

# E-BUSINESS IN SLOVENIAN SMES

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## ABSTRACT

*Small and the medium-sized enterprises (SMEs) are socially and economically very important since they represent 99% of all enterprises in the EU and 96.2% of all enterprises in Slovenia. In the paper, the comparison of the e-business in Slovenian and in the EU countries is presented. Not only infrastructure is needed to extend e-business among SMEs what could be the case among Slovenian SMEs. Even if the broadband access to the Internet in Slovenia is not a problem anymore, B2B e-business is not spread among Slovenian SMEs as it is in EU countries. On the other hand, B2G and C2G services are more spread among Slovenian enterprises and even among individuals than among the subjects in the EU countries.*

**Keywords:** e-business, SMEs, Slovenia

## INTRODUCTION

E-business is a broader definition of e-commerce, which is defined as the process of buying, selling, or exchanging products, services or information via computer networks [11]. According to Turban (ibidem) e-business covers servicing customers, collaborating with business partners, and conducting electronic transactions within an organization. Based on the stakeholders in e-business process – businesses, costumers, government, different models of e-business occur – e.g. business-to-business (B2B), business-to-consumer (B2C), business-to-government (B2G), consumer-to-government (C2G) [2]. Turban [11] introduced intrabusiness e-commerce, which covers all internal organizational activities of exchanging goods, services or information among stakeholders in the company. Business-to-employee is one of the models of intrabusiness (ibidem). Nowadays more than e-business, m-business (B2E) is the core term describing business activities conducted through wireless connections. When those activities are targeted to individuals in specific locations, at specific times, location-based business (l-business) is an appropriate terms to use.

According to the European Commission small and medium-sized enterprises (SME) are enterprises with less than 250 employees

(those with fewer than 10 employees are micro enterprises, with more than 10 and less than 50 employees are small and those with more than 50 and with less than 250 employees are medium-sized enterprises) [3]. SMEs are socially and economically important, since they represent 99% of all enterprises in the EU and provide around 65 million jobs and contribute to entrepreneurship and innovation [3].

Slovenia – situated between Italy, Austria, Hungary, and Croatia – is the leading country among 10 new member states that joined EU in 2004 and a country with ICT characteristics, which are usually slightly above the EU 25 average, surpassing some 3–5 of the EU 15 old member states in the aspect of ICT developments. In recent years, various studies explicitly confirmed this, e.g. Stare et al. [8], IDC [7], and Eurostat [6]. In addition, Vehovar and Jovan [12] compared Slovenian companies with SIBIS (Statistical Indicators Benchmarking the Information Society, a project in the Information Society Programme founded by EC) research among EU 15 countries and they found that Slovenia was above the EU 15 average in basic ICTs (computers, internet access, web pages); however it lagged in some advanced technologies (video-conferencing, intranet, etc.). Similar findings arose from Eurostat [5] study on ICT among companies.

In the paper, a comparison between Slovenian SMEs and EU SMEs is presented with the aim to find out the differences or gaps and the potential reasons or solutions. The secondary data available from the National statistical office and Eurostat (Statistical Office of the European Communities) were used.

## ICT USAGE IN SLOVENIAN SMES

### Slovenia compared to other EU countries and the USA

Since SMEs make up the backbone of European economy (ECb) we carried out profound research about e-business activities among Slovenian SMEs. Large companies are mentioned for comparison. We compared Slovenian SMEs data with data for the EU countries – EU 15 (EU in 1995 with 15

countries), EU 25 (EU in 2005) and EU 27 (EU in 2007) data. EU 15 countries are more economically developed than EU 25 or EU 27 countries (Table 1). Slovenia with 16,600 € GDP per capita has a higher GDP per capita

than Portugal (15,300 €), an EU 15 member, and a lower GDP than Cyprus (19,800 €) that join the EU community in the same year as Slovenia (in 2004).

