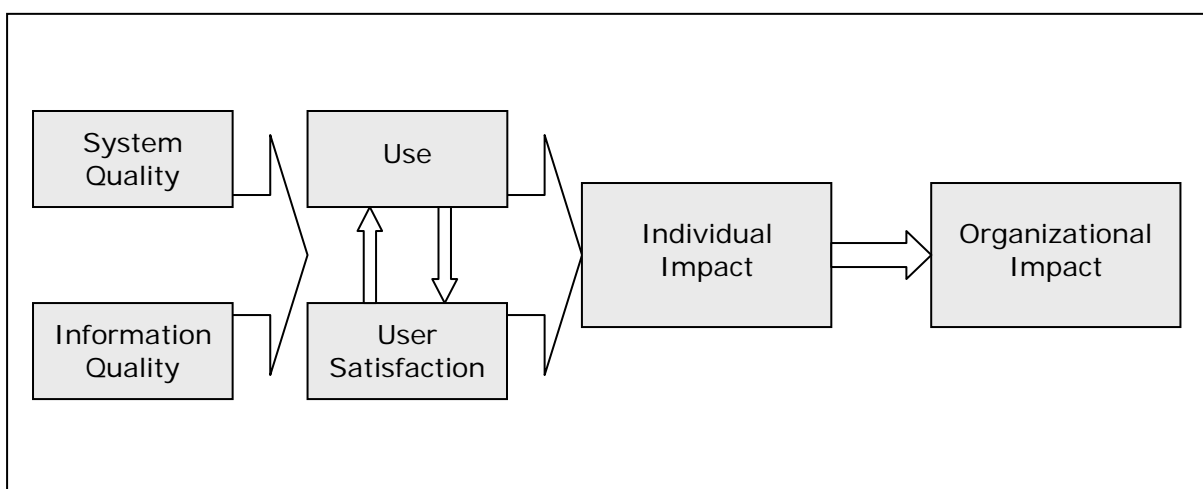
In identifying the success factors of e-commerce, there are two important models deemed to be beneficial in the process. These are the Delone and Mclean model or the so-called “IS Success model” and the Molla and Licker model which is otherwise known as the “E-commerce success model”.

1.3.1. The Delone and Mclean Model

Delone and McLean (2003) define six most important dimensions of IS success: systems quality, information quality, use, user satisfaction, individual impact and organizational impact.

The IS success model which was created by William H. Delone and Ephraim R. Mclean evaluates the success of e-commerce systems. The authors perceived the need of developing a model which can assess the gains achieved on e-commerce. With the prevalence of information technology, specifically the Internet, companies are risking large investments on e-commerce applications (Delone and Mclean, 2003). In particular, this model highlights the aspect of evaluating the success of electronic commerce systems on different levels – system level, individual level and organizational level (Molly and Licker, 2001). Figure 1 depicts the model devised by Delone and Mclean.

Figure 1. Delone and McLean’s Model of IS Success (Delone and MacLean, 2003)



In the model, there are six dimensions involved in order to evaluate the success of e-commerce systems. These are the system quality, information quality, use, user satisfaction,

individual impact and the organizational impact. In general, Delone and Mclean (2003) states that the customers or suppliers are the primary system users rather than the internal users. This is because of the fact that the customers and suppliers are the ones that utilize the system in order to buy or sell decisions as well as to execute transactions. And through the electronic decisions and transactions, it will tend to create an impact on individual users, organizations, industries as well as on the national economies.

Primarily, the “System quality” on the model evaluates the desired characteristics of an electronic commerce system. Among the qualities that are valued by users are the availability, usability, response time, adaptability and reliability.

On “Information quality”, it delves with the content issue on e-commerce. In addition, it aims for a web content that is relevant, secure, personalized, easy to understand and complete.

“Service quality” deals with the overall support provided by the service provider. Customer service in electronic commerce is as much important as in other business. Moreover, electronic commerce companies can use tools like Customer Relationship Management (CRM) and approach each customer in a very personalized way.

“Usage” component is the one in-charge with the process of measuring almost everything in electronic business. It can include the navigation within the site, visit to a website, the execution of a transaction and the retrieval of information.

Furthermore, the “User satisfaction” component is involved with the process of measuring the opinion of the customers as well as covering the entire customer experience cycle. Customer experience is very important in electronic commerce, because it is directly connected with customer’s willingness to make a repeat visit or a repeat purchase.

Lastly, the “Net benefits” component is considered as the most important success measure on e-commerce system since it captures the balance between the positive and negative impacts of the e-commerce on various key players such as the employees, customers, organizations, industries, suppliers, markets, economies and societies (Delone and Mclean, 2003).

Meanwhile, in order to provide a greater understanding on the IS success model, the table below elucidates on the metrics of e-commerce success. This table is almost the same with the IS success model. The only significant difference would be direct identification of the e-commerce success metrics.

Table 1. E-Commerce Success Metrics

E-Commerce Systems Components	Metrics
1. Systems Quality	Adaptability, Availability, Reliability, Response Time and Usability.
2. Information Quality	Completeness, Ease of Understanding, Personalization, Relevance and Security.
3. Service Quality	Assurance, Empathy and Responsiveness.
4. Use	Nature of Use, Navigation Patterns, Number of Site Visits and Number of Transactions Executed.
5. User Satisfaction	Repeat Purchases, Repeat Visits and User Surveys.
6. Net Benefits	Cost Savings, Expanded Markets, Incremental Additional Sales, Reduced Search Costs and Time Savings.

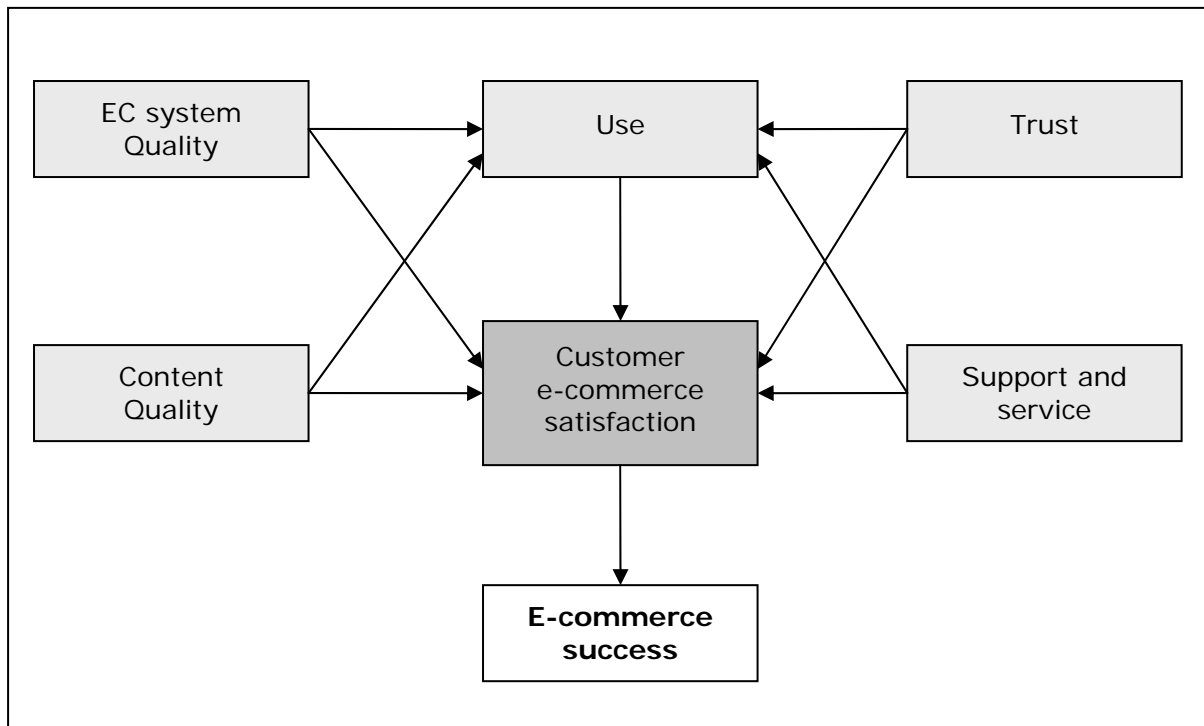
1.3.2. The Molla and Licker Model

As a response to the model presented by Delone and Mclean, specifically on the success of information systems, Alemayehu Molla and Paul S. Licker also devised their own version of the e-commerce success model. In this model, they have claimed to examine and evaluate the issues that are not included in the Delone and McLean’s IS success model.

