

USE OF ICT AND E-COMMERCE TOWARDS ACHIEVING COMPETITIVE ADVANTAGES

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ABSTRACT

The purpose of this article is to describe the use of ICT and E commerce in competitive advantage. E commerce is fundamentally changing the way in which business is conducting. E commerce and ICT both forces companies to find out new ways to expand their business market to attract and retain their customers. It discusses the role of technology innovation in competitive advantage, barriers for businesses(in developing countries) due to which they are unable to reach the level of achieving competitive advantage and their inability to add value in their businesses. It further explains the E commerce resources, technology leadership (cost and differentiation advantage) and competitive advantage and impact of internet on competitive forces in small medium enterprises. With the help of case studies and literature review the article finally depicts that both ICT and E commerce are used for achieving competitive advantage.

Keywords: Information and communication technology (ICT), E-commerce, competitive advantage (CA), small medium enterprises (SMEs).

INTRODUCTION

E commerce and use of ICT changes the economy and the way business is conducted. They force companies to find out new ways in which business can compete, attract and retain their business by providing them products and services according to their needs, and restructure their business strategies to deliver products and services more effectively and efficiently. By definition E commerce mean that use of information technology or innovative way to purchase, sale, advertise, distribute and after sale services of company products and services. According to Vladimir Zwass e-commerce is“... the sharing of business information, maintaining business relationships, and the conducting business transactions by means of telecommunications networks” E-commerce or e-business is based on the electronic processing and transmission of data, including text, sound, and video. [1]

Electronic commerce has existed for over 40 years, originating from the electronic transmission of messages during the Berlin airlift in 1948. From this, electronic data interchange (EDI) was the next stage of e-commerce development. In the 1960s a cooperative effort between industry groups produced a first attempt at common electronic data formats. The formats, however, were only for purchasing, transportation and finance data, and were used primarily for intra-industry transactions. It was not until the late 1970s that work began for national Electronic Data Interchange (EDI) standards, which developed well into the early 1990s. EDI is the electronic transfer of a standardized business transaction between a sender and receiver computer, over some kind of private network or value added network (VAN). [2] SMEs stand for small medium enterprises and enterprise can be defined as “any entity engaged in an economic activity, irrespective of its legal form”. [3]

LITERATURE REVIEW

Researchers (Restrict and Corner, 2010; Lin and Lin, 2006 and Melville et al., 2004) reveal that there is a growing support for the positive relationship between ICT and its advantages. Adeosun et al. (2009) simply describe ICT as working with computers. Kutlu and Özturan (2009), argue that ICT can be used to reduce cost, create innovations facilitate market niche and create strong connection with customers in small and medium enterprises (SMESs). (Ashrafi and Murtaza, 2008) was of the view that organizations around the globe using ICT not only for reducing their business cost and improving efficiency but also for providing best services to their customers. Adeosun et al. (2009) argued that the use of ICT enables strategic management, communication, collaboration, information access, decision making, data management and knowledge management in organizations. (Chowdhury and Wolf, 2003; Love et al., 2006) states that ICT helps to increase competitiveness of business and enhance performance through saving direct (labor cost) and indirect cost (reductions of firms input). According to Porter (2001): “Having a strategy is a matter of discipline It requires a strong focus on profitability rather than just growth, an ability to define a unique value proposition, and a willingness to make tough tradeoffs in choosing what not to do”. Fink and Disterer (2006) argue that ICT not only help organizations to become more efficient and effective but also help them to become competitive.

According to Porter (1980, 1985) a firm develops its business strategies in order to obtain competitive advantage over its competitors. It does this by responding to five primary forces: (1) the threat of new entrants, (2) rivalry among existing firms within an industry, (3) the threat of substitute products/services, (4) the bargaining power of suppliers, and (5) the bargaining power of buyers. The overall goal is to provide significant new insights into the development and implementation of e-business strategies that contribute to increased profit.

