

E-business in Micro Companies: Lessons learned

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Abstract

E-business is entering its mature stage. E-business in large companies has been researched in several surveys, whereas SMEs and micro companies have been researched less often. Micro companies are, together with SMEs, a critical part of national economies worldwide; both are central to the EU's development strategies. It is well known that, in an information society, business models are driven by e-business concepts, and e-business models are emerging. An in-depth understanding of e-business use in micro companies is crucial for the success of such companies. The main purpose of this paper is to research the intensity of e-business use, advantages and disadvantages of e-business, the biggest problems of e-business implementation/maintenance, and attitude toward trends of e-business in micro companies. The paper presents findings from a survey carried out on a sample of micro companies. Data were collected via an e-questionnaire, and results were calculated using SPSS. The data confirmed that e-business in micro companies is most often used in connection with e-banking; e-business with the government also appears to be very important.

Keywords: E-business, micro companies, e-business adoption, e-business CSFs

1 Introduction

The rapid development of information technology has enabled e-business to become a global phenomenon. As the Internet became more commercialized and users began to participate in the World Wide Web in the early 1990s, the term *e-business* was coined and e-business applications expanded rapidly (Turban, Chung, & Lee, 2000). Organizations adopt e-business for several reasons and perceived benefits (Wang & Zheng, 2011). Authors mention the better management of information, better integration of suppliers and vendors,

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better channel partnership, lower transaction costs, improved market understanding, expanded geographical coverage (Abid, Rahim, & Scheepers, 2011; Damanpour, 2001), and trading time expanded to 24 hours a day, 7 days a week, 365 days a year (Tsao, Lin, & Lin, 2004).

E-business in large companies has been researched in several surveys, but SMEs have been researched more rarely and the smallest companies—often referred as micro companies—have only seldom been researched (Abid et al., 2011). Micro companies are, together with SMEs, an important part of national economies worldwide, and both are central to the EU's development strategies. In an information society, business models are driven by e-business concepts, and e-business models are emerging. An in-depth understanding of e-business use in micro companies is crucial for the success of such companies.

This paper presents findings from a survey carried out on a sample of micro companies. The research model included where and how e-business is used in communication with business partners, how micro companies use e-business to communicate with governmental institutions, which benefits are they seeking through e-business, which problems are arising, and what influences e-business use in micro companies.

2 E-business in the Global Marketplace

Various researchers in different contexts have demonstrated that e-business is rapidly growing and expanding. A study conducted in Europe by e-Business Watch (2008) showed that e-business activities are mainly determined by value chain characteristics and company size. Regional factors are less important in this regard. The study concluded that, on average, EU companies are on the same level as their competitors in other advanced economies in terms of electronic business activity (e-Business Watch, 2008).

Another study conducted in Europe by European Communities (2008) highlighted big differences between different areas of e-business use in companies and also defined differences between small and big companies. One of the first pieces of evidence for e-commerce activities amongst enterprises belonging to the industrial sectors selected in a 2006 report is that, regardless of size, buying online is more developed than selling online. At the European level, the Internet channel is used by 54% of small companies for placing orders and by 26% for receiving orders; amongst large companies, the percentages are 68% and 26%, respectively. The expected differences

amongst the firms' groups emerged from an analysis of the percentages of companies using e-business applications to support marketing and sales. In particular, the percentages of small companies using CRM systems and specific ICT solutions for marketing and sales are half of those for large companies.

Raymond and Bergeron (2008) examining the performance outcomes of the alignment between SMEs' e-business capabilities and their business strategy by studying SMEs in Canada. Their findings indicated that the ideal e-business profiles vary in relation to the company's strategic orientation; in addition, e-business alignment has positive performance outcomes for the SMEs studied in terms of growth, productivity, and financial performance.

In their study Ghobakhloo, Arias-Aranda, and Benitez-Amado (2011) researched the factors within the technology–organization–environment (TOE) framework that affect the decision to adopt e-business as well as to adopt or not different e-business applications within SMEs. They found that e-business adoption within SMEs is affected by a perceived relative advantage, perceived compatibility, CEOs' innovativeness, information intensity, buyer/supplier pressure, support from technology vendors, and competition.

Ng (2005) studied business to business (B2B) e-business models for Australian agribusiness companies and defined factors (both internal and external) influencing the choice of e-business models as well as insights into the current practices of Australian agribusiness in relation to the selection process of B2B e-business models.