More importantly, the model of Molla and Licker on the success of e-commerce highlights the integration of various independent variables into a comprehensive model as well as the process of defining each of the variables. Moreover, the Molla and Licker model claims of developing a comprehensive framework/model that is able to integrate the different independent variables to the satisfaction of the major group of users namely the customers (Molla and Licker, 2001).

The figure below illustrates the version of Molla and Licker on the aspect of achieving success on e-commerce. As compared with the IS success model of Delone and Mclean, it is evident that significant changes have been made not only on the general model of the e-commerce success but as well as with the independent variables that are involved in the model.

Figure 2. E-Commerce Success Model: Molla and Licker Model (Molla and Licker, 2001)



Among the changes made by the E-commerce success model (basing on the Delone and McLean’s IS success model) is the substitution of the word user satisfaction to customer satisfaction. According to Molla and Licker (2001), the customer is considered as a dependent variable in the framework/model. Also, through the use of “customer” instead of “user”, it is deemed to overcome the theoretical difficulty between the relationship of user satisfaction and organizational performance.

Furthermore, customer is believed to be the appropriate word in the model because this variable is a decisive factor in every business success. In particular, they are considered as the livelihood of the various business organizations. The satisfaction achieved by customers is an important condition for the success of organizations. The high level of customer satisfaction can be derived on the reduction of price elasticity, the increase of the products portfolio which is supplied to customers, customer loyalty, easier acquisition of price elasticity, enterprise’s prestige in the market, decrease of failure related-costs, and many more (Molla and Licker, 2001).

Aside from the customer satisfaction, there are also other differences between the model of Delone and Mclean, and Molla and Licker. Primarily, the components of e-commerce system and content quality replaced the system and information quality

components in the Delone and Mclean model. The trust and service factors are added in the model in order to capture the transactional and customer support components on the system of e-commerce as well as to understand the relationship between the customer e-commerce satisfaction and the component of use. Nonetheless, the “Use” component in the Delone and Mclean model was retained in the Molla and Licker model (Molla and Licker, 2001).

These changes made in the Molla and Licker model only imply the need to evaluate the traditional model of e-commerce system which is embodied by the Delone and Mclean model. In addition, the e-commerce success model tends to address the issues or subjects that were not addressed by the Delone and Mclean model. Undoubtedly, one can see here a more comprehensive, hence improved, model of e-commerce systems.

On the “Customer satisfaction” e-commerce component of the model, it is perceived that the self-service e-commerce system dominates more than the interpersonal service encounters in the context of the proliferation of e-commerce as well as other e-commerce related services. As such, there is a need to extend the satisfaction of customer and the user beyond the interpersonal dynamics of service counter and the informational purpose.

Meanwhile, on the component of e-commerce “System quality” it is highly required to have a seamless site performance. In addition, the “Content quality” component of the Molla and Licker model avows to the importance of information as an asset to modern business, especially in the aspect of e-commerce. Specifically, the content usually forms the core of the business.

The “Use” component is the utilized criteria in the aspect of assessing success. This criterion is also a useful indicator of the initial success of e-commerce business. Furthermore, the “Trust” component deals with the process of building customer relationships. In particular, the aspect of trust on e-commerce delves with the perceived level of security of the customers. As such, e-commerce systems must be able to provide security and privacy to the customers.

Finally, the “Support” component of the model emphasizes the aspect of customer loyalty. Organizations may catch the attention of customers at first but they are not yet assured if that customer will ever return to their site and support their products and services (Molla and Licker, 2001).

1.4. Success Factors of E-Commerce

The success of doing business through the e-commerce does not lie on the mere embrace of the current trend. After the integration of the Internet technology on a certain business, it is important to note that there are still many factors to consider for the company to become successful. In other words, the success of organizations in the context of e-commerce takes more than the mere act of integrating it to the company.

Moreover, e-commerce is also a complicated aspect being embraced by the organizations. It presents them with numerous difficulties and challenges. While there are perceived endless possibilities and opportunities with e-commerce, it is also accompanied by various complexities. Kuzic et. al. (2002) identifies some of the key challenges to e-commerce. These challenges are the lack of e-commerce knowledge, acquiring IT skilled people, budgeting, costs of technology, customer service, difficulties of acquiring skilled staff to design as well as the difficulty to implement and manage the IT aspects of the transition.

In general, the challenges on the adoption of e-commerce can be classified into technological, managerial and business challenges. The technological challenges deal with the security, web site issues and technology issues such as the costs, software and infrastructure. On the managerial challenges, it involves the people and organizational issues and obtaining senior management backing. Lastly, on the business challenges, it includes the customer service, legal issues and the customers' old habits (Kuzic et. al., 2002).

Indeed, the emergence of electronic commerce has paved the way for various businesses to gain competitive advantage. However, business organizations are not yet assured of the success of their company just because they have embraced the electronic systems. There are still countless factors that can affect the success of a business even in the aspect of e-commerce.

Success factors are indispensable in the operation of an organization. More importantly, in the case of companies that have ventured into e-commerce, success factors are undoubtedly inevitable for the conduct of business. Esichaikul and Chavananon (2001) assert that through the success factors, organizations are able to identify the information needs. In addition one is also able to list and describe the elements that are critical to program and system success. Lastly, the authors perceive the use of the success factors as an aid in the process of defining and focusing the management's responsibilities and efforts.

According to Esichaikul and Chavananon (2001), there are critical factors where the success or failure of the electronic commerce lies upon. These are the policy factors, management factors, technology factors, human resources management factors, environment factors, security factors, customer relationship management factors, organization factors and the business factors.

There are also various organizational trends that affect the success rate of electronic business. Among these trends are the specialization, skill management, process visibility and the learning organization. The specialization of organizations is indispensable to achieve higher profit of organizations in the global market. In particular, specialization pertains to the ability of organization to focus on what they do best. This may be in the aspect of developing the product, brand and market share. On the other hand, skill management deals with the capability of organizations to form high-performing teams in order to deliver results. In order to become a virtual enterprise, the internet enables the electronic business to utilize resources of external organization and project teams. Moreover, the process visibility enables the customers and employees to have an access to every stage of the product or service life cycle. As such, having a production process that is visible will allow the customers to inspect and interact with all aspect of the product as it moves through the cycle. Furthermore, on the aspect of learning organization, electronic business demands a culture of continuous innovation. More specifically, organization must drive an environment of continual learning amongst its employees in order to sustain growth and quality of service (Esichaikul and Chavananon, 2001).

Different business trends influence the success on the implementation of electronic business. These trends are the enterprise collaboration, customer relationship management (CRM) and identifying return on investment. Enterprise collaboration on e-commerce means that organizations collaborate with Internet-enabled trading partners. Organizations must understand that in order to succeed in the digital environment, it is inevitable to change the core trade processes and strategy plan. In terms of customer relationship management or CRM, electronic business demands a quality and consistency in all aspects of the customer relationship. Customers, especially in the electronic business world, expect a seamless integration between sales and service, demanding customer service before, during and after the sale. And on identifying return on investment, it is deemed important in order to determine the future direction of the company. In fact, the measurement and proactive control of the electronic business is important for survival (Esichaikul and Chavananon, 2001).

