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## Enterprise social networks as a supporting tool in the digital economy

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### Abstract

Digital economy refers to an economy that is based on digital computing technologies. It is widely accepted that the growth of the digital economy has widespread impact on the economy as a whole. Companies have been trying to respond to the changes of the digital economy, and they have been integrating information technology management into their enterprises. The goal of this paper is to determine the benefits of Enterprise Social Networks in companies. The methodology of this paper is based on comparative qualitative research using a survey conducted in the Czech Republic across business sectors. The research focuses on costs related to the use of Enterprise Social Networks. The results indicate the possible use of modern technologies for more effective business management. This paper discusses the use of the latest trends and innovations concerning technologies to help managers effectively convey internal information within the digital economy.

Keywords: Digital economy, information technology, enterprise social network.

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## 1. Introduction

The global economic crisis has had and still has a strong impact and influence on the economies worldwide. This crisis affected consumer conduct and business management considerably. The digital economy grew more slowly during the crisis, but their future development is considered as one of the factors that can help the countries to face the crisis (OECD, 2009). Current economic and global conditions made a large number of enterprises to migrate to Internet-based systems for increased efficiencies, lower operating barriers costs and the ability to operate in real time across different platforms. That is why many firms are re-engineering their main business processes, by investing in key technologies – mobility, cloud computing, business intelligence and social networks (Oprescu & Eleodor, 2014). The profound changes in technologies and economics of communications mark the transitions to a post-industrial economy, in which knowledge and networks play a more pre-eminent role than capital. It is widely accepted that new technologies are having major positive and negative impacts on economic and social relationship (Ciocoiu, 2011). In this context, information and communication technologies (ICT) and Internet are seen as opportunities to the development. Sustainable development can be based on expanding global communications and knowledge exchange (Maclean, Andjelkovich & Vetter, 2007). Information economy also requires highly skilled workers and the development of their intellectual skills, which cause the potential of knowledge of a society (Ciobanu, Pana & Diaconu, 2015). Although there is no single definition of digital economy, there is board agreement on certain fundamental principles. The basic idea of the digital economy is that the manufacturing of products, services, lifetime learning and innovation are made possible by modern technology support transmission and processing in the context of market globalization and sustainable development (Ciocoiu, 2011).

Information Technology is doubling every 2–3 years and mobile internet traffic every year. By 2015, there will be 25 billion wirelessly connected devices globally; doubling to 50 billion in 2020 (Duhaneanu & Marin, 2014). The company PwC conducted international research that interviewed 1,344 general directors from 68 countries. The research results reflect trends influencing business conduct not only right now but also in the next three years; this is due to the growth of the global economy. Technological progress, demographic changes and advancement in the economic strength of individual countries are three main factors that influence business conduct. In particular, these are the digital economy, social media, mobile devices and big data (Prikryl, 2014). This last research only confirms the current trend of the digital economy.

Managers address the selection and combination of information technology. Search sophisticated technologies are a key factor for efficient business performance in all organizations. Development of technology and the ability of organizations to recognise trends, new business opportunities, become the determining factor of competitiveness (Hynek, 2015). One possible technology offers Enterprise Social Networks, using this tool, users can quickly connect anywhere in the world (Kozel, Mynarova & Svobodova, 2011). Cerny (2013) defines the enterprise social network as the part of intracompany communication with the goal of cooperation, information sharing, the acquisition of feedback or mutual communication between individual people in the company (Cerny, 2013). A number of authors have tried to define enterprise social networks and have defined this term similarly. The common thinking is to include the use of services from standard external social networks to generate ‘visibility’ and cooperation within the enterprise. The author of this paper defines enterprise social networks in the following way: ‘Enterprise social networks use enterprise social software that offers additional social media and platforms for company cooperation; discussion; sharing know-how, knowledge and documents; receiving feedback in real time; assisting in building intracompany collective intelligence; and deepening relationships, cohesiveness and engagement in the organization’. Successful enterprises use internal social networks to build stronger ties with their co-workers and reach out to employees that they have not previously met. The advantage of this is the option of connecting at a personal level with co-workers, advancing careers together with the company’s advancement and providing internal campaigns for their company projects (Dimicco et al., 2008). It is necessary to

mention that even enterprise social networks have their shortcomings in the form of insufficient acceptance by employees (Ward, 2012). Furthermore, the enterprise social network offers an altogether separate and secure environment, which is one of its key parameters. This network mainly integrates the intra-net with other collaborative tools. Providers of enterprise social networks provide many benefits for the organisation.