Globalization and technology effects appear to have forced smaller firms around the world to implement e-business practices, however, there is considerable variability in adoption and usage from country to country (Fillis, Johansson, & Wagner, 2004). Fillis et al. (2004) identified several reasons behind adoption and non-adoption in SMEs—namely, macro-level, industry-level, and company-level factors. They also researched owner/manager motivations and attitudes toward e-business adoption.

Taylor and Murphy (2004) explored a range of issues surrounding the adoption e-business technologies by SMEs. They examined models of e-business adoption by SMEs and analyzed barriers to the adoption of e-business technologies. They concluded that the take-up of e-business by SMEs needs to be seen as a means to an end rather than an end in itself.

Mendo and Fitzgerald (2005) set out to critique the applicability of e-commerce staged models in explaining

the progression of SMEs in their use of e-business technologies. The premise of this study was that examining the evolution of websites over time provides insights into actual evolving strategies and motivations behind e-business investments. They proposed that a multidimensional framework combines three dimensions of organizational change: process, content, and drivers.

Comprehensive research on e-business in SMEs in Scotland conducted by Fillis and Wagner (2005) indicated that industry factors, customer influences, the degree of entrepreneurial orientation of the key decision maker, and the level of competency development within the organization play important roles in the level of e-business development achieved. They also found that some small firms only embrace e-business to a certain level and even revert to more conventional business practices.

Simmons, Armstrong, and Durkin (2008) examined what determines small business website adoption, focusing in the role that the small business marketing context plays within e-business technology adoption.

Wynn, Turner and Lau (2013) recently performed in-depth research, using two case studies to explore the impacts of e-business technology adoption at the process level in SMEs. They illustrated how contrasting information system strategies can successfully embrace e-business process change. They also suggested the importance of organizational issues in determining the degree of benefits delivery.

Behind the rapid developments summarized above are business models implemented and applied by companies around the world. These companies are driving force behind the innovative use of new technologies in all business areas. The e-business model, like any business model, describes how a company functions, how it provides a product or service, how it generates revenue, and how it will create and adapt to new markets and technologies. The four traditional components of the e-business concept are value proposition, sources of revenue and the required activities, resources, and capabilities (Prudens, 2008).

The review of the literature leads us to the following hypotheses: E-business is most often used in connection with e-banking; e-business has the largest impact in B2B micro companies; micro companies' attitude toward e-business is high; micro companies see the biggest problems of e-business in the high costs and lack of educations and experiences; and micro companies do not lead trends of e-business. We tested these hypotheses using descriptive statistics.

3 Research Study

The aim of this research study conducted among micro companies was to clarify participants' attitude toward e-business and gain insights into how they are adopting e-business. The data were collected by survey using an e-questionnaire. We sent the questionnaire hyperlink to the e-mail addresses of more than 500 micro-entrepreneurs. Questionnaires were sent to randomly assembled micro-enterprises, regardless of the field with which they were doing business. The questionnaire was available on the website for 20 days. Ultimately, 110 entrepreneurs answered questionnaire. In addition, another 100 respondents looked at the questionnaire but decided not to complete it.

The number of employees in the companies ranged from one to nine according to the categorization of micro companies. Most respondents (23%) employed only one person; another 46% employed from two to four employees, and the rest employed five to nine employees. In addition, 58% of participants were limited liability companies, compared to 42% that were sole proprietorships.

Respondents' level of education ranged from vocational education (18%) to professional education (22%), bachelor's degree (50%), and master's or doctoral degree (9%). Regarding knowledge of computer, software solutions, and e-business, by level of education, the arithmetic mean (average self-assessment) was 3.34 while the standard deviation was 0.803 and median and mode were 3. Thus, most participants indicated that their computer knowledge was good.

4 Research Findings

We categorized participants' e-business activities into four groups. We also determined the intensity of e-business use using a five-stage grading scale (never, rarely, occasionally, often, and constantly) (see Figure 1):

- E-business with customers: 43% of companies use it all the time, 35% often, and 14% occasionally.
- E-business with other companies in areas beyond selling activity: 42% perform it all the time, 37% often, and 8% never.
- Interaction with government administration based on e-business in area where already sometimes required as a necessity: 43% conduct it all the time, 16% often, and 10% never.
- Internal communication between employees in the company based on e-business technologies: 42% use e-business-based internal communication all the time and 17% use it often.

Figure 2 details how participants most often use business solutions such as electronic funds transfer (ETF; and electronic payment system), customer relationship management (CRM), supply chain management (SCM), and electronic data interchange (EDI).

