



The Role of the Internet in The Innovation of SMEs: Opportunity and Threat

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Abstract: Hungarian small and medium-sized enterprises' ability to innovate is considered a weak point in the index of competitiveness, and its strengthening is a strategic goal of the country. Several related questions arise: is the SME sector able to adjust to the quickly changing, developing market with continuous innovation? Is it able and willing to change itself and its ways in order to increase its efficiency? Does it have the tools and sources of information for this? The boom of the Internet has changed the main channels and pace of the flow of information. Will domestic SMEs follow this pace? The article introduces the main features and tools of the Internet use of Hungarian SMEs, and mentions the related threats as well as opportunities to decrease the risks.

Keywords: small and medium-sized enterprise, Hungary, Internet use, online marketing, IT safety, innovation, competitiveness

1 Introduction

The economic importance of small and medium-sized enterprises¹ (SMEs) in Hungary is inevitable. [13] [14] According to the data of the European Commission published in 2014 the proportion of the SME sector is 99.8%, within which 94.5%

1 Small and medium-sized enterprise: According to paragraph 3. § (1) of law XXXIV., 2004. an enterprise may be qualified as an SME if:

- a) the total number of its employees is less than 250 people and
- b) its annual revenue is maximum 50 million Euros or its equivalent in HUF, or its bottom line maximum 43 million Euros or its HUF equivalent.

(2)5 Within the SME category an enterprise may be qualified as a small enterprise if

- a) the total number of its employees is less than 50 people and
- b) its annual revenue or its bottom line is maximum 10 million Euros or its equivalent in HUF,

(3)6 Within the SME category an enterprise may be qualified as a micro enterprise if

- a) the total number of its employees is less than 10 people and
- b) its annual revenue or bottom line is maximum 2 million Euros or its equivalent in HUF.

of all the enterprises are micro enterprises. 70.8% of the labour force are employed by the SME sector. [10]. The ecologically efficient development of smaller enterprises is important [11]. The competitiveness of SMEs has an impact on the whole of the country [25], the most important pillar of which is innovation² [26]: is the SME sector able to adjust to the quickly changing, developing market with continuous innovation? Is it able and willing to change itself and its ways in order to increase its efficiency? Does it have the tools and sources of information for this? The boom of the Internet has changed the main channels and pace of the flow of information. Nowadays information is considered as a factor of production as labour force or capital assets, which might help to improve the better assessment of sources of finance or making them tailor-made for the company [3]. Will the domestic SME sector follow the pace? The article introduces the main features and tools of the Internet use of Hungarian SMEs, and mentions the related threats as well as the opportunities to decrease the risks.

2 Internet Use in Hungary

According to the profile of the European Commission measuring the state of development of digital economy and society concerning the year 2014 Hungary can be classified as a country with low performance. Even if the Internet is used by numerous private individuals (75% of the age group between 16 and 74), their time is spent primarily reading the news and visiting social websites. The weakest points of the index can be experienced in the field of public service and the business integration of digital technologies. According to another survey published by the European Commission concerning the same period of time 38% of the respondents do not use the Internet, i.e. only 62% claimed that they use the worldwide web with a certain frequency. [9]

Besides the most developed area of Hungary, Budapest and its region only Balatonfüred, Szeged and Debrecen and their regions use the Internet similarly often. It can be well observed in Figures 1. and 2. that, concerning the development of the small regions of Hungary, parallel to their economic backwardness the possibilities of the virtual world are the most scarcely used in north-east Hungary and in the south of the region Dunántúl. It is interesting, however, that the frequency of Internet use in the more developed regions of the north of Dunántúl are not inevitably proportionate with their economic maturity.

2 Innovation: „Innovation is the application of new or significantly developed products (goods and services) or processes, new marketing methods or organisational solutions in business practice, at workplaces or external relations. We can speak about a new or developed product if it has appeared on the market, a new process, marketing method or organisational solution if it is applied in the operation of the company in effect. We consider innovative activities those scientific, technical, organisational, financial or commercial measures which lead to the innovations defined above, but are at least aimed at that.” [17]

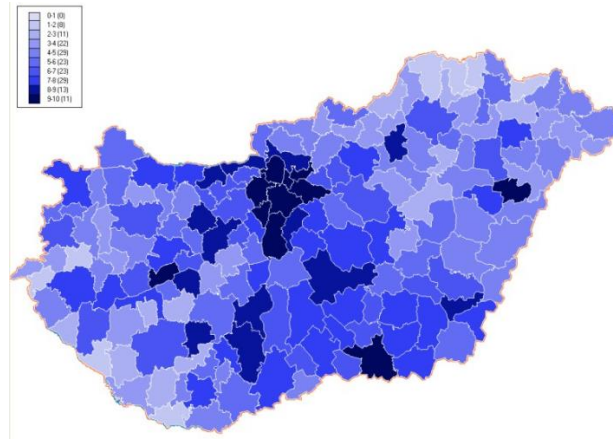


Figure 1
The intensity of Internet use according to small regions [23]

