

## **USAGE OF THE AHP METHOD FOR EVALUATION OF E-COMMERCE TOOLS TO INCREASE THE COMPETENCE OF SME SPECIALISTS IN LATVIA**

**Ina Gudele**

### **ABSTRACT**

The use of e-commerce for sales and promotion of products and services has a positive influence on the development of any business. Statistical data show very low usage of e-commerce in the Latvian small and medium-sized business sector. The paper presents an analysis of reasons for low usage of e-commerce for business development in the SME sector and suggests the most effective methods for increasing entrepreneurs' competence in new technologies in the digital environment. A survey of SME management and the analytic hierarchy process method were used in an analysis of the best methods to improve the lack of knowledge in this sector and factors influencing decision-making for lifelong learning among specialists in the digital environment. The findings of the research show that electronic courses in the digital environment with interactive presentations and video files can have a positive impact in solving this problem. The research results reveal serious factors influencing the decision to study e-commerce: it is the policy of local and central governments and European Union institutions. The results of the research have practical significance in improving the situation with e-commerce usage for business development in the SME sector. The article contains recommendations for involved parties and institutions influencing the process of entrepreneurs' increase in competence to positively accelerate the economic situation. The study offers a new perspective on the use of e-commerce solutions.

**Keywords:** e-commerce tools, analytic hierarchy process, increase of competence, e-learning, entrepreneurs' skills, business development.

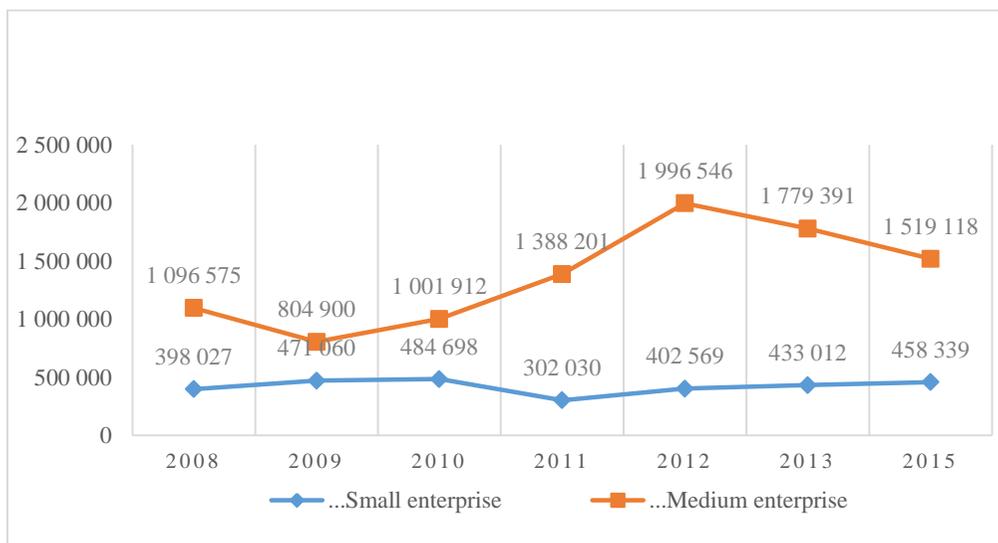
### **INTRODUCTION**

Usage of electronic commerce and different Internet tools for promotion and sales of products and services is not a new topic for discussion. Most entrepreneurs know and understand that the newest technologies and solutions can positively influence business development. Global statistical data show extreme growth in the amount of sales in the electronic environment; the number of companies "born in the web" continues to increase and they are succeeding in fields no one would have expected before. New types of e-business models and ways to communicate with customers and provide services are created every day; however, there are still many of companies in traditional business that do not use all of these new possibilities to increase their market share or enhance communication with existing and potential customers. The infrastructure for e-commerce usage in Europe is well developed and EU statistical data show that there are no technological obstacles to use all the benefits of e-commerce for business development. An analysis of EU statistical data regarding technological infrastructure and Internet access shows that Latvia is one of the leaders in development of infrastructure for the electronic environment: 82% of inhabitants of Latvia have Internet access and 79% use the Internet daily [1]. Latvia has the highest position in the ranking for Internet connectivity; in terms of broadband speed, it is a leader not just in the EU but also worldwide [2].