Goto (2005) states that electronic commerce websites live and die by a very simple metric: how much did we sell today? According to Goto (2005) several factors affect whether a shopper will buy from a specific e-commerce site:

- The site's usability factor: if someone can't find the product or if the product description does not answer that person's questions, then they definitely will not buy on that site.
- Price and the site's credibility and brand reputation factor: if multiple sites can supply the shopper's needs, he or she will prefer sites with cheaper products and sites that seem trustworthy enough to deliver the purchase and not cheat their customers.
- Finally, many additional usability factors help determine which site gets the buyer's money in the end: Which site has the easiest checkout process? Which site has a trustworthy design that makes people feel comfortable entering their credit card number?

1.4.1. System Quality

Basically, on system quality, it tends to measure the functionality of a website. In measuring this functionality, it involves the critical evaluation of the website's usability, availability and response time (DeLone and McLean, 2003).

For online customers, it is highly indispensable to have a website that is easy to read and navigate. There are important elements that can be used to assess the system quality of a website. This includes the search facility, multi-media capability and responsiveness. In search facility, it deals with the toll or structure that aids the website user in finding information, which at the same time, is relative to the perception of the user. On the other hand, the element of responsiveness involves the willingness to help online customers. And in terms of the multi-media capability, it deals with the non-verbal cues or features of the product and services which enhance the feeling and preference of a customer towards a website (Cao, et. al, 2005).

The other components which are also used to measure the system quality include the security, quick error recovery, ease of use, excitement, coordination to support all areas, precise operation and computation, and the balance payment method between security. More

specifically, in the aspect of system use, it needs to be evaluated in terms of confidence, track on-line, privacy, control and ease of use (Liu and Arnett, 2000).

And so, system quality of a website deals with the ability of organizations to achieve effective operations through the internet. Primarily, it emphasizes on delivering a highly functional website. Thus it can be said that in system quality, it prioritizes on efficiency of the website operation rather than on the design or appearance alone. While the appearance of the website is deemed necessary, the efficient system of the website is fundamental to its effective operation. According to Goto (2005), system quality is even more important than the appearance of the website or the design, because if there are system quality problem then it is impossible for the system to function.

Kotler (2003) states that, “visitors will judge a site’s performance on its ease of use” (p. 42). According to Kotler (2003), ease of use consists of three attributes: “(1) the website downloads quickly, (2) the first page is easy to understand, and (3) the visitor finds it easy to navigate to other pages that open quickly” (p. 42).

The literature review identifies that the most important System quality factors are:

- **Usability.** It is extremely important for electronic commerce systems to be easy to understand and to use. The user interface has to be clear for all types of users: from computer specialists to people using computer rarely.
- **Search and navigation.** Search and navigation tools help users to find information they need. The tools include menu structure, search fields, filters, sitemaps, history and etc.
- **Security.** Details regarding personal information and data regarding electronic money transactions must be highly secure.
- **Payment methods and buying process.** The buying process is very important for the customer, so it has to be very clear and easy to understand. Moreover, providing different payment methods can be very convenient for the customer.
- **Multi-media capability.** Product or service pictures, video, audio and animation can enhance customer emotions.

1.4.2. Information Quality

Meanwhile, the information quality of a website captures the content issues of a web site. The information being provided by the web is one of the goals of a website. Basically, customers are highly affected with the features and accuracy of the information. As such, the content of a website is represented by two constructs - the accuracy of information and its relevance.

The presentation of information about the services, products, events, people and ideas is the most fundamental capability of a website. With this, it is required that organizations should see to it that the information provided in the website is accurate, informative and updated. Aside from this, the information on the website should be related to the information needs of the customer (Cao, et. al, 2005).

Aside from the quality of the system of the website, the quality of the information being provided on the website is nonetheless important. Even if the company offers a fully functional website if its contents are not reliable and accurate, then the success of the company is compromised. The information available in the website must also be beneficial to the users to be able to encourage them of utilizing the products and services being offered.

Liu and Arnett (2000) give a wider array of measuring component for information quality. Among the components mentioned are relevance, accuracy, timeliness, flexibility and customized information presentation. Moreover, Liu and Arnett (2000) name more specific components like complete description of the products/services, differentiation of products and services, price information, perceived quality of the products and services, and information to support business objectives.

And so, with a greater number of components to measure the information quality of a website, the process of delivering a high quality of information on the website becomes more complicated. Nevertheless, one of the implications of this is that there is a higher standard for evaluating information quality. As a result, there is also a higher chance of the company to achieve success.

Kotler (2003) states that, “returning to a site depends on content, which must be interesting, useful, and continuously changing” (p. 42). According to Kotler (2003), “certain types of content function well to attract first-time visitors and to bring them back again: (1)

deep information with links to related sites, (2) changing news of interest, (3) changing free offers to visitors, (4) contests and sweepstakes, (5) humor and jokes, and (6) games” (p. 42).

Information quality can be best described by these factors:

- **Relevant information to the customer.** Customers are looking for information they need and they are not interested in other details. It is very important to point out the information that is relevant to the customer and make it accessible.
- **Accurate information.** Even if the company offers a fully functional website if its contents are not reliable and accurate, then the success of the company is compromised.
- **Personalization.** Electronic commerce website can be personalized based on the interests and preferences of the customer. Moreover, personalization can help to build better user experience.
- **Complete products/services descriptions.** Users need complete product information before buying it online. Product pages should show availability, product options, total cost and other important information.
- **Regular update of the content.** Fresh content helps to keep old customers and attract new customers.

1.4.3. Service Quality

Moreover, the characteristic of service quality is highly relevant on the aspect of website since it measures the overall support being delivered by the website. And in the process of doing this, it includes trust and empathy as measures. Trust can be equated to the reliability being perceived by the customer. As such, organizations must assure e-commerce customers of ethical and credible, legal and is able to protect their privacy. On empathy, it involves the ability of the website to provide caring, individualized information and attention to customers (Cao, et. al, 2005).

Service quality is also equated to customer service. It is important to note that even in the context of e-commerce customer service is still considered a crucial part of the system. It is through the aspect of service quality that customers must be assured of a secured as well as a legal website. Trust and Empathy would be important in achieving service quality. Trust

deals with the assurance to the customers of a highly reliable website. Empathy is more of the perception of the customers that the company addresses their individual needs. More importantly, even through the Internet, the customers must feel as if the company attends to each of their own needs. Hence, e-commerce customers also feel special. In other words, organizations should project a company that tends to have a customized customer service.

Liu and Arnett (2000) also agree with the Empathy factor as a measure in service quality. However, the authors added several factors in the aspect of measuring service quality such as the assurance, following-up service and quick responsiveness. And so, with the introduction of these factors, one can see that indeed, these factors are needed in addressing the needs of the customers.

Furthermore, the learning capability of organizations tends to affect the quality of services being provided. As such, the measures for evaluating one's learning capability includes the interactive function between the customers and business organization, customized search engine, help function and a well defined link (Liu and Arnett, 2000).

One more important issue in Service Quality is Customer relationship management (CRM). According to Kotler (2003), "CRM enables companies to provide excellent real-time customer service by developing a relationship with each valued customer through the effective use of individual account information" (p. 76). Moreover, "based on what they know about each customer, companies can customize market offerings, services, programs, messages, and media" (Kotler, 2003, p. 76). Schoder and Madeja (2004) describe Customer Relationship Management as a concept which helps to increase company profitability by identifying the most profitable customers and concentrating on working with them. Moreover, Schoder and Madeja (2004) find that CRM is a critical success factor in e-commerce, especially for B2C and small companies.

According to the literature review the most important factors of Service Quality are:

- **Customer service responsiveness.** How quickly customer service reacts to e-mail questions of present and potential customers as well as the quality of responses.
- **Empathy.** Empathy describes attention to the customer.
- **Following-up service.** Follow-up services address new and returning customers to encourage repeat business and loyalty. Follow-up services include e-mails, newsletters, direct mail flyers, paper catalogs and etc.

- **Trust.** Trust describes customer willingness to believe that the electronic commerce website is secure, reliable and will protect customer privacy.
- **Customer relationship management (CRM).** CRM is used to collect information about customers. The collected information helps to identify customer groups and make an individual approach for each customer.

