

Differentiation of Electronic and Mobile Business Aspects

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Abstract. Rapid developments in mobile networks and wireless information systems nowadays are researched and adopted. Innovative business models are continually performing and could become a major benchmark in the electronic business field. Understanding them and attempting to design them are important issues. The differentiation of mobile business aspects from electronic business dimensions are a set of the parameters that set mobile business services to leading positions. One of the biggest partitive attribute between electronic mobile business applications is the working options of the user. Electronic business environment constrains the user work at the stationary position. Mobile business applications allow the user work in total mobility conditions. Also new network based options can handle many of the services features, which can add value to mobile business services. Mobile business is the result of the electronic business and information technologies evolution. For the value adding, mobile business services should take real advantage of electronic business services, with the opportunities creating, configuring, integrating, upgrading, troubleshooting, and maintaining new business models. A variety of mobile business service offerings that could take advantage of electronic business are presented. A treatment is suggested to add value and differentiate mobile business services, so that they continue to remain profitable.

Keywords: Electronic business, mobile business, mobile business application

1. Introduction

Changes in economic relations are more and more influenced by information technology. This phenomenon is being observed on the global, European and Lithuanian levels. Concepts and phenomena, such as digital economy, e-commerce, work in a virtual team, emerge. Number of companies and people, actively working in cyberspace, constantly grows. It is generally recognized that the development of electronic business is very important for the national economy - e-business helps to reach wider markets and a larger customer base. Therefore, economic growth of each country is related to how effectively business will master the cyberspace. Due to also rapidly developing information technology and telecommunications, arises the key global information technology challenges - mobility and security. Consumer lifestyle is becoming more and more mobile. All this has led to the new demands - to be able to receive and transmit information, perform business functions not only from a fixed workplace or home, but also while traveling, being far away from work or place of residence. This has led to the emergence of the mobile information and communications technology (MICT). Increasingly accelerating global changes has led to that that mobile audio transmission is not enough, there is a need to perform business functions from any location. This has resulted in emergence and development of the m-business as a separate e-business direction.

The article aims to conduct a comparative analysis of the electronic and mobile business. The object of research - electronic and mobile business. Research methods - literature analysis and generalization.

2. Analysis of the electronic and mobile business concepts

Emergence of the information and communications technology (ICT) has changed not only the way people live, culture, but also companies and the way they function. Technological development is becoming increasingly faster and the time interval between revolutionary discoveries becomes shorter (Davidavičienė, 2012). Nowadays information system becomes an organic part of any company (Paliulis, 2009). The rapid development of information and communications technology (ICT), globalization, changes in the political environment, development of the knowledge economy and other factors have a significant impact on business. At the same time the modern user expects that his needs will be met without delay. Exactly that has been one of the major conditions for the emergence of electronic business. The most important e-business advantage over traditional is the service speed, its flexibility when

responding to changes. E-business is becoming the driving force of the information and communications sector. The internet and modern technologies help to improve the processes of the traditional business. This is being done by transferring normal business operations to the internet network and automating them. Currently, more and more organizations are trying to move away from traditional trade methods to electronic, increasingly seek to transform their business into electronic and at the same time into mobile. Organization's presence in the internet and mobile space has become a question of its existence. E-business is moving into different areas: business, governmental institutions, non-commercial organizations and households. It is a tool and an opportunity to greatly increase the organization's efficiency (Damaskopoulos et al., 2015; Davidavičienė, 2011). Information technology made it possible for e-business to become much more open, i.e. easily accessible information. The internet is a source, the use of which can improve company's efficiency in all departments. It may help to find new customers, test products, find employees, conclude best transactions, find equipment, suppliers, etc.

