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Theoretical Framework of E-Business Competitiveness

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Abstract

One of the most significant trends in the past decades is the growing use of the Internet and communication technologies (ICT). Internet and associated technologies have a major impact on the way organizations conduct business. Internet technologies and e-business provide new opportunities for companies to compete in the global market and play a major role in the world's economy. Despite the significant studies in the field of e-business, it requires more comprehensive analysis in exploring e-business competitiveness and indicators which enable to measure e-business competitive capacities. The paper aims to develop a theoretical framework of e-business competitiveness. After analysis of e-business diversity, conceptual model illustrating the competitiveness of e-commerce as one of the most important activities of e-business is presented. This model includes four different but interrelated levels of analysis: company level, industry level, country level, and global level.

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Introduction

Internet technologies have been widely embraced by enterprises worldwide to conduct their business and improve performance (Cheng & Cheng, 2005). The term "e-business" was coined by IBM's marketing and Internet team in 1996 (Amor, 1999; Gerstner, 2002; Paliulis, 2007). According to Pilinkienė et al. (2013) e-business can be described as a set of processes and tools that allows companies to use internet-based information technologies to conduct business internally and externally.

E-business applications are considered to be an enabling mechanism that enhances organizational competencies, providing organizations new opportunities to deliver goods and services and adds value through improvements in

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supply chain efficiency and effectiveness (Troshani & Rao, 2007; Shin, 2001). E-business introduces new opportunities for organizations to compete in the global marketplace “enhancing the competitiveness of an organization by deploying innovative information and communications technology throughout an organization and beyond, through links to partners and customers” (Chaffey, 2007). E-business, especially electronic commerce, has the potential to radically alter economic activities and the social environment (OECD, 1999). Many companies are rethinking their businesses in terms of the Internet and its new culture and capabilities (Tallud, 2014), and integrate Internet technologies to redesign processes in ways that strengthen their competitive advantages (Phan, 2003).

The topics of e-business and competitiveness attract a lot of interest in scientific community and have been quite widely analyzed during the last decade. Different aspects of e-business have been analyzed by Amor (1999), Amit & Zott (2001), DTI (2000), Strauss & Frost (2001), Gatautis (2002), Gerstner (2002), Phan (2003), Auramo et al. (2005), Chaffey (2007), Šarapovas et al. (2005), Paliulis (2007), Gatautis (2008), Davidavičiene et al. (2009), Mikalajūnas & Pabedinskaitė (2010), *Elektroninio verslo vadovas* (2012), Mohapatra (2012) and others.

The concepts of competitive advantage and competitiveness have a long tradition in the strategic management scientific literature and still are in the focus of academic research works. Various aspects of competitiveness and factors affecting competitiveness were analyzed by Marčinskas & Diskienė (2001), Lippman & Rimmelt (2003), Mitkutė & Nagreckaitė (2005), Cheng & Cheng (2005), Troshani & Rao (2007), Beniušienė & Svirskienė (2008), Lietuvos ekonominės plėtros agentūra (2009), Navickas & Malakauskaitė (2010), Liučvaitienė & Peleckis (2011), Valodkienė & Snieška (2012), Čiurlytė & Pabedinskaitė (2013), Cetindamar & Kilitcioglu (2013), Pilinkiene et al. (2013).

Despite the significant studies conducted in the fields of e-business and competitiveness, it requires more comprehensive research in exploring e-business competitiveness and indicators which enable to measure e-business performance and competitive capacities at different levels of abstraction.

The purpose of the research is to develop a theoretical conceptual model illustrating the competitiveness of e-business. E-commerce as one the most important activities of e-business is selected for the modeling.

Research methodology is based on a comparative analysis and synthesis of scientific research works, modeling and graphical representation.

1. The importance and variety of e-business

Advanced information and communication technologies (ICT), together with new networking capabilities, allow small and large companies to communicate, transact and collaborate at lower cost and with greater ease and flexibility than ever before (OECD, 1999). E-business is related with the application of ICT and Internet to enhance different activities and processes of business.

