Faculty of Economics, University of Niš, 13 October 2016

International Scientific Conference

THE PRIORITY DIRECTIONS OF NATIONAL ECONOMY DEVELOPMENT

EVALUATION OF STRATEGIC POTENTIAL FOR ELECTRONIC BUSINESS IMPLEMENTATION

Slavoljub Milovanović*

Aleksandra Stoiljković Ranđelović•

Abstract: *Before an organization undertakes specific projects related to the implementation of electronic business (e-business), it should analyze the strategic and market potential of e-business. In the analysis of strategic potential (resources), the following methods are used: SWOT method, value chain analysis, critical success factors method and return on investment method. Managers who implement e-business strategy have to decide whether to use new technologies to expand the business into new markets and for new products. Executives have four options: market penetration, market development, product development and diversification. Therefore, this paper is dedicated to the methods used for the analysis of strategic potential of e-business and strategic options for the e-business implementation.*

Keywords: *E-business, business strategy, strategic evaluation of e-business, e-business strategy implementation*

1. Introduction

Each company has to define business goals. Larger organizations formulate business strategies in order to reach these goals, and develop and implement business systems that can improve their business in accordance with these goals. A large number of strategic models has been proposed by scientists in today's internet era. Organizations wishing to conduct business by using electronic means must embrace strategies that will suit their needs and develop adequate systems of electronic business. (Wasko et al., 2011, 645-652)

Electronic business represents the use of information and communication technologies in the management of a wide range of internal business processes, as well as in maintaining the connection of these processes with external business partners. When management of an organization plans to develop and deploy e-business, it has to answer

* University of Niš, Faculty of Economics, Serbia, ✉ smilovan@eknfak.ni.ac.rs

• Ph.D. student, University of Niš, Faculty of Economics, Serbia,
✉ aleksandras.randjelovic@gmail.com

UDC 004.738.5:339

two main questions: how to develop a strategy, that contains integrated use of technology based on the Internet in itself and what are the practical problems related to the initiation and maintenance of electronic business?

Strategic planning is used to formulate business goals of companies and the main directions of implementation of these objectives. Formulating a business strategy has a special role and importance in today's global competitive environment, which is characterized by high dynamics and turbulence. If we add companies' performances electronic, internet markets to this, we can then conclude that there are special challenges for companies' top executives when it comes to strategic management of e-business. Management has to pay special attention when formulating strategies of company's e-business in order to find the best model that provides a competitive advantage for the company.

Since the strategy is formulated based on the vision and objectives, it is necessary to review them frequently, revise and possibly change them. Defining and communicating, as well as publishing strategic objectives is a major element of any strategic planning process. Formulation of the strategy and its implementation elements must be focused on how to achieve those goals, and the global success of e-business strategies will be assessed by comparing actual results versus goals and taking action for strategy improvement. It should be noted that setting goals usually occurs in parallel with the strategic analysis and strategy formulation in an iterative process. (Yoo, Choudhary, Tridas 2011, 145-170)

The implementation of e-business strategy encompasses the construction of e-business infrastructure, e-business applications development, necessary organizational changes and potential reconstruction of the company. When the company analyzes the strategic potential of e-business, chooses an appropriate business model and market option, and develops the overall strategy, it may begin with the implementation of e-business. The project team makes a list of initiatives for e-business projects, which the team could eventually set up to implement. The subject of this research is not the implementation of e-business in this sense, but presenting different approaches and methods for analyzing the strategic potential of e-business, choosing the appropriate business model and market options, and preparing for implementation of e-business. Defining new approaches and methods is an essential prerequisite for a well formulated e-business strategy and for its successful implementation, so due attention to this problem is given here.

2. Strategic analysis of the e-business potential

Several methods have been developed for the analysis of strategic potential of e-business. These methods allow managers to improve strategies, objectives and plans for the implementation of e-business. Here are the different methods that are based on SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis, value chain (the Value Chain), critical success factors (CSF - Critical Success Factors) and return on investment (ROI - Return-on-Investment). (Bocij et al., 2003)

SWOT analysis. This analysis involves the company's management asking a number of questions and the analysis of responses. There are two stages of SWOT analysis, the first of which focuses on the company itself and its strengths and weaknesses. This stage involves the answers to the following questions:

- What are the internal capabilities of the company?
- What resources are available internally (this includes products, services, skills, experience, motivation, relationships, culture, attitudes and operational effectiveness)?
- To what extent is the company ready for changes?
- What are the levels of research and development? Are new products and markets being explored? Were previous researches successful?
- What is the current information and communication infrastructure of the company?
- What is the current knowledge management infrastructure?
- What is the current value chain infrastructure (suppliers, partners, etc.)?
- Are there legal issues that need to be considered?
- What are the current needs of customers?
- What kind of a relationship does the company have with its customers?