Banking transactions are very useful e-business services because they enable banking services from the office or at home, they are adapted so every user can quickly and easily find everything, and they can be used to safely carry out the necessary activities. The results of the survey also indicated that bank transactions are very popular among participants:

90% answered that they always use bank transactions, 8% answered that they often use them, and only 2% of them have never used them. Receiving customer orders via e-business CRM solutions is always used by 27% of companies, 37% use them often, 23% use them occasionally, and only 13% use them rarely or never. Ordering goods/services using SCM solutions via e-business occurs always in 34% of companies, often in 38% of companies, occasionally in 22% of companies, and rarely or never in only 6% of companies. Finally, 46% and 30% of companies always and often, respectively, use EDI solutions, indicating an advanced level of e-business.

Figure 1: Areas of activities conducted as e-business

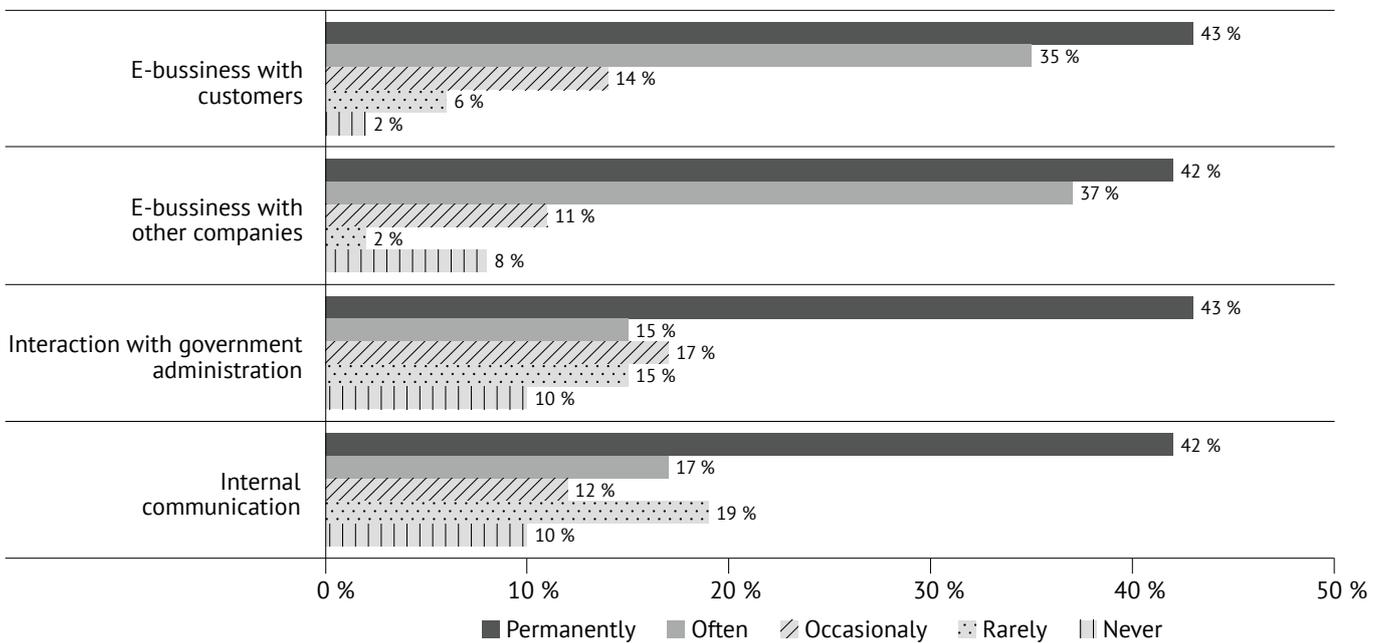
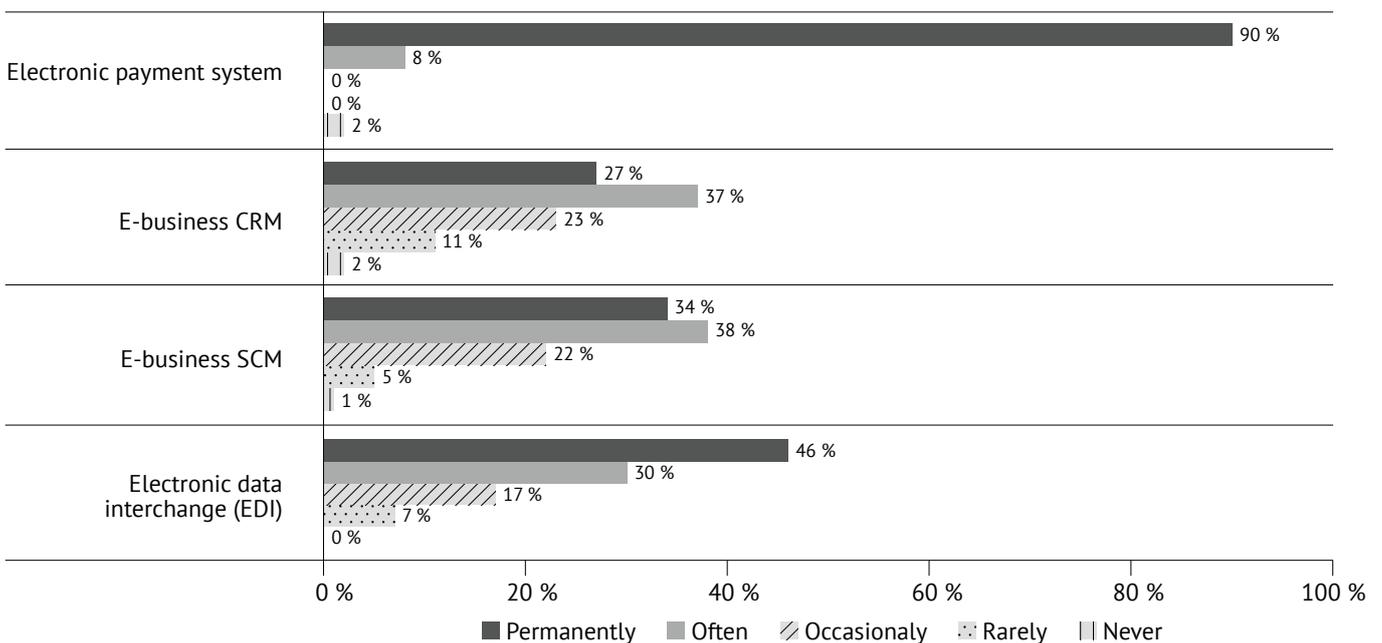