1.4.4. Attractiveness

Kotler (2003) identifies attractiveness as one of the most important factors: “a key challenge is designing a site that is attractive on first viewing and interesting enough to encourage repeat visits” (p. 41). Moreover, Kotler (2003) states that “early test-based websites have increasingly been replaced by sophisticated sites that provide text, sound, and animation” (p. 41). According to Kotler (2003), electronic commerce site attractiveness can be described by the following factors: “(1) individual pages are clean looking and not overly crammed with content, (2) the type faces and font sizes are very readable, and (3) the site makes good use of color (and sound)”(p. 42).

The attractiveness of the website also influences the perception of customers towards the company. The appeal of the website can affect the overall website quality, such that even if the content is very accurate and reliable if the design and appearance is not that appealing or attractive, it can still compromise the effectiveness of the website. With this, playfulness would be an influential factor to achieve the attractiveness of the website. One can include objects that attract the attention of the website users with enjoyable elements in order to achieve the playfulness of the website. In particular, these objects include online games, software downloads and Q&A (Cao, et. al, 2005).

Furthermore, on the aspect of playfulness, there are various components that can be utilized in measuring the degree of playfulness of a certain website. Measure components would involve the aspect of enjoyment, feeling of participation, escapism, excitement and feeling of participation (Liu and Arnett, 2000). With this, it can be said that the playfulness of a website should touch the emotional aspect of the customers or the user. Through this feature, it enables organization to make the customers feel like an active participant of the website. At first, it may be perceived that the appearance of the website is not that highly important. However, the attractiveness of the website plays a vital role on its chances of acceptability to the e-commerce customers. More importantly, it is the first are to be judge by

customers in the process of deciding whether to embrace a certain website or not. The playfulness of the website motivates the customer visit a certain website even without the assurance of reliable information, efficient system operation or even high service quality.

The factors describing Attractiveness include:

- **Website design.** The website is the first impression the customers receive when entering to make a purchase. The website design must make the imprint to the customers and motivate them to buy the products or services.
- **Playfulness.** Playfulness elements help to attract the attention of the customer and involve him.
- **Branding.** Appropriate use of branding helps to keep consistency and build user trust. Moreover, website branding can help companies which already have known brands offline.
- **Entertainment.** Entertainment examples include online games, video clips.
- **Interactivity.** This is how the website interacts with potential customers.

2. METHODOLOGICAL APPROACH

The literature review helped to build a theoretical framework to describe the success factors of electronic commerce. The success factors of electronic commerce were grouped into four categories: System quality factors, Information quality factors, Service quality factors, Attractiveness and design factors.

Using the theoretical framework a survey was created. Moreover, a special website with information about the research and the online survey was developed. The survey was based on the Likert scale. Survey respondents were asked to rate success factors of e-commerce on a scale from 1 (lowest impact or least important) to 5 (highest impact or most important). The sampling procedure was used to identify the target organizations for the survey. The target organizations were Baltic companies that have already implemented and succeeded in electronic commerce. There were 199 target organizations selected from three Baltic countries: Lithuania (77), Latvia (75) and Estonia (47). Invitation letters to visit the survey website and rate success factors of electronic commerce were sent to the selected organizations.

2.1. Sampling procedure

According to Eurostat (2006), companies in Europe “use the internet for buying rather than selling goods”. Moreover, Eurostat (2006) states that “more online orders are made than online sales”. In 2004, 36% of enterprises in EU used the internet to order goods and services and only 11% were using the internet to sell their products (Eurostat, 2006). Baltic countries are still behind with percentage of companies working online (see Table 2).

Table 2. Electronic commerce on the internet in enterprises 2004 (%)

	Buying	Selling	Internet sales as % of total turnover
EU25	36	11	2,5
EU15	39	12	2,7
Lithuania	15	6	1,8
Latvia	7	2	0,6
Estonia	23	7	0,9

Source: Eurostat (2006), Survey on ICT usage and electronic commerce in enterprises.

In January 2005, 62% of enterprises in the EU25 had internet access and were equipped with a website (Eurostat, 2006). The highest percentage of companies having a website among the Baltic countries is in Estonia (53%). Lithuania goes in the second place with 41% and Latvia stays behind with only 29% of enterprises having their website.

According to Eurostat (2006), “the companies which have websites are able to supply information about their products or services, provide lists or a catalogue of goods or services available with prices, or to offer an after-sales service”. Moreover, companies use websites to market their own products or provide a webpage for loyal customers (Eurostat, 2006).

Table 3. Services offered by websites in 2005 (%)

	EU25	EU15	LT	LV	EE
Marketing own products	87	88	79	91	88
Facilitating access to product catalogues and price lists	46	44	55	52	49
Providing after sales support	24	26	5	7	14
Customized page for repeat clients	18	18	44	21	16

Source: Eurostat (2006), Survey on ICT usage and electronic commerce in enterprises.

Baltic States companies that have already implemented business to consumer electronic commerce were targeted to provide appropriate information for the research. Those organizations were targeted, because they already have knowledge about electronic commerce and real life experience.

The organizations were found and selected during an online search. First of all, search was done on search engines like Google and Yahoo. However, it did not help to find enough electronic commerce websites in Lithuania, Latvia and Estonia. Therefore, more information about electronic commerce websites in each country was found in some specialized websites and catalogs.

Moreover, lists of electronic shops were found on some bank’s websites. Banks like Hansa, SEB, Sampo and some other provide payment services for electronic commerce websites and they publish lists of e-shops which work with them.

While searching for electronic commerce websites in Lithuania, the most valuable resources of information were bank websites: Hansa bank (www.hansa.lt), SEB Vilnius bank

(www.seb.lt) and Sampo bank (www.sampo.lt). Furthermore, some local catalogs and website directories like Search.lt (www.search.lt) and Lithuania Online (www.on.lt) were also very helpful. One more important source of information was website of Best Lithuanian Websites Awards (www.top.lt). The organization runs best website awards each year and they also have a nomination for best electronic commerce website. In total, there were 77 electronic commerce websites found and selected from Lithuania.

In Latvia Hansa bank (www.hansa.lv) provides a list of electronic commerce websites which have implemented Bank Link system and offer their customers payment through Hansa bank. However, other banks don't provide any information about working with e-shops. Therefore, 75 electronic commerce websites were selected from Latvia, they all were found on Hansa bank website.

In Estonia banks do not provide lists of electronic commerce companies they are working with. Therefore, list of e-shops was found in local catalogs and directory websites – Kontakt! (www.kontakt.ee) and wwWarav (www.www.ee). There were 47 electronic commerce websites found and selected from Estonia.

After completing the sampling procedure there were 199 target organizations selected from three Baltic countries: Lithuania (77 e-shops), Latvia (75 e-shops) and Estonia (47 e-shops).

The last step was to get the contact information of each target organization and create a mailing list. The mailing list was determined by visiting each electronic commerce website. At the time of visit, the e-mail addresses were recorded from contact information sections of the websites.

2.2. Survey

Survey was chosen as the method for information gathering in the research. Survey can provide feedback to help measure the success factors of electronic commerce.

A special website for this research was created – www.e-baltic.info. The website had information about the research and the online survey. Invitations to visit the website and complete the survey were sent to all target organizations. The advantages of online survey are that it is very fast, easy to understand and it does not require downloading anything. Moreover, the online survey had an impact on response rate due to the fact that it is a convenient way of data collection.

The survey questions had answers on a Likert Scale. The Likert scale was used because it can show participant opinion and level of agreement or disagreement. Participants were asked to rate success factors of e-commerce. The purpose was to explore target organization opinion on success factors of ecommerce. The rating was on a scale from 1 (lowest impact or least important) to 5 (highest impact or most important).

Before starting the research the survey questions were tested with some website development professionals. The purpose of this was to examine the content validity of the questionnaire.

2.3. Measurement of variables

Based on the literature review, the success factors of electronic commerce were considered under four groups, as follows:

- System quality factors
- Information quality factors
- Service quality factors
- Attractiveness and design factors

Each group had 5 most important factors, in total there were 20 factors under 4 groups. From literature review, selected variables for measuring System quality included Usability, Search and navigation, Security, Payment methods and buying process, Multi-media capability.