The second phase of the SWOT analysis is focused on external factors and refers to the dangers or threats that come from the environment, and the opportunities or chances that presented themselves to the company, as a result of changes in the environment. This phase poses the following questions:

- What are the old and the new competitors doing?
- What are the strengths and weaknesses of current and potential competitors in terms of products, services, marketing, and finances and expertize?
- What are the specific new industrial and general economic trends?
- Is there a possibility to increase the market share or the overall size of the market?
- Is there a possibility for the company to extend the lifespan of its strategically important products, by using means of research and development?
- What is the best practice in the appropriate industry?
- What are the options for replacing products and services entering the market?
- What are the possibilities for the improvement of relations with existing customers and the creation of new relationships with potential customers?

The information gathered in this way, together with the mission of the company concerning electronic business, should provide the management team the tools they need to create the final strategy.

The value chain. Analysis of the value chain, proposed by Michael Porter (Porter 1985), includes the assessment of the value that is added at each stage of the chain and assessing how electronic commerce will affect it. Questions to ask here are:

- Does the company have any benefits from taking over parts of the value chain, such as delivery of orders?
- Will a competitive backlog take place, if another company undertakes the above mentioned action(s)?
- Will customers benefit from a reduction in number of entities with which they have to work, for example, at the order processing stage?
- Does the company have the skills necessary for taking over some parts of the supply chain?
- Can the company offer additional services to customers?

- Can the company create a new customer segment for its products, can it attract the customers who belong to a different market (e.g., attracting young customers for insurance services)?
- Is it possible to increase the customer base by means of advertising or by providing additional products?
- Will the company experience a competitive disadvantage (backlog) if another company takes over a part of the value by offering services?

Answers to these questions will allow management team to assess to what extent and whether it is worth investing in e-business and whether competitors can gain a competitive advantage if the company invests in e-commerce.

Critical Success Factors (CSF - Critical Success Factors). CSF represent aspects of the organization's activities which are of great importance to its business. Success in these areas is directly linked to the overall performance of the organization. Analysis of CSF is a good technique that is used for the interpretation of the most important aspects of business processes, technology and management skills that need attention in order to achieve the set goals. This technique evaluates the advantages and disadvantages of existing information systems and information needs of the said system. In this way the business needs of the company get associated with the needs of information systems. Critical success factors can be defined in the following hierarchical levels, whereby each higher level has an impact on the level below it:

- **Industry level.** All companies within one industry claim they have a similar CSF. For example, if there is a problem with the purchase of some raw materials, all companies that use raw materials will thereby be affected.
- **Organization level.** General business objectives of the company depend on the success in the critical areas of the organization. For example, the corresponding IT infrastructure is the CSF of the entire company and its deficiency reduces the ability of the company to achieve the strategic vision of e-business.
- **Business unit level (departments within the organization).** This is the level where specific, practical strategies are defined. The CSF at this level can be a marketing technique used by the marketing department, or control used by the IT department.
- **Management level.** The success of the company is directly related to management and leadership skills of its managers at the level of business units.

The CSF should be determined after adopting business or project objectives. First, critical success factors should be formulated for each of objective (we are taking the CSF industry into account), and then they should be consolidated for the entire project. Then the goals of the organization are used to determine the CSF at the level of business units and management level. Furthermore, a SWOT analysis of the existing information systems has to be done, in order to assess the current state of the CSF. For example, if the agreed critical success factor is a certain level of website interactivity, website SWOT analysis should indicate what level this factor is currently at. Examples of typical CSF for e-business include: top management engagement, customer relations, website quality, market competition, companies' information system integration with e-business applications, information and communication infrastructure, control of the security system. (Turban et al., 2006)

The results of CSF analysis can be used to develop plans for the implementation of e-business.