Figure 2: Use of e-business solutions



Business to government (B2G) is gaining importance. Because of the rapid development of e-services provided by the government as well as governmental requirements, companies are increasingly using e-business-based interactions with the government and its agencies. In this study, we researched the use of e-business-based communication with the government in micro companies, focusing on participants' attitudes toward e-taxes. The results are presented in Figure 3. The majority of participants (90%) were familiar with e-taxes; 91% trust such interaction with the tax agency, 88% feel that the necessary information is obtained from the e-taxes solution, and 88% have detailed knowledge of the

services provided while nearly the same percentage (87%) believe that the services provided by the e-taxes solution facilitate their business.

Concerning the advantages and disadvantages of e-business, we asked micro companies to list what advantages they have using e-business models and solutions. Participants were asked to indicate if they agree or disagree with selected benefits of e-business (see Figure 4):

- Reduction of the operating costs: 34% completely agree with this statement, 50% agree, and 13% did not express an opinion.

Figure 3: Attitude to the e-taxes services and their use

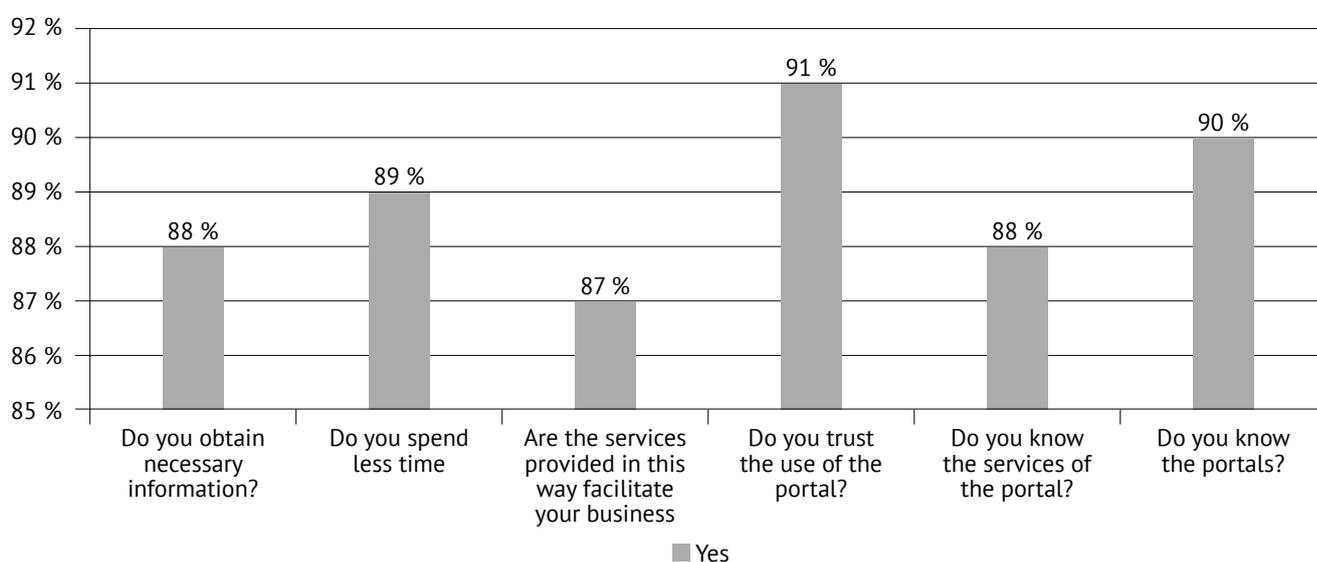
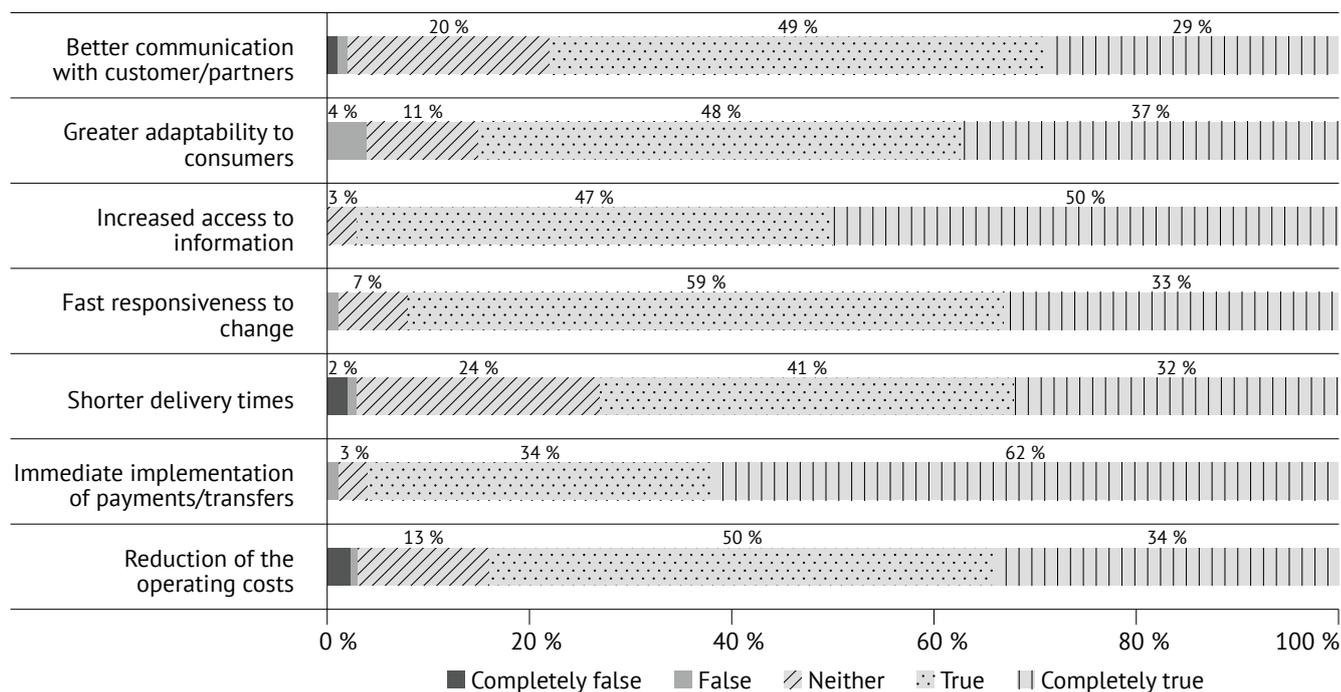


Figure 4: Advantages of e-business in the surveyed enterprises



- Immediate implementation of payments and transfers: 62% completely agree, and a little more than 30% specified that the statement is true.
- Shorter delivery time: 24% did not indicate if delivery time is actually reduced through e-business while 73% stated that this statement is true or completely true.
- Speed of response to changes: 59% answered that the speed of responding to changes is faster with the use of e-business.
- Increased access to information: Half of all respondents completely agree with this statement, and a few percentage points less only agree with the statement.
- Increased adaptability to customers: 48% believe that this is true, and 33% say this is completely true.
- Better communication with customers: 1% said this is completely false and another 1% said it was false; 20% did not comment; and the highest percentage—49%—considered this statement to be true while 29% said it is completely true.