Another five variables were used to measure Information quality: Relevant information to the customer, Accurate information, Personalization, Complete products / services descriptions, Regular update of the content.

The Service quality group included Customer service responsiveness, Empathy, Following-up service, Trust, Customer relationship management (CRM). The measurement variables of Attractiveness and design were: Website design, Playfulness, Branding, Entertainment, Interactivity.

All factors in the survey were measured on a five-point Likert scale from 1 (lowest impact or least important) to 5 (highest impact or most important). List of factors with descriptions is provided below.

Table 4. System quality factors

System quality factors	
Success factor	Description
Usability	Usability describes how easy it is for customers to use the system and understand the user interface.
Search and navigation	Search and navigation tools help users to find information they need. The tools include menu structure, search fields, filters, sitemaps, history and etc.
Security	Security is very sensitive issue in electronic commerce. Details regarding personal information and data regarding electronic money transactions must be highly secure.
Payment methods and buying process	The buying process is very important for the customer, so it has to be very clear and easy to understand. Moreover, providing different payment methods can be very convenient for the customer.
Multi-media capability	Product or service pictures, video, audio and animation can enhance customer emotions.

Table 5. Information quality factors

Information quality factors	
Success factor	Description
Relevant information to the customer	Customers are looking for information they need and they are not interested in other details. It is very important to point out the information that is relevant to the customer and make it accessible.
Accurate information	Even if the company offers a fully functional website if its contents are not reliable and accurate, then the success of the company is compromised.
Personalization	Electronic commerce website can be personalized based on the interests and preferences of the customer. Moreover, personalization can help to build better user experience.
Complete products/services descriptions	Users need complete product information before buying it online. Product pages should show availability, product options, total cost and other important information.
Regular update of the content	Fresh content helps to keep old customers and attract new customers.

Table 6. Service quality factors

Service quality factors	
Success factor	Description
Customer service responsiveness	Customer service responsiveness describes how quickly customer service reacts to e-mail questions of present and potential customers as well as the quality of responses.
Empathy	Empathy describes attention to the customer.
Following-up service	Follow-up services address new and returning customers to encourage repeat business and loyalty. Follow-up services include e-mails, newsletters, direct mail flyers, paper catalogs and etc.
Trust	Trust describes customer willingness to believe that the electronic commerce website is secure, reliable and will protect customer privacy.
Customer relationship management (CRM)	CRM is used to collect information about customers. The collected information helps to identify customer groups and make an individual approach for each customer.

Table 7. Attractiveness and design quality factors

Attractiveness and design factors	
Success factor	Description
Website design	The website is the first impression the customers receive when entering to make a purchase. The website design must make the imprint to the customers and motivate them to buy the products or services.
Playfulness	Playfulness elements help to attract the attention of the customer and involve him.
Branding	Appropriate use of branding helps to keep consistency and build user trust. Moreover, website branding can help companies which already have known brands offline.
Entertainment	Entertainment examples include online games, video clips.
Interactivity	This is how the website interacts with potential customers and involves them into various activities.

3. EMPIRICAL RESEARCH (REPORT)

3.1. Response rate

The invitations to visit online survey and to rate success factors of e-commerce were sent to 199 Baltic companies that have already implemented electronic commerce. The survey was answered by 52 respondents representing a response rate of 26.13%. Table 8 presents the characteristics of the respondents.

Table 8. Characteristics of respondents

Country	Number	Percentage, %
Lithuania	23	44,23
Latvia	18	34,62
Estonia	11	21,15
Business category	Number	Percentage, %
Books, Music & Film	8	15,38
Travel & Tickets	7	13,46
Computers	6	11,54
Electronics	5	9,62
Lifestyle & Gift	5	9,62
Apparel & Accessories	4	7,69
Arts & Entertainment	3	5,77
Digital content	3	5,77
Toys & Hobbies	3	5,77
Other	3	5,77
Health & Personal Care	2	3,85
Sports & Outdoors	2	3,85
Arts & Crafts	1	1,92
Automotive	0	0,00
Food & Gourmet	0	0,00
Home & Garden	0	0,00

Most of the respondents were from Lithuania (44,23%) and Latvia (34,62%), because there were more e-shops selected from these countries – Lithuania (77 e-shops) and Latvia (75 e-shops). There were 11 respondents out of 47 invitations sent from Estonia and it accounted for 21,15% of the whole responses.

The respondents represent a broad coverage of business categories, which indicates that the survey results can be used to explain electronic commerce success factors across different types of industries. Most of the respondents were from Books, Music & Film (15,38%), Travel & Tickets (13,46%) and Computers (11,54%) business categories.

The survey results are similar with the results of Eurostat research done in 2005.

Table 9. The goods and services most frequently purchased on the internet by private individuals in 2005 (%)

	EU25	EU15	LT	LV	EE
% of persons who bought in the last 12 months	23,1	27,2	2,2	4,8	6,8
Books/magazines/e-learning	7,9	9,3	0,8	0,7	2,3
Travel and holiday accommodation	7,8	9,7	0,4	0,8	2,2
Clothes, sports goods	7,5	9,1	0,2	0,6	2,4
Films/music	7,4	9,0	0,5	1,0	-
Tickets	5,6	8,9	0,1	0,8	-
Household goods	5,5	6,8	0,5	0,6	2,8
Electronic equipment	4,6	5,4	0,1	1,4	-
Computer software	4,2	5,0	0,4	0,5	-
Computer hardware	3,5	4,2	0,2	0,4	-
Food/groceries	2,3	2,8	0,1	0,1	-
Shares/Financial services/insurance	2,2	2,8	0,1	0,1	-

Source: Eurostat, Community survey on ICT usage and electronic commerce in enterprises.

Baltic countries are not an exception; each country has a few online book shops that are successfully working already for a few years. In Lithuania some of the leading online book shops are Patogu pirkti (www.patogupirkti.lt) and Knygu Klubas (www.knyguklubas.lt).

In Latvia and Estonia online book shops are also popular. Online book shops have many advantages over usual books stores: it is easy to find what you need, you can get all

needed information about a book, compare it, read other users comments and do everything without going out or having to stand in a queue.

Selling CD and DVD online is very similar to selling books. Most of electronic commerce companies, which started from selling books now also sell CD and DVD. Perhaps this is mostly influenced by the success of Amazon.com, which was started as an online book shop and later evolved to one of the biggest electronic commerce sites selling almost everything. Some similar tendency can be also seen in the Baltic countries, where some online stores started from books and now has a wider range of products for sale.

Another popular type of electronic commerce in the Baltic countries is Travel & Tickets e-shops. In Lithuania booking airline tickets online is very popular today. The first company to start selling airline tickets online was Greitai.lt (www.greitai.lt) and it became very successful. Now there are more companies selling airline tickets online and the competition is very high. Moreover, in Lithuania people also started to buy tickets to concerts and other events online. There are two companies competing in the field: Tiketa (www.tiketa.lt) and Bilietai.lt (www.bilietai.lt). In Latvia and Estonia there are also some Travel & Tickets e-shops. One of the most important reasons of airline ticket e-shops success is that buying airline tickets online is cheaper than at local travel agencies. Selling tickets online is very convenient and the process of setting up the business is not so difficult as for example in online book shop business. This is mainly because in online tickets business there are almost no problems with delivery: in most cases the tickets can be printed or it is very easy to send them.

Companies selling computers and various computer accessories have also developed e-shops. In some cases, they only take orders online, but don't accept payments. Therefore, the biggest companies in Computer section have implemented the full electronic commerce solutions. Selling computers online is not easy, especially organizing delivery is a difficult issue. Therefore, companies selling computers have to be innovators and promote electronic commerce, because it is also promotion of their business.

There are also some Baltic companies selling clothes online. It may seem that it is very hard to sell clothes online, because people would like to try them on and buy only after that. Therefore if online clothes shops manage to create good return policies and offer lower prices, they can be successful.