E-commerce as it is commonly known is the use of technology to conduct financial transactions online.[Karakaya and Stahl 1991; Porter 1980; 1985] was of the view that Proprietary technology is an example of a competitive advantage that is more important in E commerce and firms are spending more money on R&D are likely to develop proprietary technologies.[Razi, Tarn and Siddiqui 2004; Thornton and Marche 2003]states that Many e-commerce firms failed because they were unable to secure sufficient funds from either venture capitalist or generate the funds themselves. Despite rapid and sustained development of e-commerce, many companies doing e-business are still in the investment and brand-building phase and have yet to

make a profit (Zwass, 1998).By reducing customers' search costs, the Internet makes price comparison easy for customers, and thus increases price competition (Bakos, 1998).Day and Wensley (1988) define SCA as Potential sources of advantage are superior skills and superior resources and the assessing ways to achieve SCA includes both the competitor and customer perspectives. Barney, (1991) explain CA and SCA(sustainable competitive advantage) in his article “firm resources and sustainable competitive advantage” a firm is having a competitive advantage when it is implementing a valuable strategy which a current competitors is not implementing at the same time and a firm is having a sustainable competitive advantage when it is implementing a valuable strategy which a current competitors are not implementing at a same time and unable to imitate this strategy.

TECHNOLOGY INNOVATION AND COMPETITIVE ADVANTAGE

Competitor’s advantage can be established and manifested in the internet marketplace with the help of innovation and technological change. Technological change offers a way of understanding about why some companies lead and others choose to follow. The decision to become a technological leader or follower can be a way of achieving either low cost or differentiation, as illustrated in Table 1 There may be more than one technological leader in an Industry because of the many technologies involved and the different types of competitive advantage. Technological ‘followership’ is regarded as a conscious and active strategy in which a Firm explicitly chooses not to be the first to introduce innovations.

Table1: Technology Innovation and Competitive Advantage

	Technological leadership	Technological followership
Cost advantage	Pioneer in production of the lowest cost product design, be the first firm down the learning curve, for performing value activities find out a low cost ways	Lower the cost of products or value activities by learning from the leaders experience, R&D cost can be avoided through imitation
Differentiation	Pioneer in a unique products that increase buyer value, Create innovation in other activities to increase buyer value	Adopt the product or delivery system more closely to buyers needs by learning from the leaders experience

Source; porter (1985).p.181

According to Michael porter technological leadership is only desirable when first mover advantage exists. Porter identifies a number of different types of potential first-mover advantage.

REPUTATION

A first mover may be first to serve buyers and establish a loyal relationship with buyers, a firm that moves firstly may establish a reputation as pioneer or as a leader. The significance of this

reputation advantage from leadership depends upon the credibility and capacity of a firm to invest in marketing.

LEARNING CURVE

First movers begin down the learning curve first in effected activities and they may establish a double cost or differentiation advantage if it can keeps its learning proprietary.

FAVORABLE ACESS TO FACILITIES

A firm may get advantage in facilities for example a favorable deal with raw material suppliers eager for a new business.

INSTITUTIONAL BARRIERS

Due to first mover a firm may secure its intellectual property rights for example patents, or being first in a country may give a special status with government.

EARLY PROFITS

A first mover in technology innovation enjoyed early profits. It may be able to contract with buyers at high prices during early scarcity of a new item for example sell a product to buyers who value the firms new technology product very highly.

First mover advantage can also occur to those companies who enter firstly in a geographical area. But ICT and E commerce is in a sense where there are particularly no geographical boundaries; they enable a single website to make a commercial offer that is available throughout the world. Consumers accessing that website can place an order for product and services from their homes, offices. [4]

IMPACT OF INTERNET ON COMPETITIVE FORCES

The Internet also brings many more companies into competition with one another by expanding geographic markets (Porter 2001). Internet changes the basis of competition by altering products and services, the cost structure of firms (e.g., cost reductions in production, distribution, and transaction). It also changes the balance in relationship with buyer and seller because of the increase and decrease in switching cost of buyer and supplier. By reducing customers' search costs, the Internet makes price comparison easy for customers, and thus increases price competition (Bakos, 1998).