On average, the companies did not assess any of the proposed advantages as being less than 4 or the descriptive assessment “true”; therefore, we can conclude that their attitude toward e-business is high and that companies have adopted e-business to such a level that they have used all of the advantages in their favor.

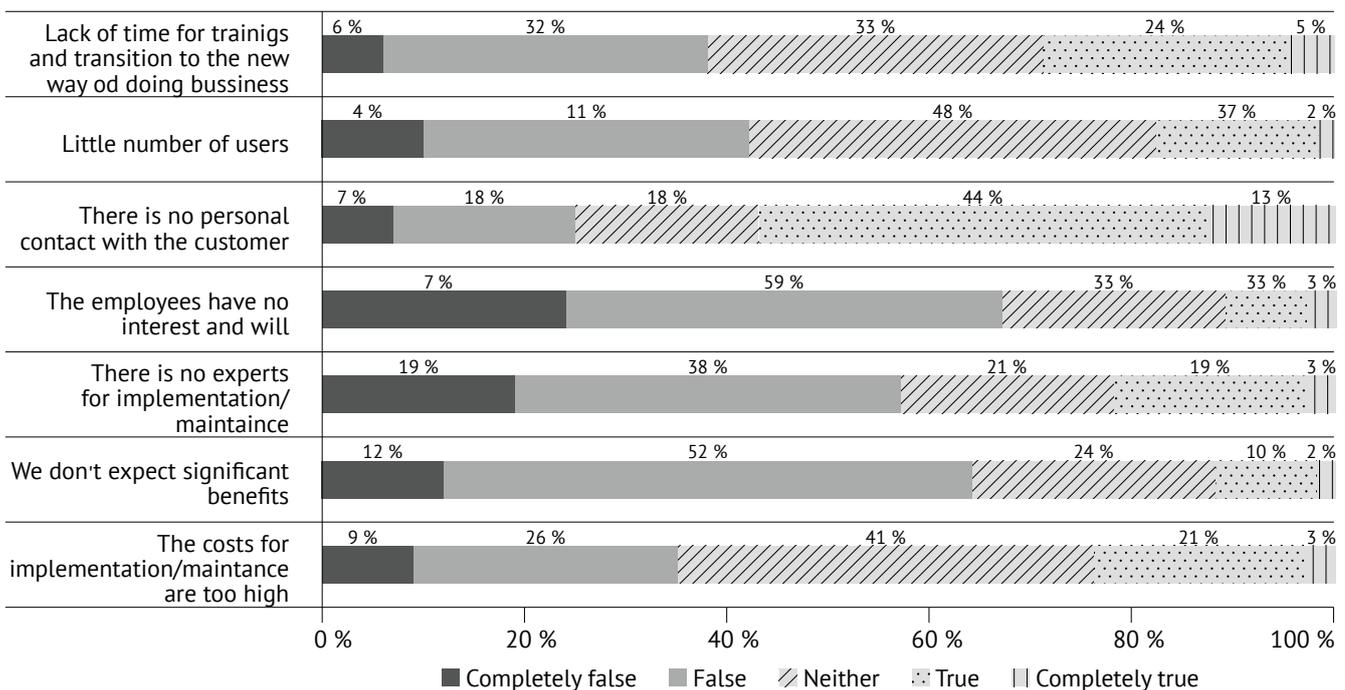
Yet e-business also brings disadvantages and raises problems for entrepreneurs. When assessing these disadvantages, we noted a greater dispersion of responses on

the 5-stage grading scale than with the assessed advantages (see Figure 5):

- 41% of respondents (the largest percentage) could not identify whether the costs of implementation and maintenance are too high.
- More than half of respondents did not agree that e-business means they do not experience significant benefits.
- 38% of companies did not agree that they do not have experts for implementation, support, and maintenance of e-business solutions.
- 43% percent of participants did not agree that employees do not show an interest in and willingness to implement or develop e-business.
- 44% of respondents saw a problem in the statement that e-business does not bring personal contact with customers, which is crucial for some specific activities.
- 40% of respondents could not identify whether the e-business problems are a result of the small number of users.
- The question about the lack of time for trainings and transition to the new, improved way of doing business was answered as “neither” by 33% of respondents, meaning they could not decide about this statement. Only one percentage point less answered that the statement was false.