3.2. Survey results

The data gathered from the online survey was presented on a Likert Scale, which allows respondents to provide answers with degrees of agreement or disagreement. Survey respondents rated success factors of e-commerce on a scale from 1 (lowest impact or least important) to 5 (highest impact or most important).

The data was analyzed using SPSS (Statistical Package for the Social Science). The rank order of success factors was established by calculating the means of the factors.

Table 10 present their Rank orders, based on mean values for each factor.

Table 10. Rank order of electronic commerce success factors

Rank	Success factor	Mean	Number of cases	Standard deviation
1	Usability	4,67	52	0,47
2	Trust	4,63	52	0,53
3	Complete products/services descriptions	4,67	52	0,74
4	Customer service responsiveness	4,27	52	0,79
5	Security	4,13	52	0,86
6	Personalization	4,12	52	0,98
7	Branding	4,06	52	1,00
8	Website design	4,04	52	0,84
9	Search and navigation	3,90	52	0,63
10	Relevant information to the customer	3,90	52	0,85
11	Following-up service	3,81	52	0,91
12	Regular update of the content	3,75	52	1,06
13	Payment methods and buying process	3,73	52	0,66
14	Customer relationship management (CRM)	3,67	52	0,81
15	Accurate information	3,58	52	0,98
16	Empathy	3,54	52	0,64
17	Multi-media capability	3,50	52	0,94
18	Interactivity	2,98	52	0,96
19	Entertainment	2,52	52	0,87
20	Playfulness	2,44	52	0,73

Table 10 shows that the most popular success factors include usability, trust, complete products/services descriptions, customer service responsiveness and security.

The success factors of electronic commerce were grouped into four categories: System quality factors, Information quality factors, Service quality factors, Attractiveness and design factors. Table 11 shows the rank order of success factor categories.

Table 11. Rank order of success factor categories

Rank	Category	Mean
1	Information quality factors Relevant information to the customer, Accurate information, Personalization, Complete products/services descriptions, Regular update of the content	4,00
2	Service quality factors Customer service responsiveness, Empathy, Following-up service, Trust, Customer relationship management (CRM)	3,98
3	System quality factors Usability, Search and navigation, Security, Payment methods and buying process, Multi-media capability	3,97
4	Attractiveness and design factors Website design, Playfulness, Branding, Entertainment, Interactivity	3,20

Table 12 indicates that three categories (Information quality, Service quality and System quality) have reached a very similar score. This shows that respondents think that all of those categories are very important for electronic commerce. Therefore, there is a significant difference between the three categories and the fourth category, which is Attractiveness and design.

The results of the study demonstrate that the importance of electronic commerce factors in different Baltic countries is quite similar. Table 12 displays Comparative analysis of success factors in Lithuania, Latvia and Estonia.

Table 12. Comparative analysis of success factors in Lithuania, Latvia and Estonia

Success factor	Mean		
	Lithuania	Latvia	Estonia
Usability	4,91	4,83	4,00
Search and navigation	4,27	3,44	3,92
Security	4,41	3,78	4,17
Payment methods and buying process	3,82	3,72	3,58
Multi-media capability	3,73	3,39	3,25
Relevant information to the customer	4,05	3,78	3,83
Accurate information	3,59	3,78	3,25
Personalization	4,23	4,17	3,83
Complete products/services descriptions	4,14	4,61	4,42
Regular update of the content	4,14	3,72	3,08
Customer service responsiveness	4,18	4,44	4,17
Empathy	3,50	3,56	3,58
Following-up service	4,23	3,56	3,42
Trust	4,68	4,61	4,58
Customer relationship management (CRM)	3,64	3,61	3,83
Website design	3,95	4,06	4,17
Playfulness	2,36	2,67	2,25
Branding	4,00	4,50	3,50
Entertainment	2,55	2,44	2,58
Interactivity	3,32	2,72	2,75

Usability factor has scored most points in Lithuania and Latvia. However, it did not even reach 5 of the most important factors in Estonia. Trust factor has been indicated as very important by all respondents from different countries. Complete products/services description and Customer service responsiveness seemed important to respondents from Latvia and Estonia.

The results from three countries show some differences in identifying the most important success factors of electronic commerce. Therefore, it is clear that all respondents agree on importance of Usability and Trust factors.

4.1. GUIDELINES FOR SUCCESSFUL ELECTRONIC COMMERCE

The research of electronic commerce success factors in the Baltic States has shown that the most important factors for successful e-commerce are: Usability, Trust, Complete products/services descriptions, Customer service responsiveness and Security. These factors were identified by companies that already have implemented electronic commerce.

This chapter will provide guidelines for successful electronic commerce. The guidelines will concentrate on the most important success factors of electronic commerce. These guidelines are based on Nielsen Norman Group research called E-commerce User Experience.

4.1. Usability

Usability is an important determinant for the success of an e-commerce site. “If the customer cannot find the product, the customer cannot buy the product” (Nielsen, 2001).

There are many additional usability concerns in e-commerce beyond the simple ability to locate a desired product. Each and every usability deficiency in a design becomes an obstacle to the shopper’s ability and willingness to buy. According to Nielsen (2001a), “low usability equals lost sales” (p. 6).

One of the most important guidelines to improve usability is to increase the users’ sense of control and freedom. It feels good to be in control. As Nielsen et al. (2001a) state: “It feels bad to be dominated by a machine. There are a few exceptions to this rule, such as operations that happen only once and when it may be better to abandon responsibility and let the system take over. The wizard used to install Microsoft Office is a great example of an oppressive interface that is probably acceptable to most Office users” (p. 7).

For the first few years of e-business, much attention was focused on the number of unique visitors to a site. Companies were sometimes valued based on this number instead of their real business models or ability to derive revenues and profits from the visitors. Getting people to your site certainly still matters: having the best site does no good if nobody knows about it. But it is at least as important to make sure visitors are satisfied and turn into customers. It also matters how much each customer buys and whether people become loyal customers. These parameters are also highly affected by usability. The more pleasant and

trustworthy a site seems, the more likely people are to return. The easier it is for shoppers to find what they are looking for, the more they buy.

E-commerce companies closely guard their sales numbers, so there is not much publicly known about increased usability's effect on sales. One of the most likely explanations for the growth in sales that results from improved usability is that people recognize and prefer good service and high quality websites. A second explanation for why usability increases sales is related to trust. A site that is easier to use sends the message that the company behind the site cares about its customers and has a commitment to good customer service. If it is easy to find the product the shopper wants to buy, and if the product description is easy to understand and answers all questions, then he or she may believe that the company is likely to deliver the goods as promised and that the shipment will be in good shape and arrive on time.

People may also assume that the ease of shopping indicates that getting support or other help would be easy too. Such user predictions are more emotional than logical, because there is no reason to expect that a company that has a high-quality website should necessarily have a high quality fulfillment department or a responsive support center. But people are quite likely to transfer their impression of the quality of the user experience into their expectations for other aspects of the customer relationship.

Usability is an important factor, because it translates into sales. Nielsen et al. (2001) report that, in many cases, sales increased by 100% to 400% when an e-commerce site launched an improved user interface. The authors said that this increase can be explained by the fact that people recognize and prefer good service and high quality websites. Another explanation for this increase in sales is related to trust. According to Nielsen et al. (2001a): "A site that is easier to use sends the message that the company behind the site cares about its customers and has a commitment to good customer service" (p. 9).

Given that improved usability can often double the sales of an e-commerce site, how much does it cost to make a website easier to use? There is no simple answer. Therefore investments in usability should continue to increase for the following reasons:

- **Competition.** Increased competition on the Internet will lead to increased requirements for usability - people will simply refuse to use any sites that are not as easy as the very best sites on the Web.