All these processes according to Mohapatra (2012) can be grouped into three primary processes' groups: production processes (procurement, ordering and replenishment of stocks; payments; electronic links with suppliers; production control processes); customer-focused processes (promotion and marketing, processing of customers' purchase orders and payments, customer support); and internal management processes (employee services, training, internal information-sharing, video-conferencing, recruiting).

Summarizing the ideas of Amor (1999), Amit & Zott (2001), DTI (2000), Strauss & Frost (2001), Gerstner (2002), Auramo et al. (2005), Chaffey (2007), Šarapovas et al. (2005), Paliulis (2007), Davidavičiene et al. (2009), Mikalajūnas & Pabedinskaitė (2010), Paliulis & Sabaitytė, (2011), *Elektroninio verslo vadovas* (2012), Mohapatra (2012), the concept of e-business can be described as:

- an internal and external business processes automation within computer's network;
- an innovative IT application in the enterprise and beyond, in order to increase the competitiveness;
- an additional customer value through a computer-mediated network;
- a critical competitive strategy.

There are many categories of e-business based on various types of trading partners: business to consumer (B2C), consumer to business (C2B), consumer to consumer (C2C), business to business (B2B), government to citizen (G2C), citizen to government (C2G), government to government (G2G), exchange to exchange (E2E) and intra-

business (organization unit to organization unit) (OECD, 1999; Phan, 2003; Chaffey, 2007). E-business also includes many types of online activities. Based on the conducted analysis of scientific literature, the variety of e-business is provided in table 1.

Table 1. The variety of e-business

Categories of e-business based on type of trading partners								
B2C	C2B	C2C	B2B	G2C	C2G	G2G	E2E	OU2OU
Categories of e-business according to the type of activities								
E-commerce	Business intelligence	Supply chain management	Customer relationship management	Enterprise resource planning	E-marketing	E-services	E-recruitment	
Education	Communication	Entertainment	Health services	Other professional services	Publishing	Letter delivering	Financial services	

E-business solutions such as e-commerce, e-marketing, supply chain management, resource planning system, customer relationship management and others create diverse benefits for the business. DTI (2000) and Chaffey (2007) identify two main categories of drivers: cost/efficiency drivers and competitiveness drivers. The two main ways in why and how this can be achieved according to Chaffey (2007) are the following: potential for increased revenue arising from increased reach to a larger customer base and encouraging loyalty of existing customers; and cost reduction achieved through delivering services electronically.

Reviewing benefits, Chaffey (2007) identifies two types of benefits: tangible benefits and intangible benefits. Tangible benefits are related with increased sales and reduction of administrative, marketing and supply chain costs. Intangible benefits come out because of improved customer service, more rapid and more responsive marketing communications, better management of information, faster product development life cycle and thus faster response to customer needs. Adaptation of e-business contributes to improvement of customer, operational effectiveness, cost-minimization and profitability, and thus enhances competitiveness of the company.

2. The theoretical framework of e-business competitiveness

A fundamental goal for businesses is to develop means by which they can perform better than their competitors (Troshani & Rao, 2007). Competitiveness is being analyzed at different levels of abstraction. Navickas & Malakauskaitė (2010), Cheng & Cheng (2005) distinguish company level, sector level, and country level. Vanhaverbeke & Cloudt (2006) studying an open innovation phenomena emphasize individuals, organizations, dyads, organizational networks, and national/regional levels. Generally, competitiveness can be described as comparative social, economic, political, technological and other positions of companies, sectors and countries with regard to analogical units. It means entity's ability to sustain and strengthen its position in the market through improvement of key competences.