Due to their size, micro-entrepreneurs are very sensitive to financial issues and to human resource management issues, so one of our hypotheses suggested that

Figure 5: Disadvantages of e-business in the surveyed enterprises

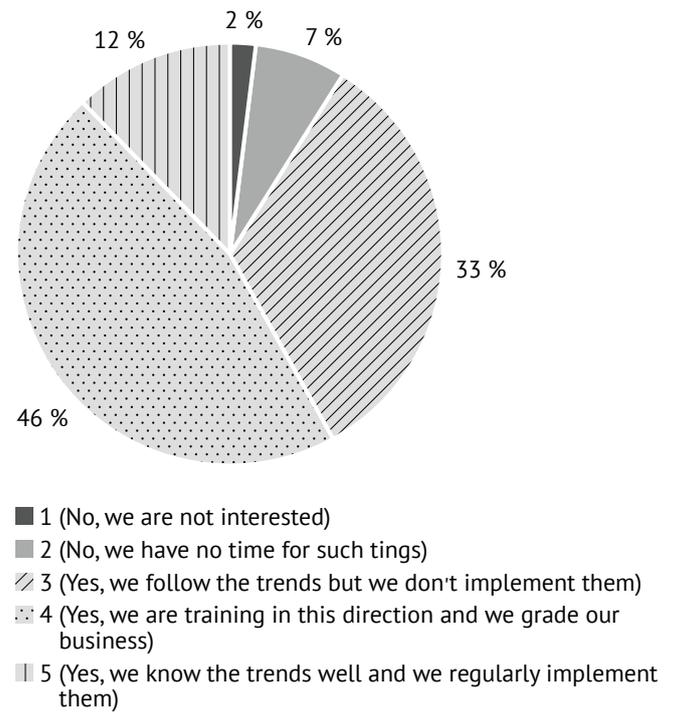


micro-entrepreneurs see the biggest problems of e-business in the high costs and lack of education and experience. Based on the collected data, we can neither disprove nor confirm the hypothesis. In both cases, the largest percentage of respondents answered that they neither agreed nor disagreed with the statement (Figure 6). However, the second largest percentage answered in the positive, suggesting a rejection of the hypothesis. In addition, 26% of the respondents did not agree that the cost of implementation and maintenance is too high, and 32% did not agree that they lack time for education and transition to a new way of doing business. Certainly, the information in the opposite direction is not insignificant; indeed, an insignificant proportion of respondents defined this as (21%) compared to true (26%).

E-business, as with all modern concepts and approaches, is developing very rapidly. We wanted to research participants' attitudes toward future trends in e-business and how they are familiar to micro-entrepreneurs. Figure 7 shows the answers in the negative direction (left side) and positive direction (right side).

As indicated, 9% of all respondents were not familiar with the trends and have no time to follow them, whereas the remaining 91% were informed about e-business trends. In addition, 33% of respondents follow the trends, but do not implement them, while the largest percentage (46%) move in this direction and update operations. The remaining 12% are familiar with the trends and always implement them.

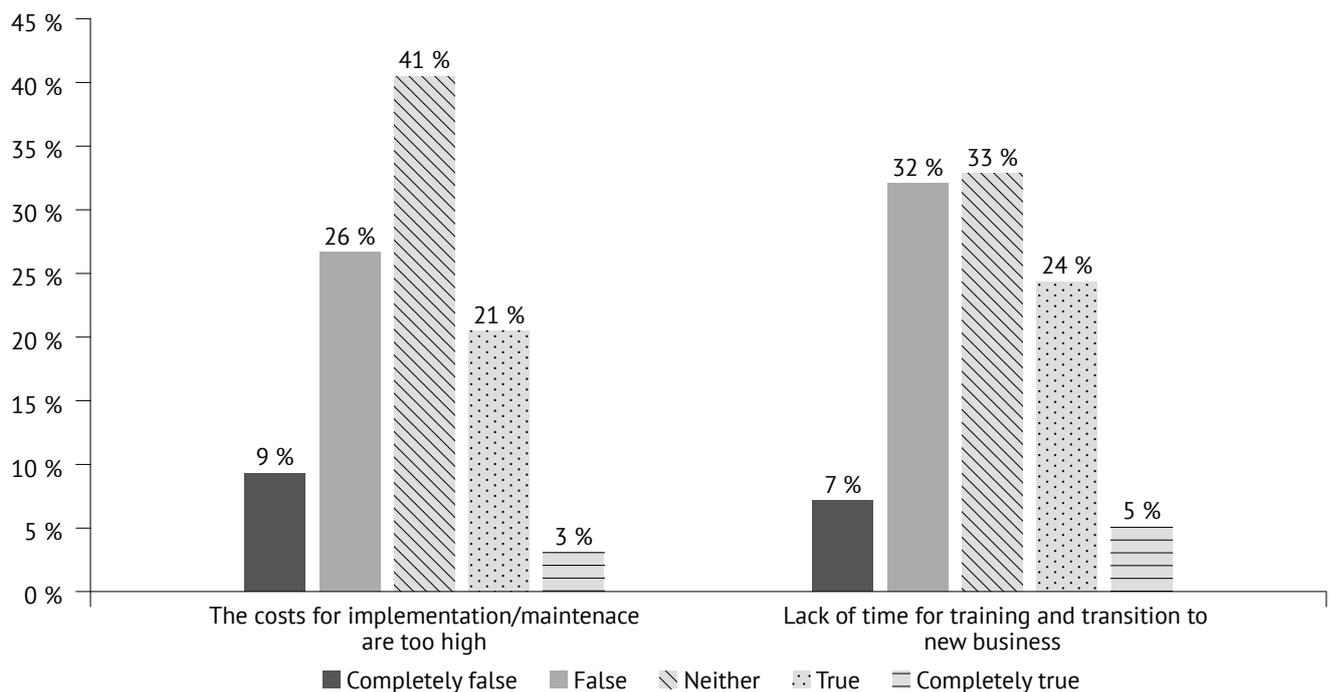
Figure 7: Attitude toward trends of e-business