- The price competition resulting
- Lowered customer search cost
- Increase rivalry among existing competitors
- Shifts bargaining power to customers

The Internet creates new substitution threats by enabling new approaches to meeting customer Needs and performing business functions (Porter 2001). World Wide Web (WWW) produces

new promotion venues. Internet facilitates an electronic integration of the supply chain activities, achieving efficient distribution and delivery. [5]

As the number of internet users grew, social interaction between them also enhanced dramatically. The presence of social media website made it easier for them to stay connected with each other and share their thoughts electronically rather by meeting each other physically. People can search other people having the similar interests and goals on internet. [6]

CASE: THE MUSIC BUSINESS IN THE UNITED KINGDOM

UK has a large and international music industry, sales retail value in the UK Amounts to over £1 billion per annum and employment associated with the industry exceeds 48,000 in addition industry earns considerable income from licensing, mail order and record clubs account for 12% of the market in uk.uk consumers are the world’s greatest spenders on music In 1996, on average, they bought four albums per person compared to the European average of 2.3 albums, the US average of 3.9 albums and the global average of 0.8 albums per person.[7]

ICT DEVELOPMENT 2001-2013

Competition and the industry development are the 2 reasons for more innovation in ICT. Due to competitions not only the prices are effected (pushes down) but also it enables ICT suppliers to develop such type of products and services that make ICTs accessible and easy to use for the possible range of consumers. ICT helps for strengthening of business with the involvement of training and education. Business skills may be developed through vocational training of employees and other training programmers directed at improving the businesses of SMEs.[8] figure 1 shows the ICT development at global level during 2001-13 this figure shows that use of ICT is continuously growing throughout the world.

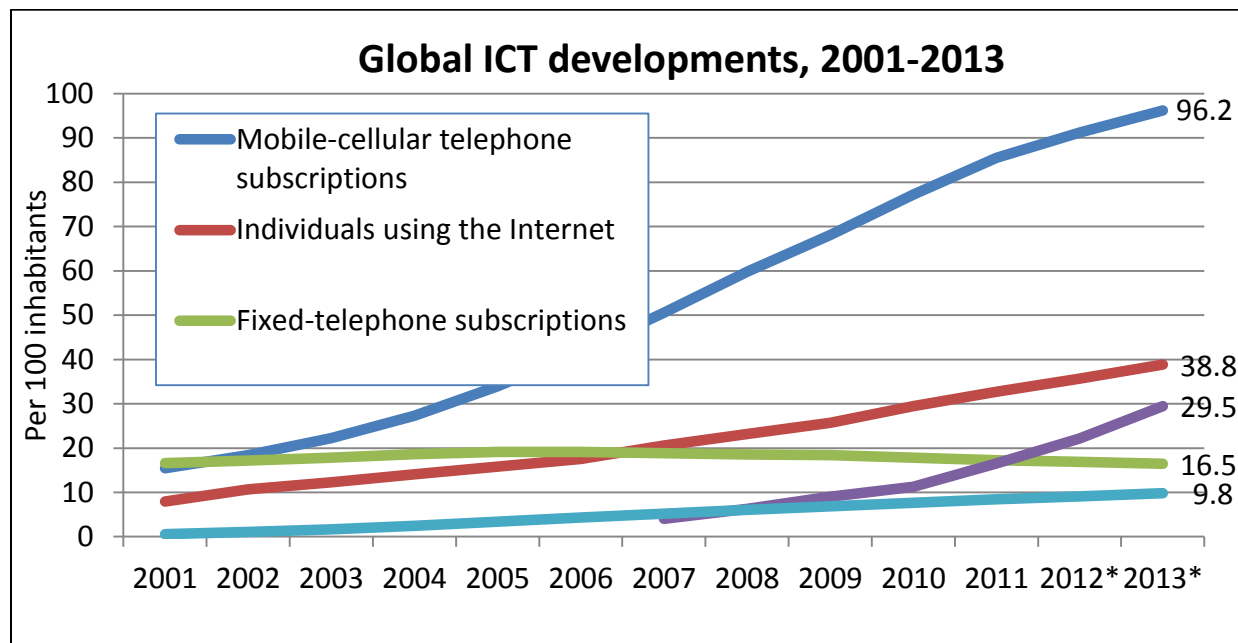


Figure1: (Source; ITU world telecommunication / ICT indicators database) [9]