**Table 1.** GDP at market prices and IT/communication expenditure

Region	GDP per capita (in 2007)	% of GDP expenditure for ... (in 2006)	
		IT	Communication
EU 15	29,100 €	2.7	2.9
EU 25	26,000 €	NA	NA
EU 27	24,700 €	2.7	3.0
Slovenia	16,600 €	2.2	3.6
USA	33,400 €	3.3	2.1

Source: Eurostat [5]. Legend: NA – data not available.

The negative gap between Slovenia and EU 27 countries is smaller when a comparison is made with GDP per capita in Purchasing Power Standards that settled Slovenia with 88.0 index behind EU-27 countries (100.0) in 2006, but a forecast for 2008 reduced this gap to 91.1.

### Enterprise structure

In Slovenia, the country with no more than 2 mio citizens, 96.2% of enterprises are micro or

small enterprises in which 45.0% of employees are employed (Table 2). In less than 1% of Slovenian enterprises that are ranked among large enterprises, one third of employees are employed. In the EU, 99% of all enterprises are SMEs in which 67.1% of employees are employed [4]. The portion of enterprises included in the research is presented in Table 2, together with the number of all enterprises and the employment situation.

**Table 2.** Slovenian enterprises in 2006

Enterprise category	Employees	# Enterprises	%	# Employees	%
Micro	< 10	33.371	82.4	171.535	27.6
Small	< 50	5.601	13.8	108.554	17.4
Medium-sized	< 250	1.255	3.1	131.223	21.1
Large	250+	284	0.7	211.057	33.9
		40.511	100.0	622.369	100.0

The National statistical office published results of IT usage in Slovenian enterprises in the first quarter of the 2007 [9]. The report has been published at the end of 2007 (ibidem). The number of enterprises included in the research is presented in Table 3.

**Table 3.** The portion of enterprises included in the research (in 2007)

Enterprise category	% of enterprises
Micro	20.5%
Small	87.7%
Medium-sized	92.0%
Large	84.5%

The portion of micro enterprises included in the research is small because they are not ready to participate in this kind of research and

the drop-out among this enterprise category is higher than among bigger enterprises.

### Computers and networks usage

More than 90% in the survey included enterprise use of computers (micro: 93.6%, small: 97.2%, medium-sized: 99.2%). In medium-sized enterprises all computers are connected to the Internet, in micro enterprises 91.2% and in small enterprises 95.5% are Internet connected [10]. According to Eurostat [5] more Slovenian SMEs have access to the Internet (96%) than in the SMEs in the EU 27 (93%) and even in the EU 15 (95%). The majority of enterprises access the Internet through a broadband connection (micro: 68.5%, small: 75.4%, medium-sized: 92.0%). The comparison between EU countries and Slovenia is presented in Table 4.

**Table 4.** Internet broadband access (in 2007)

Enterprise category	EU 27 (in %)	EU 25 (in %)	EU 15 (in %)	Slovenia (in %)
Small	75	77	79	75
Medium-sized	88	90	92	92
Large	95	97	97	99

Source: Eurostat [5].

Slovenian medium-sized and large enterprises are in the same or even in better position regarding the broadband Internet access than the most developed countries in the EU (EU 15) (Table 4), which means that national infrastructure offers almost the same e-

business conditions that is offered to SMEs in the EU.

Some researched Slovenian enterprises used intranet and extranet network as well (Table 5).

**Table 5.** Intranet and extranet networks among Slovenian SMEs

Enterprise category	Intranets (in %)	Extranets (in %)
Micro	12.5%	13.4%
Small	21.4%	16.2%
Medium-sized	48.1%	16.1%

Extranets networks are almost equally spread among SMEs, as the differences among intranets usage (Table 5). Intranet networks are used more frequently in large enterprises (72.5%). The portion of extranets used in large companies is bigger (33.3%) as well.

### IT experts and SMEs

Different resources in SMEs are even scarcer than in large enterprises while outsourcing, especially for IT support, is a usual strategy in SMEs. Slovenian SMEs used the same strategy, micro and small enterprises more often than medium-sized and large enterprises (Table 6).