Electronic business (e-business) concept appeared relatively recently but received a very high recognition, becoming a universal term used in the dictionaries of information technology, culture and business. However, there is no single commonly accepted definition of e-business. Electronic business is based on internet technology, which allows transforming the internal and external nature of the interactions. It should be noted that e-business covers areas such as e-commerce, business studies (collection of information about competitors, markets, consumers, etc.), customer relationship management, supply chain management, enterprise resource management (Davidavičienė, 2014). This new type of business is characterized by rapidly expanding possibilities, increasing competition and high consumer expectations. Businesses are changing their organizational structures and forms all over the globe. Many authors describe e-business differently. Herhausen D. (2015) states that e-business involves e-commerce and internal and external organization's applications, which form the modern business. In his opinion e-business is not just transactions of e-commerce; it's a new creation of old business models while using technology to maximize the business value. Bharadwaj A. (2013) states that e-business should be treated not only as an environment for purchase of goods or services, but also as a customer service, collaboration with business partners, electronic transaction management within the organization. Also e-commerce is defined as a business where ICT infrastructure is used to increase business efficiency and create a basis for the emergence of new products and

services (Zidianakis, 2014). For example, scientists define e-commerce as a business which in order to benefit itself and consumers, using the information management and business structure, develops, distributes or facilitates the use of products or services by firstly using electronic and other means (Raudeliūnienė, 2014).

After the analysis of scientific literature we can distinguish the main reasons that encourage companies to implement electronic and mobile business models:

- Globalization - geographical boundaries between markets disappear, number of competitors grows and diversity increases;
- Time-based competition - the ability to monitor the competition and quickly respond to the ever changing situation;
- Mobility based user needs - even though consumer demand is constantly changing, there is a possibility to quickly react to the changes and propose new solutions.

Company that uses ICT solutions gains a competitive advantage. Innovative ICT solutions ensure effective marketing, better sales results, faster customer service, more efficient operational planning, expenditure reduction, employee and customer communication nurturing, customer personalization, more intense search for personnel and wider search for new technologies and suppliers (Uturytė-Vrubliauskienė, 2012).

Many authors provide a simple structure of the mobile business profile, which they classify using the three main classes: technology, content and network (Brown, 2012; Preece, 2015).

However, the detailed analysis shows that these three classes are not enough. In order to define the full mobility map, and after the assessment of the structure model of the m-business environment, it is determined that it would be appropriate to add classes such as business regulation and consumer demand. The mobile business structure expands and creates preconditions for more efficient analysis of what makes the greatest impact on the emergence of the most suitable m-business application solutions. A conceptual structure of the mobile business model is created after the analysis of components and their connections.

Business users' needs, related to mobility, appear in the center of mobile business. In order to fulfill these needs, three essential and complementary elements are required: network (consisting of different subnets), technology (which includes all the necessary communication hardware, mobile devices and platforms) and content (consisting of application solutions, content and support services). These units are combined by regulatory and social environment.

These two values will be considered constants in the further research. On the developed model basis it is possible to examine the interrelations between all mobile business users, strengthen their co-operation, examine development opportunities and directions of the mobile business, strive for excellence, create effective operational procedures (including a strong and secure infrastructure), achieve effective and quick results, develop and improve model itself.

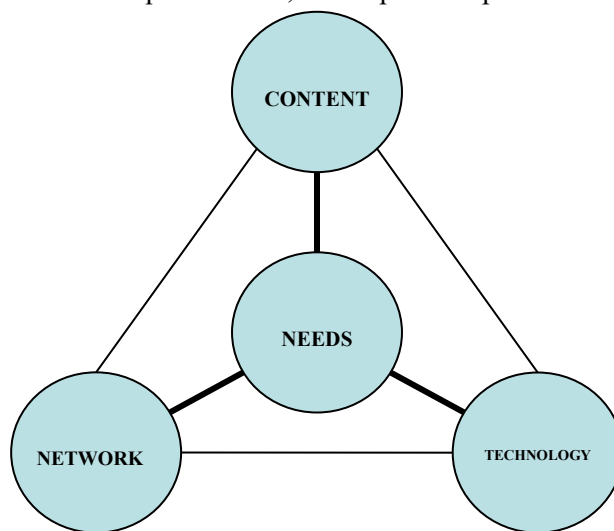


Fig. 1. M. business framework (created by authors)

The need to execute business functions from anywhere has led to the emergence and development of the mobile business. In the global business environment mobile business has emerged as new business platform, which determines creation opportunities of new products and services.