CASE: COSTA RICA

ICT is playing a key role in the development of different sectors of economy. In Costa Rica, according to United Nations Economic Commission for Africa (UNECA), 1996, ICTs accounts for 38 percent of exports and contributed to a major increase in gross national income – and in India, software exports have been increasing by over 50 percent per annum since the early 1990s and it has been estimated that by 2010, there will be 2.2 million additional jobs created, and FDI will rise to US\$5 billion and that software will account for 7.5 percent of India's gross domestic product.[10]

CASE: MAURITIUS GOVERNMENT

Mauritius government has been active in the promotion of ICT in every socio economic sphere. Mauritius in 1990's was one of the first African countries who develop its national information technology strategy plan (NITSP) they form NITSP comprehensive and dynamic plan for the realization of their vision. They have the overall national vision of social and economic development in Mauritius. NITSP was developed as a part of Mauritius government's strategic objective to accelerate transformation into a nation where ICT will be fully exploited to improve business competitiveness and efficiency and effectiveness of civil service and encourage diffusion at national level to achieve information based economy [11]

BARRIERS TO ICT AND E COMMERCE IN DEVELOPING COUNTRIES

A survey conducted among Brazilian consumers indicated that the major hurdles in the adoption of technology includes

- Lack of Government regulations (privacy and security)
- Lack of business laws for e-commerce
- Inadequate legal protection for Internet purchases

Barriers mentioned in table 2 results low E commerce adoption rate among consumers and business. [12]

Table2; Barriers to ICT and Ecommerce in developing countries

Barriers	Consumer level	Business level
Economic barriers	Lack of purchasing power, unavailability of credit cards	Unavailability of ICT, lack of EOS (economies of scales), underdeveloped financial system
Political barriers	Lack of legal protection for online purchasing, Treated ICT as a luxury item(impose import duties, value added and sales taxes)	Lack of DES law (digital and electronic signature)

cognitive barriers	Computer illiteracy Lack of English language skills Lack of trust on service providers	Lack of knowledge to use ICTs Lack of workforce in technology expertise High degree of risk aversion
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SMEs AND TECHNOLOGY IN DEVELOPING COUNTRIES

Benefits of ICT for SMEs

Selwyn (2002) states that Information and Communication Technology is a term including a wide range of technological applications; digital broadcast technologies; telecommunications technologies as well as electronic information resources. SMEs face numerous barriers and obstacles that complicate the adoption of ICT. Successful ICT adoption and implementation rely on both socio-economic and technological issues; these issues can be based on internal or/and external factors (Arendt, 2008; Modimogale, 2008; MacGregor, Vrazalic, Carlsson, Bunker, & Magnusson, 2002).

E commerce resources

- E-commerce infrastructure
- Technology know how
- High learning curve

Lack of these resources is the major barriers in the development of SMEs. These barriers are may be due to the fact that much E commerce is still new to many of the E commerce executives.

CASE: SOUTH AFRICAN SMEs

South Africa is a developing country going through a growth period where exploiting different technologies holds huge benefits for the country. SMEs have the ability to obtain a large advantage through using emerging ICT technologies, such as internet and mobility (Balocco, Mogre, & Toletti, 2009).a research was conducting in south Africa in 2011 and find out some critical barriers for the development of ICT.

Critical barriers in South Africa

- Lack of awareness about the benefits of ICT
- Employees IT skill level is too low
- Employee’s satisfaction with traditional technologies
- Security concerns
- ICT too expensive

Perceived value through ICT adoption

- Customer satisfaction increased
- Quality of service improved due to ICT, Turnaround time has improved
- Business processes are more efficient, tasks are performed more quickly
- The organization has become more marketable
- The organization has become more effective since the adoption of ICT

The research concluded that South Africans SMEs experience critical barrier to use ICT in enterprise. It was proven that the barriers to ICT do not only affect the adoption and use but also have a negative effect on the value that a business can gain by adopting ICT. [13]

CASE: INDIAN GARMENT INDUSTRY AND IMPACT OF ICT ON EXPORT PERFORMANCE

Relationship between use of ICT and export performance in India shows a global trends towards a changing in value chain. Use of ICT in designing and marketing activities increases the competitiveness of Indian garment industry, through the use of ICTs they enable

- To provide possible opportunities to advance labor intensive industries
- remain competitive in international markets

So SMEs are perceived as an engine of growth in developing countries but they face a formidable task, surviving and competing in a global market. [14]