There can be found slightly different approaches to competitive advantage in scientific literature. According to Pilinkienė et al. (2013) theoretical approaches to competitive advantage may be segmented into industry focused approach, resource based view approach, and approach to competitive advantage developed by Porter. Porter (1985) argues that competitive advantage can be generated through a cost leadership and profitability. Resource based view focuses on the company's internal resources and capabilities with the reference to its external environment. One of the most important concerns of resource based view is to identify what resources and capabilities and their combinations are really creating competitive advantage in the company (Lippman & Rimmelt, 2003). Industry focused approach is based on the idea that competitiveness of the company in the market depends on the structure of surrounding environment and on the company's actions adapting to this environment.

Troshani & Rao (2007) emphasize two mainstream schools of thought that provide a theoretical foundation for competitive advantage, namely, the resource based view and the transaction cost theory. Cheng & Cheng (2005)

state that the improvement of key competences of the companies engaged in e-business has a positive impact on industry, and it, in turn, drives the national competitiveness.

Competitiveness of a country as the set of institutions, policies and factors that determine the level of productivity and set the level of prosperity of that country can be expressed by Global Competitiveness Index (GCI). Different components, each measuring a different aspect of competitiveness, are grouped into 12 pillars of competitiveness, namely, the following: institutions, infrastructure, macroeconomic environment, health and primary education, higher education and training, goods market efficiency, labor market efficiency, financial market development, technological readiness, market size, business sophistication, and innovation (Global Competitiveness Report, 2014-2015).

As one of the most important activities in e-business is e-commerce, we propose a conceptual theoretical model for e-commerce competitiveness analysis (see figure 1).

