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The Specifics of the Services Sector Determining the Introduction and Utilisation of Information and Communication Technologies

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Abstract

The services sector is characterised by a number of specifics. Their identification in ICT implementation in businesses facilitates the decision-making of services industries for such information technologies which allow businesses to differentiate their services from competitors and increase productivity. Therefore is important to identify the core activities of companies in relation to the nature of the production of services sectors, corporate strategies and services specifics.

Key words

ICT infrastructure, ICT implementation, services sector

JEL Classification: O31

Introduction

The implementation of ICT in itself does not represent a competitive advantage; at present its utilisation is crucially inevitable. It is necessary to launch such ICT which supports business processes leading to the fulfillment of corporate strategies. The effectiveness of implementation and utilisation of ICT in services is influenced by various specifications.

The aim of this paper is to identify the specifics of the services sector which influence the effective utilisation of information and communication technologies in service enterprises.

1 The position of the services sector in the EU economy

Over the past decades, the services sector has experienced dynamic growth and employment opportunities. The liberalisation of trade in services, the flow of foreign direct investments into this sector, the increasing importance of knowledge-intensive services characterised by high productivity have enhanced the potential of this sector. The actual position of the services sector expressed by key indicators of potential and performance can be characterised as follows:

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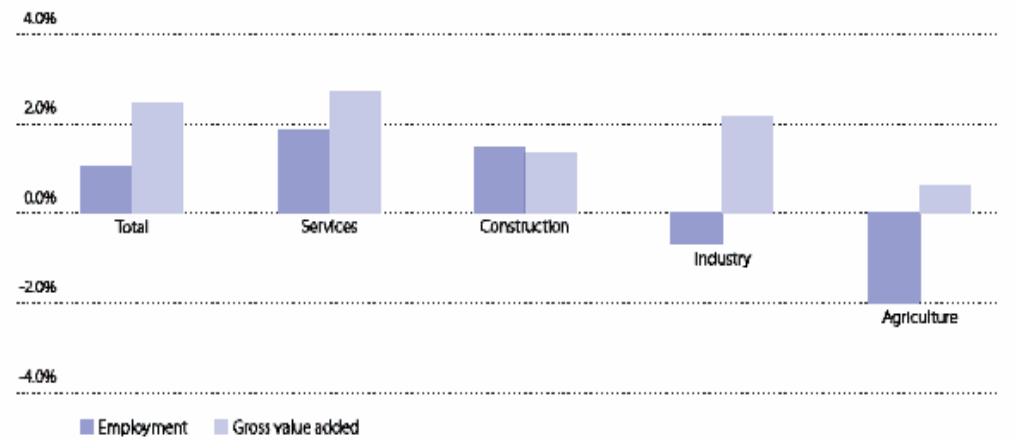
- It is the most important sector of the EU economy;
  In 2010, services accounted for 69.1% of total employment and generated 73.5% of gross added value in the EU-27. (Eurostat, 2011) Countries with the highest share of services in total added value, such as Luxembourg 84%, the Netherlands 73%, Belgium 76%, Denmark 73%, reported above-average values of GDP per capita (280, 133, 115, 123) (World Economic Forum, 2011; Eurostat, 2011);
- It is the most dynamic sector of the EU economy;
  The average annual growth of added value between 1995 and 2007 in the services sector reached more than 2%, hence a value higher than the annual growth rate of the economy as a whole (Figure 1);

Figure 1 Average annual growth in employment and added value in the economic sectors of the EU-27, in%, 1995-2007



Notes: Added value at constant prices in 2000, based on NACE agriculture sections A and B, Industry C – E, Construction F, Services G – P.
Source: European Commission. (2009). *Challenges for EU Support to Innovation in Services – Fostering New Markets and Jobs through Innovation*.

- Knowledge-intensive services (KIS) are the most promising components of the economy;
  The services sector is made up of sectors of knowledge-intensive services (KIS) [3] and services sectors without knowledge-intensity, or with low knowledge-intensity (LKIS). Knowledge-intensive services are characterised by high knowledge-based intensity, or high capital intensity, high degree of specialisation; their production is directed mainly to the consumption of inputs. The ability of the national economy in Europe to produce market-driven products of knowledge-intensive services serves as a determinant of its competitiveness. This relates to the characteristics of these products, which are distinguished by sophistication, high degree of added

[3] Knowledge-intensive services are represented by 50-51, 58-63, 64, 65, 66, 69-75, 78, 80, 84-93 classifications of NACE rev. 2. They include services of water, air, and space transport, post and telecommunications, financial intermediation (except for insurance and pension insurance), insurance and pension insurance (except for compulsory social security), secondary activities associated with financial intermediation, computer and related activities, research and development, other business services, education, health and social assistance, recreation, cultural and sporting activities. ('High-technology' and 'knowledge-based services' aggregations based on NACE rev. 2 January 2009).

value and the ability to satisfy the constantly changing demands of the business and the public sector through technological progress. KIS showed increasing levels in added value and the rate of employment in the EU-27 between 1995 and 2005; in 2005 they accounted for 45.9% of added value and 34.8% of employment.