**Table 6.** IT in- and outsourcing (in 2006)

Enterprise category	Hiring IT services by companies at home	Hiring IT services by companies from abroad	Employed IT experts
Micro	42.2	3.2	6.9
Small	58.6	5.1	13.8
Medium-sized	82.2	14.7	41.0

IT experts have no great possibilities to be employed in SMEs, because enterprises do not employ them intensively (Table 6). More possibilities exist among large enterprises (85.4%). It is interesting that a great portion of IT services is hired from other companies – mostly from national companies. We expected that a larger portion of micro and small enterprises would hire IT services than the medium-sized ones, but this was not the case. In 82.2%, medium-sized enterprises used outsourced IT services (82.2%) even if they had IT work places in their companies (41.0%).

### B2B and B2C e-business activities

E-business or e-commerce was born before the World Wide Web (WWW) appeared in 1990. The first e-business applications are connected to the electronic funds transfer in 1970s and followed by electronic data interchange (EDI)

[11]. EDI, a technology used to transfer routine documents, was conducted through relatively closed and expensive networks that connected together large enterprises that could afford this kind of connectivity. EDI was not widely spread among Slovenian SMEs. Only 2.2% of micro, 1.3% of small and 3.9% of medium-sized enterprises used it. Even among large enterprises EDI was not intensive used – only 15.0% of Slovenian large enterprises used it for making orders. Micro and small companies exchange their data by using EDI mostly through the Internet on the other hand, every two medium-sized enterprise use closed networks as an EDI platform. The same situation is found among large enterprises. Closed networks are safer but also more expensive and therefore not so accessible to smaller companies.

Enterprises are presented on Internet by web pages, which can be used as a presentation

web page or as an e-business platform (Table 7).

**Table 7.** Slovenian SMEs web pages (in %)

Enterprise category	Presence of web pages	Products/services presented on web pages	Presence of Price lists on web pages	Web pages enable post-selling activities
Micro	40.1	35.9	17.9	11.7
Small	61.1	53.5	26.9	18.1
Medium-sized	84.0	75.4	46.2	22.4

Medium-sized enterprises are more active on the Internet (Table 3) than micro and small enterprises, but post-selling activities are presented only by one fifth of them. Large enterprises are almost all present on the Internet – 95.0% have their own web page, on which 91.7% of products and services are presented. But post-selling activities are

presented only by 31.3% of the enterprises with more than 250 employees.

Internet may be used for different purposes – finance and banking services are more spread than Internet usage for training or learning (Table 8). Internet is used for market research where data about market conditions are collected.

**Table 8.** Internet activities among SMEs

Enterprise category	Banking and Finance	Training and learning	Collecting data about market conditions
Micro	81.7	35.3	55.7
Small	91.2	44.5	71.2
Medium-sized	96.5	51.9	80.1

Orders in SMEs (Table 11) are more often supported by IT than invoices. Slovenian SMEs sent invoices electronically (3.0% of micro to 15.5% of medium-sized enterprises), and received them electronically (4.9% of micro to 7.9% of medium-sized enterprises). It is interesting that large enterprises sent more e-

invoices (15.4%) than they received them (13.3%).

In Table 9, data about enterprises that had purchased online during last year at least 1% of their purchases are presented. Purchasing e.g. e-buying can be performed through the Internet or/and other networks.

**Table 9.** Enterprise online purchasing (in 2007)

Enterprise category	EU 27 (in %)	EU 25 (in %)	EU 15 (in %)	Slovenia (in %)
Small	28	29	33	20
Medium-sized	34	36	41	22
Large	44	46	53	29

Source: Eurostat [5].

Despite the Internet broadband connection expandability (Table 4) there is a similar large gap between e-buying activities among

Slovenian enterprises and enterprises in other EU countries. The gap is larger in medium-sized and large enterprises than in small enterprises.

**Table 10.** Enterprise online selling (in 2007)

Enterprise category	EU 27 (in %)	EU 25 (in %)	EU 15 (in %)	Slovenia (in %)
Small	14	15	16	8
Medium-sized	20	22	24	14
Large	31	33	37	31

Source: Eurostat [5].