Consumers are adopting new technologies more quickly than ever and any company has the potential to use the benefits of the digital environment to develop business through new methods of communication with the target audience.

### DEFINITION OF THE PROBLEM

Analysing the development of the digital environment and studying the influence of e-commerce on the development of small and medium-sized enterprises in Latvia, the author noticed several problems. Latvia has an excellent infrastructure for development of the digital environment; it is one of the leaders in the EU and worldwide for broadband development with high user activity: 74% of Internet users in Latvia use e-commerce. But the situation in the commercial and public sectors is different. Companies in Latvia, including micro-enterprises, use the Internet for communication, receiving necessary information, and for different public and commercial electronic services. So 96.7% of all companies in Latvia use the Internet, but just 63.5% of them have their own websites in the digital environment and an even smaller proportion use the digital environment to promote products and services and sell them to partners or end users.



**Figure 1.** Amount of sales on the Internet in Latvia in the SME sector

*Source: Central Statistical Bureau of Latvia, 2015*

Turnover for this sector is very small, especially for small and micro-enterprises. Just 9.1% of small and 14.4% of medium-sized enterprises use e-commerce to sell products and services in the digital environment. In the author’s previous research (Gudele and Rivza, 2015), the main reasons for disuse of e-commerce in this sector were revealed. There are three main reasons: the lack of skills and knowledge about e-commerce, the lack of IT specialists for e-commerce usage and the lack of confidence in e-commerce and the financial security of data. Several researchers (Shalhoub and Al Casimi (2006), Archer (2016) and others) point out that infidelity can be solved with knowledge of the benefits of using e-commerce and the elimination of deficiencies.

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Paul (2017) indicated that the third main factor influencing usage of e-commerce at enterprises relates to improvement of security and level of knowledge of technology: “The education of consumers is likely to be as daunting as the technical hurdles and will take the resources of the major banking and credit card institutions as well as the continued efforts of e-vendors to achieve”.

To improve the situation in usage of e-commerce for business development in the SME sector the author offered a set of activities to make the management of companies more familiar and confident with work in the digital environment:

- Education of enterprises’ management and specialists via lifelong learning,
- Possibility to access study materials in the e-environment,
- Possibility to use the latest practice from global experience.

The market offers numerous possibilities for study and there are many options for acquiring knowledge about e-commerce, different e-commerce tools and methods and benefits. E-learning is the online delivery of information for purposes of education, training, or knowledge management (Turban *et al.*, 2011).

Management and specialists from the small and medium-sized business sector prefer the option to use distance learning because small companies do not have enough resources to replace specialists, and for this reason everyone has to work onsite (Gudele, 2016). Distant lifelong learning or e-learning offers the possibility to obtain new knowledge at the workplace (Alexander, 2006).

## **METHODOLOGY AND RESEARCH QUESTIONS**

**Research objective** – to analyse data from expert interviews and find out the best method for e-learning in order to organize studies for entrepreneurs in e-commerce usage for business development and to find factors influencing decisions to start studies.

During the research the author tried to find answers to two research questions.

**The first research question** was: What are the best materials and methods to study regarding e-commerce implementation at enterprises in the digital environment and to find the best solution for business development. As the Internet is used by most SME sector enterprises in Latvia, everyone has the opportunity to study. For some reason, the SME sector does not use this opportunity; therefore, it was necessary to find the factors influencing decisions to start studies. For the first research question, experts had to evaluate four different types of study materials used in the digital environment and compare them with each other, evaluating them on a scale of 1 to 9.

**The second research question** was: What are the main factors influencing entrepreneurs’ decisions to start using e-learning possibilities to increase knowledge of usage of technologies in business development. Experts had to evaluate four factors influencing the decision to increase the competence of specialists at enterprises and, additionally, study e-commerce using digital materials: the management’s own decision, specialists’ influence on management, local or central government-financed and organized courses, and EU policy and financing for training.