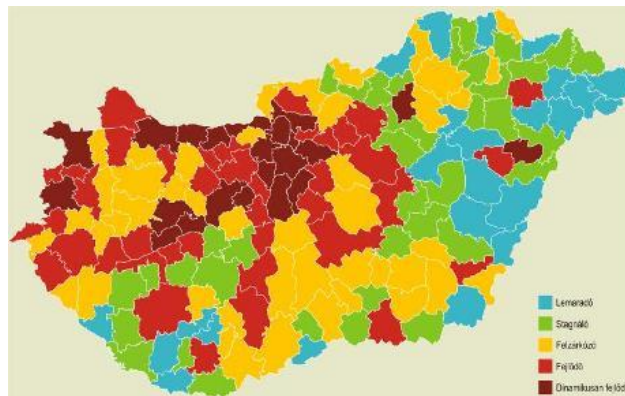


Figure 2
The economic state of small regions [24]

3 Internet use of SMEs

In the information society of the 21st century knowledge is becoming the most dominant of all productive features, the significance of employees working with expertise and information is gaining weight. Market transactions are carried out in increasing proportions on the Internet, the usual system of organisation of companies is changing due to outsourcing and teleworking. Real time business

processes are becoming virtual while geographical position is considered less important. [7]

According to the results published in 2014 by the Institute for Economic Studies (GKI) a significant majority of companies using the internet use cable connection, sometimes mobile internet and landline connection as well. According to the analysis of the data of different sectors it can be seen that the sector of public service uses the Internet the least. While in other sectors the proportion of those who do not use the Internet is insignificant, in the public service sector this is nearly 5%. [1]

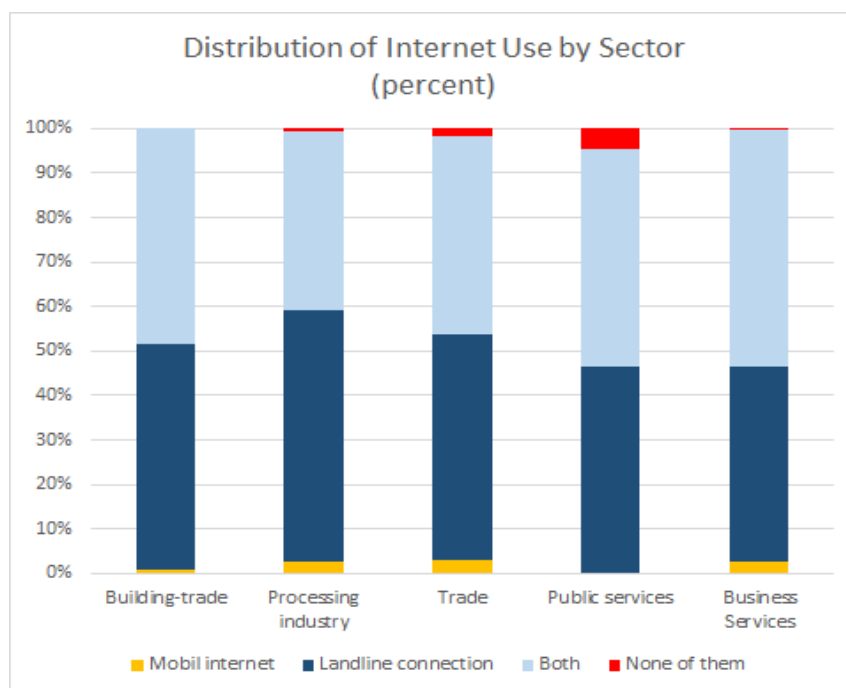


Figure 3

The proportion of Internet use according to sector (%) [1]

“The introduction of digital technologies is an important incentive of the increase of work efficiency, therefore it needs to be initiated. In Hungary, proportionally very few companies use such technologies.” [8] The threats which are followed by the growth of Internet use, personal and corporate dependency on the internet cannot be neglected, more and more use the Internet with less and less technical knowledge, therefore, there are more opportunities for data hackers and spies. The SME sector is especially exposed to these attacks. [4]

A significant majority of information can be accessed on the Internet, and mainly in English. The knowledge of the English language is a basic skill in most countries. [21]. Those who are able to communicate in English and are able and willing to use

the Internet to improve their companies can purchase their raw materials and can order their tools and equipment at lower prices. Those who speak English can compare their products, pool for ideas, collect information about prices, make contacts easier, are able to negotiate, sell, and enter foreign markets. Besides, the Internet is the place that provides further education, as international novelties are not necessarily translated into Hungarian, and a part of specialist books and technical descriptions is only published in English.