M-business is characterized by many market penetration trends of e-business. Installation environments of the m-business solutions, same as in e-business, are divided into four main groups according to the subjects involved in the m-business relations: business to consumer (B2C), business to business (B2B), business to employee (B2E) and business to government (B2G). M-business solutions in many ways are similar to the traditional e-business solutions, but new component is that it makes it possible to provide consumers with a broader range of personalized and "unattached to one location" solutions. Subjects involved in m-business relations have different interpretations on benefits of the m-business solutions. For users m-business solutions means convenience,

traders associate m-business with a large source of revenue, service providers view m-business as a unfilled market, from a viewpoint of the state - this is a productive connection with the public. With the help of MICT it is possible to get almost all the services as with ICT, but in this case, specific services require mobile devices and their potential, data communication protocols and network solutions are being used.

The m-business concept is quite broad and cannot be imparted in a single definition. Technological opportunities and scale are constantly changing; therefore it's hard to create a definition that would fully cover the evolving m-business. Sila I. (2013) considers that mobile business is a part of the electronic business, but even though many execution methods of the business processes are similar to the ones listed in the e-business category, MICT makes it possible to carry out those business processes anywhere and anytime. According to Chong A. (2013) m-commerce is characterized by the product acquisition functions via mobile phones, while m-business can be described in a broader definition, covering internal business processes and transaction management anywhere and anytime. Mobile commerce according to Turowski K. (2013) is defined as monetary operations which are performed using the mobile telecommunications. On the basis of this definition, the majority of authors believe that mobile commerce is a mobile business's subset, which is based on a wireless connection.

The environment of mobile business is characterized by a number of characteristics that are different from e-business (Jovarauskiene, 2015; Turowski, 2013). First of all it is characterized by greater convenience - mobile tool is easy to use, can be accessed by multiple users at the same time and accommodate a lot of information. Other benefits include availability: user receives real-time information and is able to communicate anywhere in the world. Mobile business can be described as use of MICT in order to survive, improve and develop the existing business processes and relationships, or to develop new business segments (Kim 2016).

Mobile business can cover all the factors, processes and actions that are implemented in accordance with MICT. Considering this aspect, mobile business can be defined as all types of business operations carried out using the MICT. Therefore, analysis of the e-business and m-business concepts leads to the conclusion that m-business can be defined as a part of the e-business.

At the same time it is possible to define the mobile information and communications technology. ICT is defined as information collection, processing, storage and dissemination techniques and methods, while mobile

information and communications technology is defined as information collection, processing, storage and dissemination techniques and methods at any point in space.

3. Mobile business characteristics

M-business is not only an extension of the e-business' opportunities into the environment of mobile equipment since its role would be quite limited. Detailed analysis can highlight these differences between the two applications (table 1).

Table 1. Basic difference between e and m-commerce, and e and m-business
(created by authors)

ELECTRONIC BUSINESS	MOBILE BUSINESS	ELECTRONIC COMMERCE	MOBILE COMMERCE
Transfer of the business functions to the WEB environment. Business productivity and efficiency-driven WEB and computer solutions. WEB and computer solutions that create new business models.	Transformation of the business functions into the mobile ones. MICT solutions for business efficiency and increase in productivity. MICT solutions that enable new business models.	WEB based solutions for trade and communication with consumers. Services supplied by using information technology and tools, exchanging electronic data messages via computer networks.	Sales and communication with consumers via mobile equipment. Services supplied to users via mobile phones and portable devices.