Figure 2 is describing the trend of internet users per 100 inhabitants throughout the world, developed and developing nations. Internet users are also going to increase with the passage of time (2001-2011) in developing nations due to globalizations. People changing their trend and they are not struck on a same product and need some definite changes as time passes. One of the greatest examples is of Google search engine. Google was evolved by two doctoral scholars in the last decade of last century. According to Larry Page (one of the founders of Google) has once said in an interview that according to human psychology of getting bored of one thing quite quickly, therefore, Google is committed to provide best possible facilities and environment to their users and employees. Therefore, Google has gone through many changes since its inception. [15]

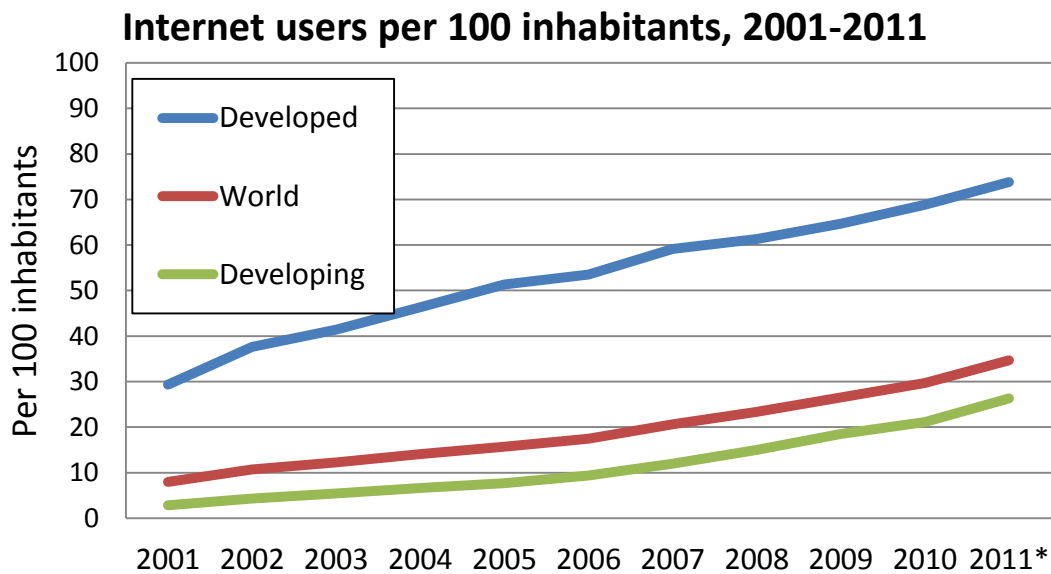


Figure2 (Source; ITU world telecommunication / ICT indicators database) [16]

CASE: BUSINESS DEVELOPMENT DEPARTMENT THAILAND

Thailand department of business development (DBD) encourage SMES operators to look new opportunities through E commerce, they introduced DBD registration process for the security of online shopping. Deputy Minister of Commerce Siriwat Kajornprasart revealed that he has assigned the DBD to support Thai SMEs in doing business through E commerce. Due to the high growth of E commerce he said that Thai SMEs should expanding their business online and at the same time should reduce their production cost. So technology (E commerce) can also help the Thai SMEs to compete in international market. [17]

CONCLUSION

It finally concluded that the relationship between buyers and sellers are changed due to the introduction of technology. The development of various types of technology depends upon the resources in the particular country. E commerce and ICT can also helps the companies to enhance their potential to grow in international market. SMEs in developing countries lack the necessary capacity or awareness to take full advantage of ICT and E commerce, much of the support to E commerce depends upon right infrastructure, regulations and the policy mix allowing E commerce to thrive. To securing the economic benefits of E commerce and ICT it's necessary to make sure that the enterprises are having the set of skills and capability to use relevant technology. Many entrepreneurs in developing countries lack the necessary capacity or awareness to take the full advantage of technology. Competitor's advantage can be established and manifested in the internet marketplace with the help of innovation and technological change. Further this research paper concludes that economic, political and cognitive factors are important for growth in developing world.

People, who change after change, survive. People, who change with change, succeed, but the people who cause for change, always lead." (Unknown)

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