The author used logical analysis of literature sources, statistical data analysis and the analytic hierarchy process (AHP) method to find answers to the research questions. The AHP was utilized to evaluate structured factors more accurately by pairwise comparisons (Saaty and Peniwati, 2008) using the opinions of experts. This is a structured

technique for organizing and analysing complex decisions based on mathematics and psychology. It was developed by Thomas L. Saaty in the 1970s and has been extensively studied and refined since then. It has particular application in group decision-making and is used around the world in a wide variety of decision situations, in fields such as government, business, industry, healthcare, shipbuilding and education. The method for gathering primary data was expert interviews.

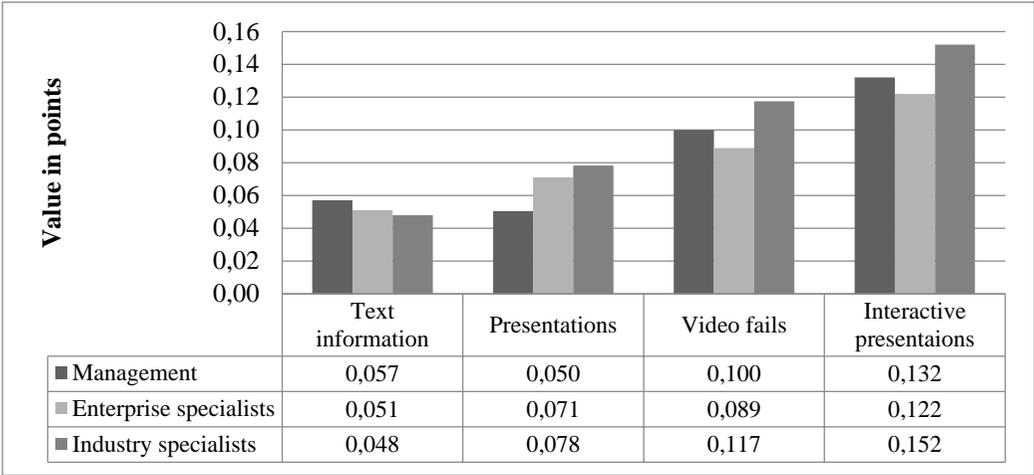
Nine experts from 3 different levels were asked to participate in interviews to evaluate e-learning methods and factors influencing decisions to learn about e-commerce usage.

- SME managers,
- specialists working at small or medium-sized enterprises,
- specialists from the e-commerce industry.

All experts evaluated the importance of given factors on a scale of 1 to 9, comparing them with each other depending on the research question, where 1 means no influence and 9 means very important, and calculation was done according to Saaty’s recommendations. This method is useful when it is necessary to compare several factors and evaluate the hierarchy of these factors.

**MAIN RESULTS OF THE RESEARCH**

The findings of previous research by Yoon (2016) show that the main factor in e-learning is content, not technologies or software; therefore, the author continued to explore the issue more deeply. During the interviews, specialists provided an evaluation for 4 types of e-learning materials that teach entrepreneurs about e-commerce usage for business development in the digital environment. Experts had four options for evaluation: simple text information, PowerPoint presentations slides, video files and interactive presentations including text, video and audio.