E-commerce solutions are implemented in the WEB network. Trade and communication with customers is implemented with the internet support. MICT realizes the possibility of all of these functions to be executed regardless of the stationary workplace. User can use services more flexibly than in the e-commerce environment. After the analysis of differences between the e-business and m-business it should be stressed that the e-business's success was based on a new business possibilities resulting from the execution of functions with the support of ICT (Kim 2016). New possibilities not only enabled the development of old business models, but also the development of new ones, based on the ICT possibilities. With the emergence of MICT it became possible to use the above-mentioned benefits without being tied to a particular point in space. MICT solutions created preconditions for the emergence of new business models.

It should be emphasized that virtually all e-business functions can be transferred to the mobile environment, while only a small number of emerging

m-business functions can be transferred to a stationary electronic media. M-business characteristics can be specified (Fig. 2) by detailing some of the functions based on MICT possibilities and aspects of the m-business environment. One of the m-business's advantages is the potential to provide new functions in the business aspect.

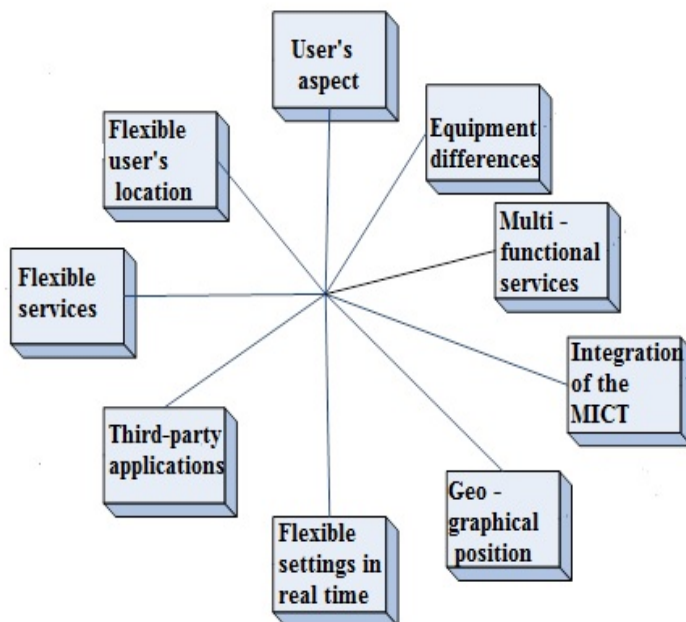


Fig. 2. The classification of particularities of mobile business applications (created by authors)

User's aspect. The main difference between the e-business and m-business is user's geographical location. User of the e-business usually has to be in the stationary workplace, in front of a personal computer, use the keyboard and other input means. In m-business, all of these aspects are replaced by total mobility, enabling use of technologies and solutions anywhere in space and at any time.

Equipment differences. The most radical description of this aspect would be possible by a comparison of equipment from different times. In the 1990 no one would have thought how the computer will look today. Modern technologies, according to the 1964 Moore's Law (Gordon Moore, one of "Intel" company's founders, who was the first to determine by empirical studies that the number of transistors in a crystal will increase twice every 24 months), still to this day a

new type of chip is invented every 18-24 months. This allows making an assumption about always mowing and growing gap between the newly emerging equipment (Paliulis, 2009).

Multifunctional services. Innovative mobile business solutions can be linked and adapted to the existing business processes. Business users get an opportunity to choose the time and the place to use certain services. Possibilities of the latest mobile information and communications technology and examples of successful MICT application help to determine what services are needed for the user. Based on them, an appropriate solution can be offered for a specific user (Wang, 2014).

Integration of the MICT solutions into the already installed systems in organizations. Organizations are able to transfer a number of operational functions to the mobile medium thanks to the solutions of the mobile information and communications technology. Most of the business functions before the emergence of MICT could have been carried out only by physical contact. Rapidly evolving MICT presents opportunities to perform functions efficiently and quickly.