- **Return on investment.** Goto (2005) believes that usability can increase return on investment. There are various types of usability testing and it is possible to find an effective usability evaluation method which would not require huge investments. Moreover, usability testing in website development process can be very efficient and save money which would be required in redesigning the website later. According to Marcus (2002): “Usability increases customer satisfaction and productivity, leads to customer trust and loyalty, and inevitably results in tangible cost savings and profitability. Because user-interface (UI) development is part of a product’s development cost anyway, it pays to do it right” (p. 2).
- **Changing audience.** As the Internet continues to grow, it will reach many more users, and these users will have less computer and Web experience than today’s users do. New users will need improved usability or they will not be able to use the Web at all.

Many companies think that they are already conducting usability tests, but actually they are running only focus groups or online surveys. Some companies even feel that they are testing usability by analyzing website statistics. Although all these kinds of feedback can be valuable and will probably provide interesting insights, simply getting feedback does not solve or even identify usability problems. Unlike surveys or focus groups, usability testing is one-on-one processes that incorporates a watch and learn approach. Usability testing displays how users actually use the website and helps to identify website problems. Usability testing results can be used by website developers and company management to better understand how closely business goals are tied to user experience goals.

Brinck, Gergle and Wood (2002) identify three usability evaluation methods: usability inspection, group walkthroughs and user testing.

According to Brinck, Gergle and Wood (2002) the easiest usability evaluation method is usability inspection which can be done by hiring a professional interface designer who can sit down and evaluate the website based on general usability principles or specific guidelines. Moreover, it would be better if usability inspection would be done by a group of designers who could evaluate the website independently and then combine notes to make an overall list of website usability problems.

Another usability method presented by Brinck, Gergle and Wood (2002) is a group walkthrough, which includes a group of stakeholders who get together and investigate the

website. In most cases participants of group walkthrough include not only designers but also managers, programmers, writers, sales people, marketing specialists.

Brinck, Gergle and Wood (2002) describe user testing as the most popular method of usability evaluation. User testing provides a possibility to observe users working with the website. This method helps to identify very specific usability problems, which can sometimes be missed by professional web designers.

Different usability evaluation methods can provide different results. Sometimes it could be best to try to combine a few testing methods to get the best result. Therefore, electronic commerce companies should understand that usability testing is essential and has to be a part of website development. Moreover, it is not enough to conduct usability testing only during website development, it is also very important to make usability evaluations on a regular basis.

4.2. Trust

Trust is essential in electronic commerce. If a shopper doesn't trust a website, he is not going to buy. The design of an e-commerce website communicates trustworthiness online, just as the appearance of a store and its sales staff does in the physical world. Professional appearance builds consumer confidence. Comprehensive, correct, and current product selections and site content convey quality.

To ensure trust, even small errors like links that don't work or typographical errors have to be eliminated. Moreover, technical problems have a very high impact on trust. Website technical problems can range from the absolutely critical trust issue of secure encryption for financial transactions to the extremely slow download speeds of some multimedia product pages. People tend to trust a site more when it has a reliable and responsive server and works without any problems.

Trust is extremely important in electronic commerce, because people need to feel secure and confident while buying online (Goto, 2005). The buying process in electronic commerce is very sensitive, because it requires customer personal information and even information about customer bank account or credit card. This kind of collaboration between online shop and a customer would be impossible without the trust.

Nielsen Norman Group (2001) in their e-commerce user experience research provide list of guidelines to increase customer trust:

- **Detailed company information.** The website should have complete contact details and show that there are real people behind the company. Moreover, information about the company's legal status, associations and partnerships should also be included. Describing company's achievements, provide company background, history and development can also help to build customer trust. Furthermore, the website can increase customer trust by communicating the company's values and stressing moral values in the company's philosophy.
- **Fair pricing.** Trust is also related to pricing - high prices, shipping costs that are unreasonable, and hidden prices can cause problems. The website should show total cost, including taxes, shipping and handling, as soon as possible and justify prices that appear odd.
- **Complete product information.** Consumers want sufficient and accurate information about products. Moreover, online customers want honest information about the product itself, including images that show detail, product availability, price including hidden costs, such as taxes and shipping.
- **Clear and Customer-Friendly Policies.** Moreover, a free-return policy can be an especially strong sales inducement. Policies need to be tested to make sure your customers understand them and find them acceptable.
- **Appropriate use of personal information.** Many users are reluctant to submit information that they considered sensitive. E-commerce website should ask for sensitive information only if it is absolutely necessary to process the order. Moreover, it has to be explained carefully why the information that people consider sensitive is needed.
- **Allow customers to purchase without registering.** Forcing users to register creates a real barrier for first-time customers. Registration erodes trust, because people don't perceive benefit to themselves in registering. It is much better not to require registration before or during a purchase and only offer it as an option after the purchase. The benefits of registration have to be clearly explained.
- **Access to Helpful People.** Access to real human beings can increase trust. Users expect that they can gain access to helpful people through: fax, phone, e-mail or

traditional mail. It is very important to show that people, not machines, are responding to customer requests. For the sake of credibility and trust, key statements, company policies, and product reviews should include the names of the people responsible.

4.3. Complete products/services descriptions

In an e-commerce site, a product page presents the details of a product, which includes descriptive text and images. A product page also contains purchasing information, such as availability and price. Well-designed product pages are essential. Customers need sufficient information about an item in order to make purchase decisions. According to Nielsen et al. (2001) good product page has the following characteristics:

- Product has descriptive name, usually accompanied by a recognizable image.
- Product description includes all the factors customers care about.
- Page shows total cost, including price, delivery/shipping charges, and tax.
- Page states availability of product and shipping time.
- Page has links to manufacturer's warranty and site's guarantee or return policy.
- Page presents a highly visible means of putting items into the shopping cart.

Nielsen et al. (2001) also reported that, a product page must offer customer opinions and/or expert ratings, and must have the capability to enlarge the product image to see details, including showing rotated or alternative views. Moreover, a product page must provide a means to specify product options, such as color and finish.

To create a successful product page, factors which are considered by customer have to be taken into account. Some information is conveyed best by words, and other information by pictures, so good product pages employ an effective combination of words and images. Ideally, product text and images should work together. The images should show as much detail as possible. The accompanying text can reinforce key features and explain intangibles.

List of guidelines for successful product pages from Nielsen Norman Group (2001) report on e-commerce user experience:

- **Provide the product details customers want and need.** Users appreciate information that is specific rather than general and it is important to describe products accurately. Providing reviews and / or ratings can also help customers to make their decision.

However, presenting too much detail at once can be too complex for customers. Therefore, it is better to layer the information.

- **Product images.** There are many visually oriented users who want to see pictures of products. Providing images that are big, detailed and free of visual distractions can help customers to make their buying decision. The critical factor in determining how large images should be, and whether enlarged images are necessary, is whether or not shoppers can see the product details they need in order to make a purchase decision. For some products, such as videos and coffee, the visual details aren't very important, so it is acceptable for some sites to use relatively small images that can not be enlarged. The need for an enlarged view is strongest on the clothing and furniture sites, because users are most concerned about details for these products. As with image size, the importance of showing multiple views depends on the product. Users sometimes want to see other views of items (especially clothing and furniture). Seeing the side or back of an item can be important to their purchasing decision.
- **Price, Other Costs, and Availability.** Price should be displayed on both the category page and the product page, because users want to see prices at the category page level, not just when they go down to the individual product page. Moreover, users appreciate seeing information about additional costs right on the product page, rather than waiting until the checkout process. Furthermore, it is a good idea to provide links to guarantees and return policies on the product page. Product page has to show if an item is in stock, and if it is not, the page should explain the situation, telling when the item will be available or showing the color and size combinations that are available.
- **Specifying Product Options.** For many products, customers must specify options. For videos, there are different media (for example, VHS or DVD). For clothing, choices of size and color are usually required. For coffee, regular or decaffeinated must be selected. For furniture, there are often fabric and finish alternatives. It is recommended to show all options on the same page. Showing all options is especially important when choosing colors, which are difficult to compare from memory. Moreover, it is required to show the product image in each available color. Users expected to see the image of the product in each of the different colors available. When users chose a color, they wanted to see the photo change to display the product

in that color. Moreover, users want to see their specifications appear in the shopping cart as well as on the product page.