Return on investment (ROI - Return-on-Investment). ROI is the ratio between financial investments related to the project and realized profit (Singh, Waddell 2004). To assess the profitability of e-business initiatives, ROI is typically used in conjunction with other, intangible (non-financial) benefits. The techniques used to measure the return on investment must take into account the price of the hardware, software, personnel, procedures, etc., in relation to the total profits realized. Although the intangible benefits (customer satisfaction, improved cooperation with partners, a faster supply chain, etc.) are difficult to measure, they are of great importance and must be included in the analysis. One of the methods for measuring the ROI is Balanced Scorecard, which received its name because it balances between tangible (financial) and non-financial benefits. This method, developed by Kaplan and Norton (Kaplan, Norton, 1996, 75-85), is used to assess the success of the company in the following areas:

- ***Finances*** (measures such as revenue growth, productivity and resources).
- ***Customers*** (market share, retaining existing customers and winning new ones, increasing customer satisfaction, customer segments choice, etc.).
- ***Internal processes*** (innovation in products and services, operational efficiency, better supply chain management, etc.).
- ***Learning and development*** (these measures are related to human and cultural aspects in the organization, such as the improvement of company’s knowledge, the level of employee satisfaction, personal development and satisfaction of employees, etc.).

Measuring success in these areas is based on continuous collection of information about the performance and use of this information for the purposes of formulating or improving electronic business strategy. While measuring success, managers need to observe it from the aspect of customers and other business partners. They also have to take the competitive environment into account, when it comes to products and services.

3. Analysis of the e-business market potential

The main prerequisite for successful implementation of e-business strategy is to analyze the opportunities that come from new business models based on the Internet. Assessment of new model is important because if a company is not innovating, but its competitors or new players on the market are, then the company is losing a competitive match and hardly catches up with its competitors. Furthermore, if inadequate business models or distribution are selected, then the company may have significant losses. (Li, Du 2005)

The business model for e-business requires a market analysis from several different perspectives: Does the company operate in B2B or B2C market, or in a combination of these markets? How is the company positioned in the value chain between customers and suppliers? What values does the company offer and to which target customers? What are the specific business models that will generate different sources of income? What is the representation of the company in the physical and virtual world (e.g., a high presence in the physical sense, on-line presence only, a mediator, a combination of these approaches)? A large number of internet business models is explained in the third chapter.

Regarding the analysis of the business model there is a consideration of options that are created by disintermediation (elimination of intermediaries) and re-intermediation (introduction of new intermediaries) within the market. These are options that can be applied both on sales and on the cost side of the EC. These options demand the existence of tactics for conflict management among the channels, which may occur as a result of this restructuring.

On the sales side, the company can choose the following options: disintermediation (direct sales); the creation of new on-line broker; the formation of new on-line partnerships or partnerships with existing intermediaries; do not undertake any actions.

On the purchasing (procurement) side, there are the following options: 1. disintermediation (direct purchase, bypassing distributors); 2. procurement through new intermediaries, such as B2B exchanges; 3. do not undertake any actions.

Managers who implement the strategy of internet business must decide whether to use new technologies to expand the business into new markets and new products. Four options (Jovanović, Milovanovic 2010) are shown in Figure 1, in the context of doing business over the Internet:

Market penetration. Digital channels can be used to sell existing products to existing markets. Internet connection can help in consolidating or increasing market share by providing additional opportunities for promotion and the provision of services to customers in existing markets. Internet can also be used for retaining existing customers. This is a relatively conservative use of the Internet.