5 Conclusion

We can conclude that entrepreneurs in micro-companies have very positive ideas about e-business. The research also confirmed the majority of our hypotheses. E-business is most often used in connection with e-banking. The data

Figure 6: Attitude toward costs for implementation/maintenance and toward training



indicate that micro-entrepreneurs most frequently use e-business services for banking. E-business is comprehensive concept that enables cooperation inside the company and with other companies, doing business with customers, suppliers, and the government. We expected e-business to have the largest impact when doing business with other companies. However, the data did not prove or disprove this hypothesis, although e-business-based interactions with the government appeared very important.

We also researched the advantages and disadvantages of and problems with e-business. All of the listed advantages were demonstrated to be applicable. Micro-entrepreneurs familiar with e-business are also familiar with the advantages that this business approach brings, confirming our hypothesis. Yet the hypothesis regarding the disadvantages was not confirmed as the percentage of responses between the descriptive assessments (i.e., false, neither, or true) were extremely similar.

In the last part of the survey, we questioned the adoption of new trends in e-business. Interestingly, 91% of all respondents follow the e-business trends, and 12% of these recognize that trends are very good and implement them regularly. The survey itself did not explain in detail what the given statements mean, but a good explanation of trends and their regular implementation were understood to be news and updates that occur in this area. The percentage given here, based on these statements, is very high. We cannot define if the consequence of this result is a misunderstanding of the statement or if participants truly do follow and implement innovation in e-business. We can only say that the participating micro companies were interested in trends emerging on the market and implemented them according to their abilities.

Irrespective of the size of the companies, we have to gain the necessary skills and experience to succeed in e-business. The latest ICT will not bring the desired benefits and impacts if we cannot cope with and manage them in our favor.

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E-poslovanje v mikro podjetjih – nova spoznanja

Izveček

E-poslovanje vstopa v svojo zrelo fazo. Področje e-poslovanja v velikih podjetjih je bilo raziskano v številnih raziskavah, po drugi strani pa je zelo malo raziskav, ki obravnavajo njegovo delovanje v malih, srednje velikih in mikro podjetjih. Mikro podjetja so skupaj z malimi in srednje velikimi podjetji zelo pomemben del nacionalnih gospodarstev v svetu in imajo tudi osrednji pomen za razvoj strategij Evropske unije. Znano je, da so koncepti e-poslovanja v informacijski družbi vodilo za razvoj poslovnih modelov, vse bolj pa se pojavljajo tudi modeli e-poslovanja. V bistvu je razumevanje uporabe e-poslovanja v mikro podjetjih ključnega pomena za njihov uspeh. Glavni namen prispevka je raziskati intenzivnost uporabe e-poslovanja, njegove prednosti in slabosti, največje težave pri implementaciji/vzdrževanju ter odnos do trendov v e-poslovanju v mikro podjetjih. V glavnem delu prispevka bodo predstavljene ugotovitve na podlagi raziskave, ki je bila izvedena v mikro podjetjih. Podatki so bili zbrani z elektronskim vprašalnikom, rezultati pa izračunani s programom SPSS. Raziskava je potrdila, da se e-poslovanje v mikro podjetjih najpogosteje uporablja v povezavi z e-bančništvom, zelo pomembno pa postaja tudi e-poslovanje z vlado (Business to Government – B2G).

Ključne besede: e-poslovanje, mikro podjetja, sprejetje e-poslovanja, kritični dejavniki uspeha e-poslovanja