The lack of language knowledge can be considered as an obstacle of Internet use and competitiveness. According to the report of the European Commission published in 2012 13% of Hungarians speak at least one foreign language apart from their mother tongue, occupying the last position together with Portugal [22]. According to the recommendations of the business forum set up by the European Commission as an immediate result of the lack of language knowledge and intercultural competence a significant proportion of the SME sector loses business opportunities. Language knowledge is not only necessary for sales and marketing activities but also, as a consequence of globalisation, supply chains, just like international services and export activities, reach beyond borders, and so does the globalised labour market [21]

4 Internet presence in the SME sector

The field of application of the Internet is continually growing, and with it broaden the opportunities of small and medium-sized enterprises. While the SME sector could earlier only consider low-budget, considerably low efficiency offline advertisements, the online world offers several methods nowadays, which can also be considered cheap, but much more efficient for the expert eye to popularise products and services. Earlier, information was only accessible from the office, however, with mobile internet and services based on clouds the area for movement has considerably and literally increased. Threats have also increased together with the new online tools, which fact needs more attention in order to protect sensitive business data.

4.1 Online marketing activity and other applications

An enterprise might explore the benefits given by the Internet in several ways, apart from collecting the before mentioned professional, market information and selecting the appropriate channels of distribution for purchase, in order to increase its business efficiency, the various tools of online marketing may be used [18]:

- online presence (website), a way to publish easily accessible information about the company and its products or services,

- electronic commerce, with which complete orders can be carried out through the web shop,
- providing online services (e.g. bank transfer),
- easily found by those who are interested in its products or services ,
- company presence on community websites,
- Business blogs or other publications strengthening its professional credibility.

Apart from the above the Internet supports the interior business functions of the company, external and internal communication and remote or mobile work (e.g. through email or solutions based on clouds). It can be stated that the Internet is becoming as important for society and economy as electricity.

Hungary, compared to the average of the EU, shows rather weak results in the business application of digital technologies. “Without digitalisation enterprises will not achieve such a degree of efficiency and productivity with which they could set foot on the global digital market.” [8] It is a remarkable fact that only 61.4% of Hungarian enterprises possess their own website. [12]. It can be stated that nearly half of small and medium-sized enterprises do not take the opportunity of an interface where it is easier to search, orientate and gather information.

„Few SMEs sell online (9.8%). Those who do practice it primarily outside the EU (only 3.9% in the EU) with an insignificant turnover (6.9%).” [8] All things considered, the turnover of Hungarian electronic trade increased by 26% in 2014 compared to the previous year, exceeding European trends. In the GDP of all of Europe the share of e-commerce doubled within 5 years, and according to experts, it will double again within another 5 years [20]. While they used to try to sell mass products with one-sided, message-oriented communication, nowadays they provide various products in small quantities for consumers of smaller numbers, who live in diasporas but can be accessed through the Internet. The benefits of e-commerce lay in better access, measurability and cost efficiency [18]

A survey carried out in the circle of small and medium-sized enterprises, published in 2011, revealed that 71% of the interviewed enterprises had not done any activity of advertising at all. The author draws attention to the fact that the world of the Internet is rapidly developing, opportunities are unmined, therefore all of those who wish to improve and apply their knowledge will gain competitive advantage compared to the majority of enterprises [6]. Studying the secret of successful enterprises the Institute of Economic Research (GKI) arrived at the conclusion, proven by statistical data and figures, that enterprises can be successful, i.e. can achieve lasting results and make their company sustainable, their products and technologies able to improve “if they form a harmonic relationship with their operational and business environment, if they set their goals appropriately and choose a suitable strategy, which cannot exist in the long term without the learning

ability of the company”. [27] For this, they need the ability to implement the innovations and cooperativeness. [15]

Controlling or carrying out marketing activities belong significantly (82.5%) to the responsibilities of the manager of the company. According to an expert taking part in the survey Gábor Wolf, this can be assessed positively as the decisions concerning marketing have to be taken by the leader of a small enterprise. If the leader of the company possesses the knowhow of gaining costumers he will not expose his company to the threat that his employee responsible for marketing leaves the company together with the knowhow of gaining costumers, which might be dangerous for a small company [19]. Real, practice-oriented and useful marketing knowhow, as knowledge is at least such a basic skill of a company as technology. If the employee responsible for acquiring costumers leaves the SME will be in a rather difficult situation, therefore enterprise knowledge management processes as, for instance, socialisation have been gaining a more emphatic role [16].