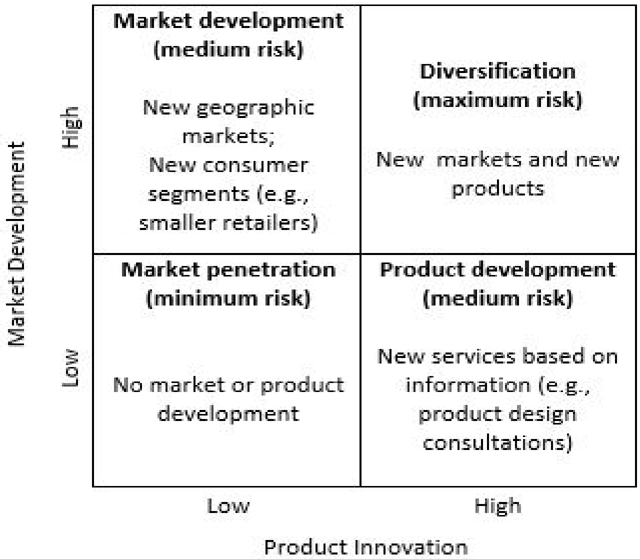
Market development. Internet is here used for the purpose of selling in new markets, because there is the advantage of lower costs for international advertising, without the necessity to maintain the sales infrastructure in countries around the world. This is a relatively conservative use of the Internet, but it is a great opportunity for small businesses to increase exports at a lower cost, if only they are able to overcome barriers that arise during export. Less obvious benefits of the Internet, except for selling the goods on new geographic markets, is to sell products to new segments of the market, as well as to different types of consumers. This sale can easily occur as a byproduct of having your own web site. For example, the company RS Components (www.rswww.com), supplier of different parts and materials for repair, maintenance and operations (MRO - Maintenance, Repair, Operations) points out that 10% of sales over the internet is generated by selling products to individual consumers, and not traditional business companies. Internet may offer other options for selling on market sub-segments that were not originally planned. For example, products that were intended for younger people can also be suitable for some older customers. (Singh, Waddell 2004)

Product development. New digital products or services can be developed so that they can be delivered via the Internet. These are typically information products, such as on-line shopping magazine "Construction Weekly". This magazine has been diversified into the B2B portal "Construction Plus" (www.constructionplus.com), which has new sources of revenue. This is an innovative use of the Internet. (Kogut 2003)

Diversification. This strategy implies the development of new products that are sold in new markets. For example, "Construction Plus" is now an international company, although it was previously only British.

The danger of diversification into new products is illustrated by the example of Amazon, who was known for not generating profits despite the sales of several billion dollars. In fact, Amazon initially realized its profits by selling books and a variety of digital content (records), and then started a strategy of product diversification and started selling toys, tools, electronics and kitchen equipment. This strategy has led to the problem of the high costs of promotion and logistics for the delivery of new products.

Figure 1: Strategic options for market development and product innovation



Companies can position their products in relation to the offer of the competition, relying on four main variables: product quality, service quality, price and time of order fulfillment. The strategic analysis should determine how the level of increase in product quality and service quality can be associated with the drop in prices and shortening of the order fulfillment time. In this sense, there are four strategic options for positioning the company on the on-line market. These options are built on existing strengths, but may use on-line possibilities for improving the position of the company. These features provide the following advantages for organizations:

- ***Product related advantage*** – Improving the position of the company by providing on-line product „customization".
- ***Price related advantage*** – Using the internet for offering favorable prices to loyal customers or reduction in prices when demand is low (e.g. British Midland Airlines uses auctions to sell tickets for flights with low demand level). (Bhardwaj 2013 653-656)
- ***Transaction related advantage*** – The website of Dabs.com company (www.dabs.com), which is in the electronic software retailing business, offers

transactional possibilities through a combination of price information with a dynamic product information, such as the number of products in stock, the number of ordered products, and when the delivery is expected to take place. (Steinfield, Markus, Rolf 2011, 75-108)

- ***Customer relations related advantage*** – This advantage stems from the personalization that allows customers to analyze the previous orders and to give instructions for new orders. Company RS Components (www.rswww.com), which generates this kind of advantage, is a typical example. (Subramanian, Peslak 2010, 130-138)

These positioning options are very similar to Porter's (Porter,1985) competitive strategies based on costs, differentiation, and product innovation. For a company to be competitive, it is necessary to combine the success and advantages in all of these areas.