## 2. Methodology and research results

The goal of this paper is to determine the benefits of enterprise social networks for enterprises. This paper aims to answer the question regarding the cost of enterprise social network, whether the company can achieve cost reductions based on implementation and effective use of enterprise social networks.

The methodology of this paper is based on comparative qualitative research on the basis of a survey conducted in the Czech Republic in 2014 across business sectors. The following criteria were established for selecting a sample of respondents:

- a corporation;
- all sectors according to CZ NACE categorisation;
- all locations in the Czech Republic;
- actively engaged in business.

In order to increase the validity of the data and guarantee the general confirmation, the following were not specified: the number of employees, turnover, sector or location of the organization. Next, specific organisations were determined with the selected criteria listed above with the help of the MagnusWeb database information system. After exporting the file with the search results into an excel spreadsheet, the total number of firms amounted to 1,93,908 organizations. Multistage probability sampling was used. The basic sample is very extensive (1,93,908 organizations), which eliminates recording and studying all of its components. It was advisable to move on to the second step and begin selection of the so-called secondary selection units within these selected primary groups (sectors).

On the basis of filtering out empty cells, organisations with unlisted email addresses and the number of messages undelivered to their recipients, the final sample for questioning included 47,772 organisations. On the basis of the calculation of the formula presented below (1), the minimum number of respondents is set at 272 (Kozel et al., 2011). The calculation of the minimum number of respondents is as follows:

$$n \geq \frac{(z^2 \times p \times q)}{\Delta^2} \quad (1)$$

where:

$n$  is the minimum number of respondents

$z$  is the reliability coefficient 2 (95.4% reliability)

$p$  and  $q$  are the number of respondents aware and unaware of the problematic in percentages

$\Delta$  is the set maximum permissible error (6%)

$$n = \frac{(2^2 \times 0.43 \times 0.57)}{0.06^2}$$

$$n = 272$$

The rate of return for the questionnaires reached an absolute representation of 842, which is sufficient with regards to the calculated minimum number of respondents.

The aim of primary research was to find out how many organisations in the Czech Republic use Enterprise Social Networks, further to find out the benefits of Enterprise Social Networks. The aim of secondary research was focused on the influence of Enterprise Social Networks at the costs in the company. The following question was focused on whether Enterprise Social Networks can be a supporting toll in today’s digital economy.

Empirical generalisation and interpretation of the determined results were conducted on the basis of the research results. 114 respondents answered that an enterprise social network is used in their organization, i.e., 14%. 75 organisations expressed interest in using them in the future, i.e., 9%. Figure 1 shows the most common perceived benefits of enterprise social networks. The advantages in the use of enterprise social networks are sharing information and experiences, increase collaboration among employees, development of corporate culture, improving communication with management and identifying experts in enterprises.