4.2 Internet and security

In 2014, 34% of the internet attacks were directed against small and medium-sized enterprises employing less than 250 people, which is not much less than the proportion of companies employing over 2500 people, which were the most exposed to attacks. It can be seen that small size and relative anonymity do not mean protection. [4]

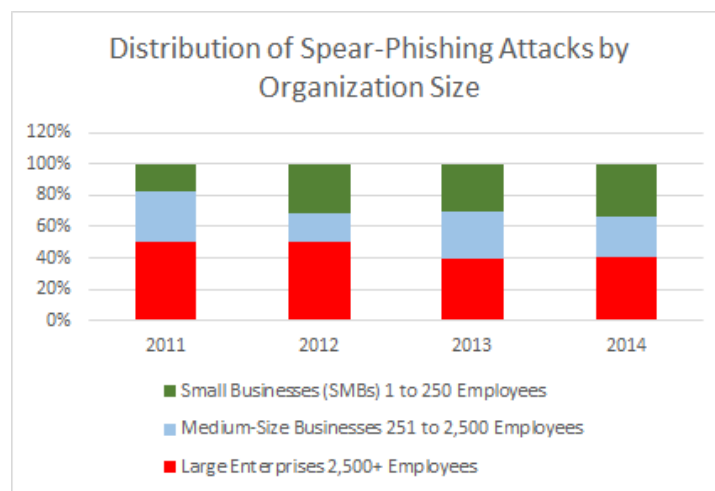


Figure 4

The proportion of enterprises exposed to attacks of data fishing according to categories of size [4]

The attacks apply mainly to engineers producing products and sales workers, that is, the basic skills of the enterprise. Meanwhile it is the SME sector which is the least concerned with cyber-attacks, therefore, without the appropriate security

measures and infrastructure, they become easy prey for hackers. [2] Certain hackers, avoiding the security system of the target company attack the related supply chain, whose members are the small and medium-sized enterprises possessing weaker security. [4]

Threats to information security³ have several forms, on one hand, failures occurring from the nature of storing data, without external penetration, as a result of which all data might disappear from our equipment (computer, mobile phone, other). On the other hand, our equipment might be exposed to attacks of a personal motivation, i.e. definitely against our person, a colleague or the company, either for a general purpose, i.e. malicious applications applied against the hardware (as a skipping board for the illegal activity or e.g. by spam) [5]

The majority of attacks uses human naivety, credulity, therefore the activity of the so-called 'social engineering' through which victims are deprived of data with the help of false appearance or false personalities in emails, is gaining weight. [5]

Hackers may also gain information from the data stored in search engines, what is more, the Internet service provider and the content provider also keep track of our activities. In the course of downloading the applications of mobile phones we give access to several of our data voluntarily. All kinds of data acquired these ways might provide a basis to act malevolently against the target person. [2]

The fragility of mobile equipment has to be highlighted, as this showed 58% increase within a year, due not only to the fact that mobile phones might be stolen together with the personal data in them but also due to the increased number of dangerous programmes. [2] The waste of human work, IT and other resources touches an increasingly sensitive ground nowadays.

Péter Bányász, in his article published in the journal 'Military Science' (Hadtudomány) puts proposals in order to reduce the threats [28]

- „appropriate physical protection for IT equipment at work and home,
- the increase of sensitivity of employees for security of data and information,
- the knowledge of the risks arising from the use of social media,

3 András Keszthelyi lists the conditions of the normal use of information systems that he defines as basic conditions as follows [29]: readiness to provide service or availability for authorized users; integrity (lack of vulnerability, authenticity); confidentiality depending on classification; credibility; operative ability of the whole information system. „Based on above, information security can be defined as it exists if the protection of the information system is closed, complete, continual and proportionate to risk. Closed: considers every important threat. Complete: Includes every element of the system. Continuous: uninterrupted against the changing circumstances in time. Proportionate to risk: the product of the value of the likely damage and the probability of the damage cannot exceed a set previously. This threshold value is the result of a business decision. Achieving and sustaining such information security is possible with the appropriate use of physical, regulational and algorithmic protection.” [29]

- mapping one's own vulnerability (in case of both physical and human risks),
- the increase of security investments,
- limiting the access to data,
- segmentation of the network.”

5 Conclusion

Internet is a means which is efficient for both well-meaning and malevolent users. As a result of the information revolution and information boom gaining space, it is unavoidable as the offline world is too narrow for the 21st century man. Information and knowledge are basic conditions for innovation and therefore, competitiveness. The appropriate reaction to the positive and negative challenges of the Internet and information society is if companies do not lock themselves away from opportunities but learn to use them as fast and efficiently as possible before they would finally lose the race.

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