4. Preparation for e-business implementation

When the company analyzes the strategic potential of e-commerce, chooses an appropriate business model and market option, it may begin with the implementation of e-business (Jovanović, Milovanovic 2010). However, before moving on to the implementation of e-business, management must determine some rules that are based on company's strategy, in order to ensure the maximum chances for success. This way, checks the business policy, as a preparation to meet the objectives of e-business. Companies that engage in e-commerce determine certain rules and policies that will serve as a sort of guide in business activities. A simple model of these rules is:

- *How to manage (operate)* – the way the company should manage its processes, to ensure they are unique and original compared to the competition. For example, company Del has a policy of rapid process reorganization which is based on the needs of its target customer segments. The rules must be set for all areas, such as customer relationship management, doing business with trading partners, the criteria used during the development of web applications, etc.
- *Border rules* – the rules that refer to the opportunities that should be followed, and the ones that should be rejected. For example, before Lego, a manufacturer of children's toys, starts producing a product, it uses the list of rules such as: Does the product have the Lego appearance? Does it have educational features? Will the parents buy it? Etc. This is a part of company's strategy to maintain its central vision and philosophy.
- *Priority rules* – criteria according to which priorities are assigned to activities. For example, company Intel has decided that its priority is the production of processors, and not memory chips, due to the large profits that could be achieved by selling the processors.
- *Time rules* – refer to the method of determining deadlines for the completion of the project. For example, a telecommunications company Nortel has a rule that the project must be completed within 18 months.
- *Completion rules* - rules that determine when the project is abandoned. For example, Otikon, a Danish company that produces hearing aids, stops the project if the key team member leaves the team to work on another project.

It is very important to have precise rules that correspond to the competitive environment, and that those rules are clear and optimal. Too many rules, or rules that are not flexible, can paralyze the activities of the company and discourage people. The rules must be reviewed after a certain period of time to ensure their suitability with current operations of the company. (O'Brien, Marakas 2011)

As part of the preparations for the introduction of e-business, the organization also needs to establish a policy in a number of areas. This policy is based on the basic business vision of the company. Some of the areas in which the introduction of business policies is needed are:

- ***Technology*** – The organization must establish clear rules for the introduction and utilization of its technology infrastructure.
- ***Security and privacy*** - Security is a critical factor for the jobs on the Internet and there are numerous techniques and technologies for providing security. The security system has to exist in order to ensure the privacy of user data. The organization must have a policy that will ensure that personal information is secure. A formal policy should dictate decisions, such as: the extent to which the flow of information should be limited, which technology is used for protection, how to solve the problems of endangering the security of the system, etc.
- ***Customer relations*** – We have already pointed out that the customer relationship management is an integral part of the e-business strategy. The following questions allow organizations to create initiatives related to e-business: How can we choose the most profitable customers? How can we increase the loyalty of our customers? How can we use our customers in a more productive way? How can we maintain our customer base? What is the way to attract new customers? In what way can we use the highest potential of our new customers?
- ***Risk management*** – Despite careful planning, there is always a risk of failure due to unexpected changes in the environment. Some of the factors that influence such changes are: low entry barriers for new companies into the market, low costs of customers' transition to other vendors (low switching costs), high consumer demand, rapid technological innovation, etc. Companies must use more of the already mentioned analytical methods to determine the rules of procedure in situations of uncertainty and unforeseen problems.
- ***Human resources*** – The following factors are of major importance for the survival of the company in the virtual world: expertise of company's employees, allocation of management responsibilities, access to knowledge, and so on.
- ***Business performance measurement*** - Finally, the company must have precise rules for performance measurement, through which it observes its success. Using techniques such as balanced scorecard, an organization can evaluate the effectiveness of its operations and technological systems, the level of customer satisfaction, financial success and learning speed.

Having assessed the potential offered by e-business and conducted proper preparation, the organization can launch its final phase, which is the implementation of e-business strategy. The project team makes a list of initiatives for e-business projects, in order to finally carry out the implementation. The implementation phase includes the construction of e-business infrastructure, e-business application development, the necessary organizational changes and the eventual reconstruction of the company. Furthermore, the organization should determine the current level of implementation of e-business, in order to plan the desired level, which will allow the company to achieve the defined strategic objectives of e-business.

5. Conclusion

Formulation of the strategy stands for the development of long-term plans, whereby the attention has to be paid to the dangers that exist and to the desired objectives, in order to provide the company with an advantage compared to its competitors. Formulating a strategy involves studying and redefining the mission of the company, analyzing the strengths and weaknesses of the company, creating development strategies and determining the main directions for the implementation of the strategy. There are numerous approaches to the formulation of the strategy and advice in achieving a competitive advantage. Formulating the strategy of e-business requires a combination of existing approaches and methods of business planning and strategy development of information systems. In addition to the elements of the traditional methods of strategic planning, innovative techniques must be incorporated in order to gain advantage over the competition. This innovative element of the strategy is, perhaps, the most difficult to achieve, since in practice there are relatively few examples of successful implementation of e-business strategy.