Geographical position. M-business solutions are becoming available anywhere in the world. User's positioning service would allow offering customers personalized services that could be useful while user is at a specific location. This creates a new medium for providers and users of solutions of mobile information and communications technology.

Flexible settings in real time. Device and technology settings created for the users of electronic and mobile business are flexible, easily adaptable and modifiable according to the certain personalized user needs. Technological settings of the most e-business solutions have to be manually adjusted by the user, while personalized settings of the m-business solutions in the future should be installed automatically. Due to changing circumstances they are respectively set by the specific needs of users in real time, e.g., when users leave their workplace, settings of services, which are available in real time and in a real place, should automatically reconfigure for the specific equipment used by the users. There should be a possibility to use the corresponding options and easily change the settings if the user wishes to do so (Gao, 2014).

Third-party applications. MICT business solutions are based on technical requirements. Third-parties - e.g. network service providers, which provide network facilities or addresses for all m-business participants and protect their information until it is downloaded to the terminals of specific participants (Herhausen, 2015). Third Party Integration is a possibility to integrate

applications, technologies and desktop tools that already exist in the organization into the newly applied m-business solutions.

Flexible services. With streamlined integration of services, users will have a greater opportunity to use more and more interrelated spectrum of services and technologies (Chlivickas, 2009). Some m-business systems will offer a full service package, from which the user will be able to choose the required services and change those selections at any time. Many of the new m-business solutions will be easy to integrate into mobile networks and equipment, e.g. m-business solutions can be executed in a number of data transfer ways, such as SMS or smart data transmission applications. They can be implemented via conference bridges, network calls, video calls and many other services, e.g., Viber, Whatsapp messaging and information services.

Flexible user's location. The features of mobile business will help the user to work and perform daily tasks without being tied to a permanent location. The upcoming m-business era will bring more possibilities and encourage social changes. There will be more opportunities to work virtually; new ways of controlling such work will be developed. It will be possible to carry out job functions continuously, while traveling, when stuck at the airport, etc. Most of the job opportunity barriers should disappear over time.

Detailed analysis of the mobile business environment's exclusivity suggests that by extrapolating the already existing business approaches and paradigms towards new areas, it becomes possible to realistically assess the business prospects in the future. Although it can be said that today's business user is already satisfied with the existing technological possibilities, but we always need to think on how those possibilities can be used and expanded in the future. If the mobile business solutions would be seen not only as an expansion of the possibilities of electronic business, it will be possible to distinguish the benefits of differences in characteristics. "Components" of the main technologies used in e-business may differ from the ones used in the support of m-businesses.

4. Conclusions

Comparative analysis of the e- and m-business revealed the main structure elements of the electronic and mobile business and created preconditions to efficiently explore and compare differences and similarities of the electronic and mobile business. After the analysis of e-business components and their relationships, a conceptual e-business structure model was proposed, based on which it is possible to examine the mutual relations between all electronic business participants and distinguish the interaction models of involved subjects.

M-business environment was structured after the isolation of e-business components. In addition to the three m-business core classes, classified by many authors, it is proposed to add regulatory, social environment and business user needs classes.

Comparative analysis of the mobile and electronic business showed that m-business is characterized by many market penetration trends of the e-business. Analysis revealed the peculiarities of mobile business. It was determined that m-business is not only an extension of the e-business's technical feasibility. After detailed analysis it was concluded that virtually all e-business functions can be transferred to the mobile environment, while only a small number of emerging m-business functions can be transferred to a stationary electronic media. Functional structure, which covers various aspects of the m-business, was presented.

One of the main m-business advantages is that m-business solutions enable to provide new, in the aspect of business, functions. By detailing some of the functions based on the capabilities of mobile information and communications technology it is possible to specify the m-business's and its medium's difference from the e-business. While most business users are satisfied with existing e-business solutions, it will become impossible to compete in business if capabilities of the new m-business solutions will not be taken into account. In the course of technological progress more and more new technologies are applied in the m-business while the e-business technologies remain the same.

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