- **Adding Products to the Shopping Cart.** Inability to get an item into the shopping cart can be a serious problem. This problem is especially painful, because the user had invested time and effort in choosing a product and was ready to complete the purchase. To prevent this kind of problems beware of using clever names for the shopping cart and Buy button, use a simple button for the buy mechanism, provide shopping instructions. Moreover, it is necessary to provide strong feedback when an item has been put into the cart. When customers put an item in their shopping carts, they need to see that something has happened.

4.4. Customer service

Customer service in e-commerce, as in any other business model, should be directed towards establishing relationship with customers. According to Goto (2005), electronic commerce companies, which pay a lot of attention to good customer service manage to outperform competitors and reach better results.

Nielsen Norman Group (2001) in their e-commerce user experience research provide list of guidelines for customer service:

- **Provide different means of contact.** First of all, good customer service begins from providing traditional means of contact: phone, fax numbers and postal address. Moreover, there could be online means of contact: e-mail addresses, support system or instant messaging.
- **Handle customer inquiries efficiently.** It is important to provide feedback that inquiries are queued for processing. Moreover, customer service should reply to e-mail inquires within 24 hours. The responses should be complete and personalized.
- **Provide feedback about the order.** Confirmation message should be sent immediately after a customer has placed an order. Moreover, it is recommended to allow customers to track orders in real time and make it easy for customers to modify and cancels orders.

- **Provide an effective after-sales service.** It should be easy and clear how to return products and get refunds. Effective after-sales service is very important, because it is cheaper to retain satisfied customers than to acquire new ones.

4.5. Security

Security in electronic commerce is a very sensitive issue. There are many who still believe that it is not secure to provide their information to an online shop. Moreover, people are mostly afraid to enter their credit card information.

In the Baltic countries, security issues are one of the biggest obstacles for electronic commerce. Therefore electronic commerce companies have to explain what security tools are used and why customers can feel secure while buying online.

List of guidelines for security by Nielsen Norman Group (2001):

- **Secure connections.** Information about security precautions has to be in a prominent place. Moreover, it is necessary to explain security precautions in plain language and avoid technical jargon.
- **Alternative methods of ordering.** A person's comfort with buying online depends heavily on recommendations and warnings from others. Many people are more likely to fax or phone in their order when they order from an unknown company.
- **Privacy policy.** Company's commitment to the privacy of its customers has to be clear. It is important to let customers be in control of their data and give customers a complete overview of the information required in registration forms.

5. CONCLUSIONS

The desire of companies to adopt electronic commerce is influenced by the potential to create business value and receive potential benefits. However, not all companies manage to implement successful electronic commerce solutions. To maximize the potential of electronic commerce, companies must be aware of the success factors.

Based on the literature review and IS success models, the success factors of electronic commerce were considered under four groups, as follows: System quality factors, Information quality factors, Service quality factors, Attractiveness and design factors.

System quality tends to measure the functionality of a website. In measuring this functionality, it involves the critical evaluation of the website's usability, availability and response time. Selected variables for measuring System quality included Usability, Search and navigation, Security, Payment methods and buying process, Multi-media capability.

Information quality has a major impact on online customer. Customers are highly affected with the features and accuracy of the information. Variables used to measure Information quality: Relevant information to the customer, Accurate information, Personalization, Complete products / services descriptions, Regular update of the content.

Service quality is considered a crucial part of the electronic commerce system. It is through the aspect of service quality that customers must be assured of a secured as well as a legal website. The Service quality factor group included Customer service responsiveness, Empathy, Following-up service, Trust, Customer relationship management (CRM).

Finally, the attractiveness of the website also influences the perception of customers towards the company. The measurement variables of Attractiveness and design were: Website design, Playfulness, Branding, Entertainment, Interactivity.

Using the theoretical framework a survey was created. Survey respondents were asked to rate success factors of e-commerce on a scale from 1 (lowest impact or least important) to 5 (highest impact or most important).

The sampling procedure was used to identify the target organizations for the survey. The target organizations were Baltic companies that have already implemented electronic commerce. The invitations to visit online survey and to rate success factors of e-commerce were sent to 199 Baltic companies. The survey was answered by 52 respondents representing a response rate of 26.13%. Most of the respondents were from Lithuania (44,23%) and Latvia (34,62%), because there were more e-shops selected from these countries – Lithuania (77 e-shops) and Latvia (75 e-shops). Estonia accounted for 21,15% of the whole responses.

The respondents represented a broad coverage of business categories, which indicates that the survey results can be used to explain electronic commerce success factors across different types of industries. Most of the respondents were from Books, Music & Film (15,38%), Travel & Tickets (13,46%) and Computers (11,54%) business categories. Moreover, the survey results are similar with the results of Eurostat research done in 2005. According to Eurostat, books and travel are the most frequent online purchases among private individuals in Europe. This shows that the survey results are valid.

Results of the research show that the most important factors for successful e-commerce in the Baltic States are: Usability, Trust, Complete products/services descriptions, Customer service responsiveness and Security. These factors were identified by companies that have already implemented electronic commerce and have experience in the field.

According to research results, the most important factor of e-commerce is usability. Companies involved in electronic commerce should consider usability testing of their websites. Moreover, usability testing is the most immediate and effective way to determine whether a website is meeting business objectives and it works towards creating a successful user experience.

All five success factors, which were identified as the most important by survey respondents are closely related and can be linked together. For example, website usability, customer service and security can help to build customer trust. Moreover, sufficient product description can increase website usability. Therefore, website developers and managers should consider all success factors and combine them together.

Moreover, this paper has provided effective guidelines for achieving business success in electronic commerce. The guidelines were concentrated on the most important success factors of electronic commerce identified by the research. Those guidelines were based on Nielsen Norman Group (2001) research called E-commerce User Experience.

A future research could be focused on a specific industry implementing electronic commerce. This kind of research would identify specific success factors of particular industry. Moreover, another research could investigate success factors from organization strategy points and include more business and managerial factors.

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ANNEXES

Annex No. 1. Questionnaire

Country: _____

Business category: _____

System quality factors

Clear navigation	①	②	③	④	⑤
Security	①	②	③	④	⑤
Range of payment methods	①	②	③	④	⑤
Precise operation	①	②	③	④	⑤
Responsiveness	①	②	③	④	⑤

Information quality factors

Relevant information to the customer	①	②	③	④	⑤
Accurate information	①	②	③	④	⑤
Customized information presentation	①	②	③	④	⑤
Complete products/services descriptions	①	②	③	④	⑤
Regular update of the content	①	②	③	④	⑤

Service quality factors

Quick responsiveness	①	②	③	④	⑤
Empathy	①	②	③	④	⑤
Following-up service	①	②	③	④	⑤
Trust	①	②	③	④	⑤
Customer relationship management	①	②	③	④	⑤

Attractiveness factors

Web site design	①	②	③	④	⑤
Playfulness	①	②	③	④	⑤
Excitement	①	②	③	④	⑤
Entertainment	①	②	③	④	⑤
Interactivity	①	②	③	④	⑤

Annex No. 2. Online questionnaire screenshot (www.e-baltic.info)

SUCCESS FACTORS OF ELECTRONIC COMMERCE IN THE BALTIC STATES

HOME ABOUT THE THESIS SURVEY

Survey

Please take a minute to complete the survey. If you want to be informed about the results of the research, leave your e-mail.

General Information

Country

Business category

E-mail (optional)

The list of electronic commerce success factors was developed from literature review. Your answer will help to establish the rank order of the success factors.

Please rate the success factors on a scale from 1 (lowest impact or least important) to 5 (highest impact or most important).

System quality factors	1	2	3	4	5
Usability (?)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Search and navigation (?)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Security (?)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Payment methods and buying process (?)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Multi-media capability (?)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Information quality factors	1	2	3	4	5
Relevant information to the customer (?)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Accurate information (?)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Personalization (?)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Complete products/services descriptions (?)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Regular update of the content (?)	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

Done