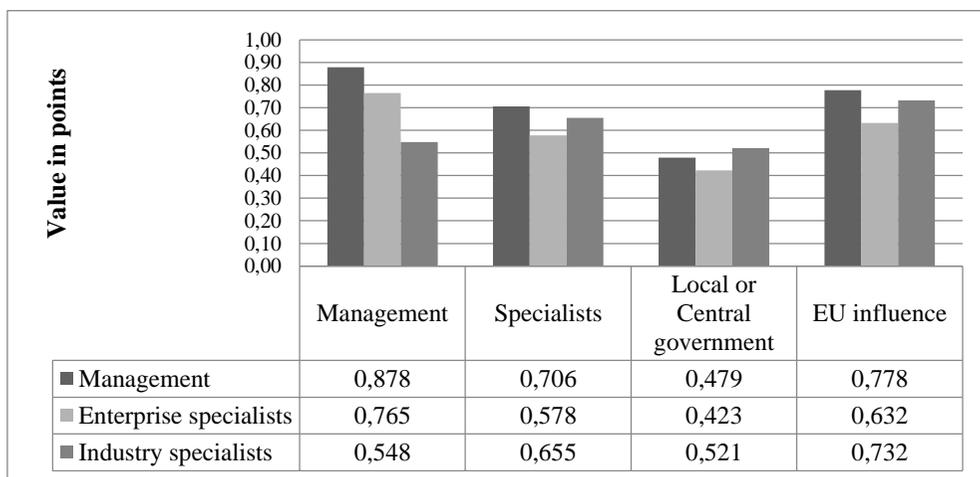


**Figure 2.** Most useful types of materials for distance learning  
*Source: created by the author, 2017*

Interactive presentations were considered as the most important and valuable materials by all 3 types of experts. The set of text, slides, video and sound received a medium evaluation of 0.135 points. Industry representatives, having better knowledge of the benefits of interactive tools, gave them the highest evaluation. The second most interesting method was considered to be materials presented in video slides, with an evaluation of 0.102 points. The least interesting for all experts was simple textual information, with an evaluation of just 0.052 points.

Interviews with representatives of four sectors were conducted to find answers to the second research question regarding the main factors influencing the decision to start learning about usage of e-commerce for business development:

- specialists of enterprises understand the lack of knowledge can influence management in learning about e-commerce and possibilities to improve internal and external processes in sales and communication with customers;
- management of enterprises can make decisions by themselves if they understand the necessity of knowledge;
- the local or central government is interested in the development of any company, especially a micro-enterprise, providing them with knowledge about the possibility of business development. They have the means to organize trainings for entrepreneurs to improve the business development environment. Any business development offers new job vacancies and provides additional tax revenue for the central or local budget;
- EU institutions influence this process with legislation, political programmes and financial means since they are interested in strong enterprises which are competitive on the global market.



**Figure 3.** Factors influencing e-commerce development at micro-enterprises  
*Source: data collected by the author, 2017*

The analysis of factors from the evaluation results presents the interesting fact that all three groups of experts evaluated the influence of EU institutions highly: the average

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value among all 9 experts was 0.714. This value reflects that EU institutions may influence the national business environment with policy and real support, through EU funds, of different educational projects and exchange of positive experience. All the experts suggested the leadership's role in decision-making with enterprise managers requiring information about possibilities to increase competence and to study new technologies in any industry sector. This evaluation had an average score of 0.73. Two other factors received a lower evaluation: 0.646 for specialists of companies, how they can influence management's decision to increase competence in e-commerce, and 0.474 for the influence of local and central government. Each of these factors reflects different interest in this process. Employees of companies were looking for company development to create a stable, competitive workplace with a good salary, while local and central government institutions were interested in business development processes to increase the number of jobs, improve the environment around enterprises, and increase tax revenue.

### **CONCLUSIONS AND RECOMMENDATIONS**

The author of the paper highlighted the main problems and challenges for SMEs in studying e-commerce possibilities for business development. It is possible to use different methods for e-learning but the AHP method selected interactive presentations as the most effective tool for education of entrepreneurs about benefits and usage of e-commerce for business development in the digital environment. As SME sector companies are small, employees cannot leave their offices for an extended period to participate in courses and attend educational institutions. Therefore, e-learning is the best possibility for increasing competence in e-commerce. Different types of institutions – private, municipal and state enterprises working in the lifelong learning niche – can use this knowledge to prepare study courses for entrepreneurs to increase the level of competence and indirectly influence business development, especially in rural areas.

The target audience relates better to the subject matter if it is presented with a broader range of interpretative tools, as in interactive presentations: a mixture of audio, video, figures and textual information. Entrepreneurs need knowledge of e-commerce possibilities and examples of best practice in using the digital environment for business development and increasing the effectiveness of the internal company process. For this reason, it is necessary to organize trainings and exchange of e-commerce best practice for business development. In this process, the following parties may be involved: the company management, local and central governments, and EU institutions. It is necessary to organize courses and training for entrepreneurs to enrich the knowledge of e-commerce usage and to destroy myths that e-commerce requires special technical skills and is expensive. This is the responsibility of both local and central governments. Special training programmes and projects financed by EU funds can promote the dissemination of knowledge and best experience in this field. Such EU policy may be useful not just in Latvia but also in any country where there are problems with e-commerce usage for business development. Cooperation among all parties may lead to good results and increase the effectiveness of enterprises. The results of the studies may be used by management of enterprises and representatives of local and central government and EU institutions.

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