Medium-sized enterprises use IT more intensively than smaller companies. Production and logistics processes are not supported so intensively than other processes.

The ERP (Enterprise Resource Planning) systems are used in less than 10% of micro and in one fifth of small companies. In medium-sized enterprises, ERP systems are used in a half of them. 75.4% of large enterprises used

ERP systems. CRM (Customs Relationship Management) systems are less presented in SMEs and the differences are less evident than

with regard to ERP systems. CRM systems are not frequently used in large enterprises (37.5%) as well.

**Table 11.** IT to support business processes

Enterprise category	Orders	Production/Logistic	ERP	CRM
Micro	27.8	7.9	8.1	12.0
Small	40.0	16.5	20.7	19.2
Medium-sized	62.9	36.2	48.1	34.0

Encryption and digital certificates are used in 39.1% of micro enterprises, in 46.3% of small and in 59.0% of medium-sized enterprises.

### B2G e-business activities

The availability of public services online are measured by Capgemini and presented by

annual reports [1]. Austria is placed on the first place among European countries, succeeded by Malta, Estonia, Sweden, Norway and the UK (ibidem, 8). According to the Capgemini report [1] Slovenia has moved from rank 15 in 2005 to 7 in 2006. In the Table 12 business-to-government (B2G) services are presented.

**Table 12.** B2G among SMEs

Enterprise category	General B2G usage	B2G for acquiring information	B2G for acquiring forms	B2G for returning fulfilled forms	B2G for managing the whole process
Micro	59.3	53.3	48.9	36.3	29.1
Small	80.2	74.4	72.3	55.5	42.9
Medium-sized	93.6	91.5	89.5	79.6	68.1

As expected, the relations between businesses and the government are much more frequently supported by IT in the category of medium-sized enterprises (93.6%) than in small and micro enterprises. The government web pages are mostly used to acquire information about different affairs and to acquire needed forms. It is interesting that the whole B2G process is supported electronically, and more often used by medium-sized enterprises (68.1%) than large enterprises (64.6%).

and which are demanded by enterprises and individuals from the EU countries (Table 13). There are more government services available in Slovenia than in the EU 27 countries. Thus, it is not surprising that there are more enterprises (with more than 10 employees) in Slovenia (83%) that use the Internet to interact with public authorities (B2G) than in the EU countries, where there is no differences between the EU 15, the EU 25 or the EU 27 (Table 13).

Eurostat [5] follows governmental services that are offered via the Internet (supply side)

**Table 13.** E-government among EU countries

E-government services	EU 27 (in %)	EU 25 (in %)	EU 15 (in %)	Slovenia (in %)
E-government availability (supply side)	59	NA	NA	90
B2G (demand side)	65	66	66	83
C2G (demand side)	30	32	34	30

Source: Eurostat [5].

Among individuals more people per 100 used the Internet in the last 3 months for interaction with public authorities (C2G).

### CONCLUSION

Slovenian efforts in communication infrastructure (3.6% of GDP expenditure) resulted in a high level of broadband Internet connection that is above the EU countries

average (Table 4). The portion of the expenditure for IT purpose is below the EU countries, which may result in a lower extent of B2C and B2B e-business activities. It is obvious that the Internet, because of its accessibility, offers more possibilities for e-business activities to SMEs than others pre-Internet networks. Because infrastructure is not a problem anymore other factors could have an impact on the presence of e-business activities among SMEs. The main problem for the lack

of e-business activities in SMEs mostly lies in IT resources. SMEs could not afford to hire their own IT experts, therefore the majority of them outsource IT support. In a small country such as Slovenia, finding adequate companies, which offer IT services could be a real problem. Another problem that was found during our research is related to the software used for e-business activities. We found out that open source software is not used frequently among Slovenian enterprises – only 7.3% of surveyed micro enterprises, 11.5% of small and 15.5% of medium-sized enterprises used open source software. We supposed that open source solutions usage may lower e-business software costs and therefore helps SMEs to be more e-business active and to enlarge their markets. Our statement will be tested in the project that has just started.

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