Strategic analysis of the potential e-business market and different market options is an important activity that precedes the realization and implementation of e-business strategy. Here we presented the most important methods used to assess the strategic potential of e-business (SWOT, value chain analysis, critical success factors and return on investment) and market options that organizations can choose between in the implementation of e-business (market penetration, market development, product development and diversification). In addition to that, we analyzed the preparatory activities that take place prior to the implementation of e-business, and that are related to the determination of certain rules and policies that will serve as a sort of guide in the implementation process.

References

1. Bhardwaj, A. (2013) Transforming business: Integrating ERP with E-business.*International Journal of Advanced Research in Computer Scinece and Software Engineering*, 3(7): 653-656.
2. Bocij, P., Chaffey, D., Greasley, A., Hickie, S. (2003) *Business Information Systems: Technology, Development and Management for the E-busines.* Harlow: Financial Times Prentice Hall.
3. Jovanović, R. Milovanović, S. (2010) Elektronsko poslovanje. Niš: Ekonomski fakultet u Nišu.
4. Kaplan, R.S., Norton, D.P. (1996) Using the Balanced Scorecard as a Strategic Management System, *Harvard Business Review*, January-February 1996: 75-85
5. Kogut, B. (2003) *The Global Internet Economy*, Cambridge, Massachusetts: The MIT Press.
6. Li, E. Y., Du, T. C. (ed.) (2005) *Advances in Electronic Business*, *Volume I.* Hershey: Idea Group Inc.

7. O'Brien, J. A., Marakas, G. M. (2011) *Management information systems.* New York: McGraw-Hill
8. Porter, M.E. (1985) *Competitive Advantage: Creating and Sustaining Superior Performance.*New York: Free Press.
9. Shin, N. (ed.) (2005) *Strategies for Generating E-Business Returns on Investment.* Hershey: Idea Group Inc.
10. Singh, M., Waddell, D. (ed.) (2004) *E-Business Innovation and Change Management.* Hershey: Idea Group Inc.
11. Steinfield, C. Markus, M. L., Rolf, T. W. (2011) T*Journal of Management Information Systems*, 28(2): 75-108.
12. Subramanian, G., Peslak, A.R. (2010) User perception differences in enterprise resource planning implementations.*Journal of Computer Information Systems*,50(3): 130-138.
13. Turban E., Leidner, D., McLean,E., Wetherbe, J. (2006) *Information Technology for Management: Transforming Organizations in the Digital Economy, 5th Edition*, New Jersey: Prentice Hall.
14. Wasko, M. Teigland, R., Leidner, D., Sirkka, J. (2011) S*MIS Quarterly*,35(3): 645-652.
15. Yoo, B. Choudhary, V., Tridas, M.(2011) A*Journal of Management Information Systems*, 28(2): 145-170.

OCENA STRATEGIJSKOG POTENCIJALA ZA IMPLEMENTACIJU ELEKTRONSKOG POSLOVANJA

Apstrakt: Pre nego što organizacija preduzme konkretne projekte vezane za implementaciju elektronskog poslovanja (e-poslovanje), treba da analizira strategijski i tržišni potencijal e-poslovanja. U analizi strategijskog potencijala, koriste se sledeće metode: SWOT metoda, analiza lanca vrednosti, metoda kritičnih faktora uspeha i metoda prinosa na investicije. Menadžeri koji implementiraju strategiju e-poslovanja moraju da odluče da li će koristiti nove tehnologije za ekspanziju poslovanja na nova tržišta i za nove proizvode. Pred rukovodiocima stoje četiri opcije: prodor na tržište, razvoj tržišta, razvoj proizvoda i diverzifikacija. Ovaj rad je upravo posvećen metodama za analizu strategijskog potencijala e-poslovanja i strategijskim opcijama za implementaciju e-poslovanja.

Ključne reči: E-business, business strategy, strategic evaluation of e-business, e-business strategy implementation