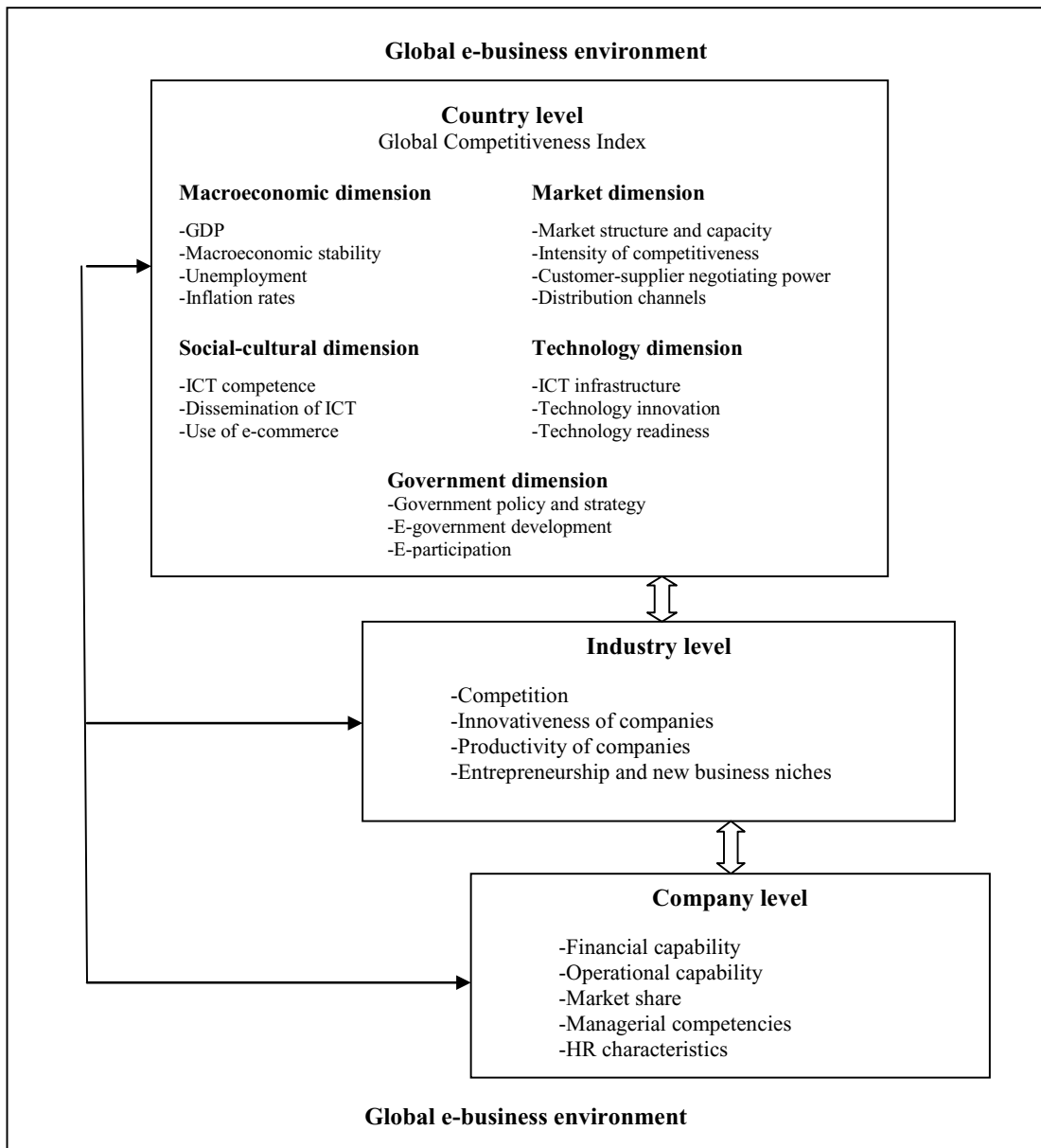


Fig. 1. The theoretical model of e-commerce competitiveness

The analysis of e-commerce competitiveness should take place at four different but interrelated levels: company level, industry level, country level, and global level.

Company competitiveness is very strongly affected by the general environment of e-business. According to our opinion, herewith the global competitiveness expressed by Global Competitiveness Index, there are five dimensions with different factors that play a major role for e-business competitiveness at country level. These are the following dimensions:

- 1) Market dimension (intensity of competitiveness, market structure and capacity, customer-supplier negotiating power, distribution channels).
- 2) Social-cultural dimension (dissemination of ICT, ICT competence, use of e-commerce).
- 3) Technology dimension (ICT infrastructure, technology innovation, and technology readiness).
- 4) Macroeconomic dimension (GDP, macroeconomic stability, unemployment, inflation rates).
- 5) Government dimension (government policy and strategy, e- government development, e-participation).

At a company level competitiveness can be expressed by financial and operational capability (sales, profit, costs, ICT investments, profitability indicators, lead time, productivity, and etc.), market share indicators, and managerial competencies. At industry level such fields of influence play an important role: competition in e-commerce sector, innovativeness of companies, productivity of companies, HR characteristics, and others.

The peculiarities of e-commerce change the traditional nature of competition. An open and potentially global in its nature e-commerce is rapidly expanding into a global market with an increasing number of customers and elimination of geographical and time barriers. Competition between companies overcomes national boundaries and becomes global.

Conclusions

By defining e-business concept authors emphasize the network as a basis for e-business and indicate e-business as a critical strategy for improving competitiveness and ensuring competitive advantage. E-business enhances different activities and processes of business: production processes; customer-focused processes, and internal management processes. E-business solutions such as e-commerce, e-marketing, supply chain management, resource planning system, customer relationship management and others create diverse tangible and intangible benefits for the business.

For the modeling e-commerce as one of the most important activities in e-business was selected. The presented conceptual theoretical model depicts competitiveness of e-commerce at four different but interrelated levels: company level, industry level, country level, and global international level. According to the authors' position, there are five main dimensions that play a major role for e-commerce competitiveness at country level in general: macroeconomic dimension, market dimension; social-cultural dimension; technology dimension; and government dimension.

The limitation of the research is that the presented model is designed for e-commerce competitiveness analysis. It does not cover all the activities and categories of e-business.

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