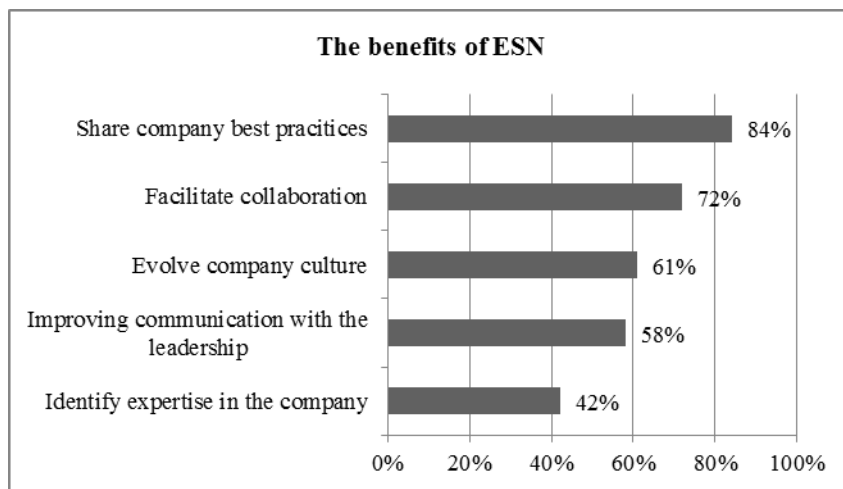


Figure 1. The benefits of enterprise social networks

The following research question was formulated: Implementation of ESN does not affect the costs of the company. Empirical generalisation and interpretation of the determined results were conducted on the basis of the research results. For statistical evaluation was used program STATISTICA. The reference constant was determined 3 (no change). The level of significance of the test was determined  $\alpha = 0.05$ . The results were calculated by *t*-test, based on the composition of the data matrix, the selected test, defined variables and constants reference. Table 1 comprehensively represents the results of the test performed.

Table 1. T-test result in STATISTICA

Variable	Test averages against the reference constant (value)							
	Average	SD	N	St.er.	Constant reference	T	SV	p
x <sub>1</sub>	3.69	0.80	104	0.078	3.00	8.81	103	0.00

Table 1 shows that *p*-value was less than the significance level  $\alpha$  and the average value of the variable x<sub>1</sub> is greater than the reference constant. We admit that the implementation of an enterprise social network positively influences the costs.

Respondents listed lower bills for telephone calls and savings on travel costs on account of communication and company consultation online. Furthermore, there were lower costs on IT maintenance and savings on paper forms and documents. Saving time at work (expressed financially) was also mentioned in a note as well as eliminating duplications/mistakes (which were very costly to correct).

In this research, they were also examined the cost of internal communications. The result was a 7.8% average decrease in costs for internal communication as a result of implementing an enterprise social network. A frequency polygon was graphically constructed (Figure 2) from this, it is possible to infer that a decrease (increase) in costs on internal communication occurs most frequently between 1% and 20%.

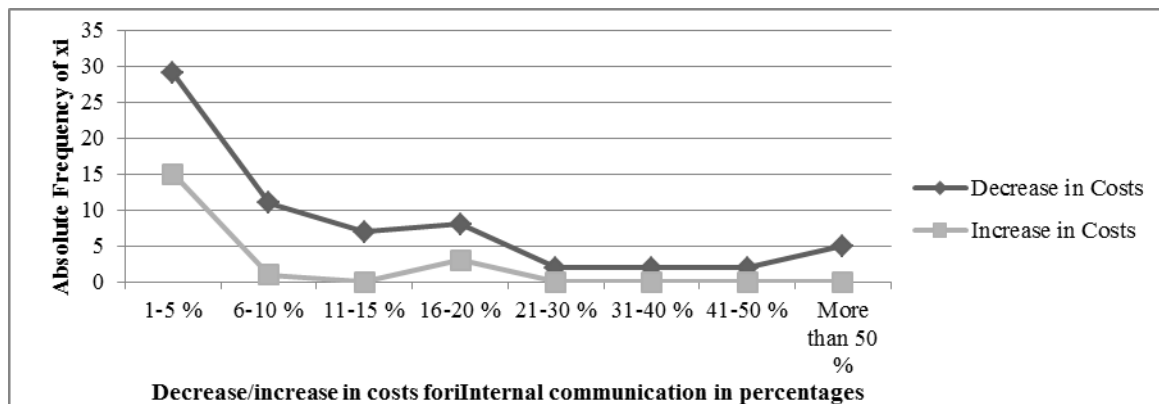


Figure 2. Frequency polygon (Skoludova, 2015)

Figure 3 shows that Enterprise Social Networks are supporting tool in today’s digital economy, i.e., 68% of respondents

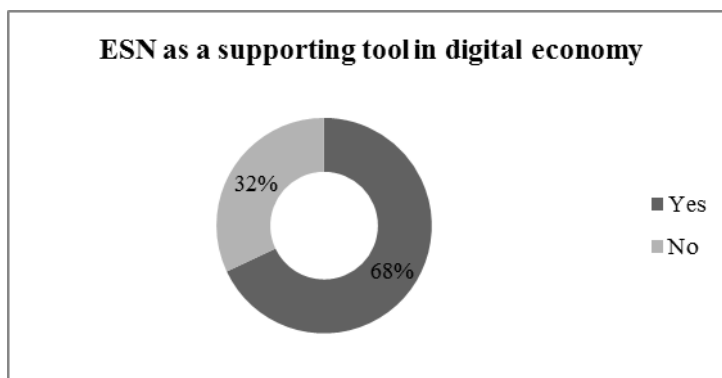


Figure 3. The ESN as a supporting tool in digital economy

### 3. Conclusion

The digital economy is also sometimes called the internet economy, the new economy or the web economy. The digital economy is included in Industry 4.0. It is widely accepted that the growth of the digital economy has widespread impact on the economy as a whole. This new economic model is characterised by digitalisation, intensive use of ICT, the codification of knowledge, changing information into commodities, and new ways of organizing work and production. Enterprises with foreign divisions throughout the world need to work together to share information, plan, solve problems and realise new strategic decisions. The overall comparison of the research data presents current trends; the research results encourage using a potential management tool for effective business management and a tool for reducing costs. Enterprises are now trying to be competitive in the global market. Managers monitor financial and non-financial indicators and trying to predict future developments. A variety of methods can be used for evaluation of a business financial health. Business failure prediction models have gained attractiveness for their objectivity and simultaneously a relative simplicity and a short time for conducting analyses (Kubenka, 2014). It should be noted that based on current theories and research in the field of economic geography, regional research sees SMEs as

entities that can only passively accept the conditions of the labour market, where they are located and which surround them (Mandysova, 2014). Managers also address what new sophisticated tools to implement to the business management. Managers can choose from a range of tools and software, based on the rapid development of information technology. Enterprise social networks are internal enterprise software and can offer a variety of benefits to modern business management (Leonardi, Huysman & Steinfield, 2013).

Primary research shows that 114 organizations in the Czech Republic use Enterprise Social Networks, i.e., 14% (75 organisations expressed interest in implementing them in the future). For comparison, the 6th annual Global Digital IQ survey, conducted by the consulting company PwC, determined companies' digital IQ for 2014. Participating in the survey were 1,500 company managers or heads of IT from 38 countries, including the Czech Republic and Slovakia. 'A company with a high IQ is distinguished by the fact that technology and digital trends are part of their culture and business model. It communicates using social technologies, facilitates mobility, uses the cloud, and is able to analyze big data'. The results of the survey support the finding that globally a total of 30% of companies invest in social networks, via which employees communicate. Czech and Slovak companies lag behind; only 3% of companies have currently invested in internal social networks (Moderni rizeni, 2014). The digital world allows for faster time and more effectively connection between businesses and their employees, customers and business partners. It will be interesting to continue monitoring new IT trends in business management. Primary research results also show that the use of Enterprise Social Networking brings many benefits. The benefits of using Enterprise Social Networks are sharing information and experiences, increase collaboration among employees, development of corporate culture, improving communication with management and experts in identifying businesses. The research results of secondary research show reduction corporate financial and non-financial costs through use of enterprise social networks. The results of the research question and *t*-test show that managers can achieve reduced costs using enterprise social networks. It was confirmed that an Enterprise Social Network positively influences costs for internal communication and results in lowering these costs by an average of 7.8%. Example is the decrease in travel costs and increase in effective use of working time based on company consultation online. Furthermore, there are savings on administrative costs and savings on the financially demanding destruction of duplicates and mistakes. Indirect financially quantifiable reasons for an organization's cost savings can be seen in saving work time by making work with documents more effective and having an overview of communication and employee tasks. In conclusion, research results show that Enterprise Social Networks are supporting tool in today's digital economy, i.e., 68% of respondents.

There are many factors influencing business success, competitiveness and stable sustainable future development. One of these many factors is companies' ability to use modern information technology. Enterprise Social Networks can offer sophisticated business software for HRM and worker performance. The question is whether ESN will show a rising or falling trend in the Czech Republic. Future research will be focused on the impact of other information technologies on businesses.

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