It has been generally acknowledged that the development of the services sector expressed by performance indicators determines the competitiveness of the economy and acts as a driving force of economic growth in a knowledge-based economy. The OECD has defined three key determinants which support the development of the services sector (OECD, 2005):

1. the process of liberalisation and the openness of markets allow expansion into foreign markets,
2. the development of innovations and ICT services enables businesses to differ from competitors and increase productivity,
3. the increase in the importance of work organization, motivation, skills, human resources and corporate culture.

2 The current situation of societal informatisation in the EU and Slovakia

The implementation of informatisation policies and strategies in practice functions as the primary prerequisite for intensive promotion of ICT[4] in the services sector in the EU member states. Success and the intensity of implementation of ICT and the level of e-public administration providing services both to the business sector and citizens are regarded as the starting points which determine the initiative and possibilities of the business sector.

The most significant document, Europe 2020, accepted in 2010, deals with the implementation and utilisation of ICT as an answer to the economic crisis, a solution to the digital divide and a consistent fulfillment of the Lisbon Strategy. The European Commission has identified, within this strategy, three related and mutually reinforcing key priorities – shrewd, sustainable and inclusive growth, based on the principles of a knowledge society, development and sustainable growth. They result in five specific objectives and seven principal initiatives leading to economic progress at all levels, in-

[4] Information and Communication Technologies (ICTs) extend the concept of traditional information technologies (ITs) into the possibility of communication. In the past, information technologies and telecommunications represented separate areas. The convergence of information and communication technologies includes an entire range of hardware, software, groupware, netware and intellectual capacity, and thus boundaries between hardware and software cease to exist. Information and communication technologies emerge as an integrated system of network equipment and software, which allows efficient data processing, communication and the transformation of companies into e-businesses. Expressions such as information and communication technologies and information technologies are often used interchangeably. Information and communication technologies, however, include media which are used to record information, such as magnetic tapes/disks, optical disks (CD/DVD), various external storage drives, USB keys, technologies in the field of radio or television broadcasting and technologies for communication via voice and sound – microphone, camera, speakers, telephones and mobile phones. They also include computer hardware (personal computers – PCs, servers, mainframes, network devices), personal hardware which has shown rapid development over the past years (mobile phones, personal devices-PDA, MP3 players) and a selection of application software ranging from small spreadsheet programmes to the largest business packages and online software services. The term ICT is therefore more comprehensive since it involves technologies such as radio or television broadcasting and wireless mobile technologies.

cluding organizations at EU, national and local government level. As opposed to the Lisbon Treaty, Europe 2020 places greater emphasis on the determination of national goals and national policies.

Within the framework of intelligent growth, the Digital Agenda for Europe 2010–2015 aims "to deliver sustainable economic and social benefits resulting from a digital single market which is based on fast and ultra fast internet and interoperable applications" (European Commission, 2010).

The seven priority areas have been identified to fullfil the objectives: creating a single digital market, improving ICT standards and interoperability, enhancing confidence and Internet security, improving access for Europeans to fast and ultra fast internet, promoting excellence and innovations in ICT, improving digital literacy and inclusion, utilisation of ICT in resolving issues in society. Indicators of societal informatisation and the current state of achieved informatisation in the EU-27 and Slovakia are outlined in Table 1.

Table 1 Indicators of informatisation – position in the EU-27 and Slovakia

1.Broadband Internet	**Position in the EU-27**	**Position in Slovakia**
access to primary broadband Internet for all citizens in the EU by 2013	94% of citizens connected to DSL in 2009	78% of citizens connected to DSL in 2009
fast broadband services used by citizens with speed 30 Mbps by 2020 – 100% access of citizens	in 2010 - 23% of citizens (≥ 10 Mbps)	20% of citizens (≥ 10 Mbps) in 2010
broadband services with speed greater than 100 Mbps used by 50% of households by 2020		
2. Single digital market		
single market of telecommunications services – prices for roaming and national tariffs should equal zero by 2015		
E-commerce: 50% of citizens should be online shoppers by 2015	40% of citizens - 2010	33% of citizens in 2010
20% of citizens should be cross-border online shoppers by 2015	9% of citizens – 2010	9% of citizens – in 2010
E-commerce for SMEs: 33% of SMEs should buy and sell online by 2015	29% of SMEs bought and 14% sold online in 2010	14% of SMEs bought and 7% sold online in 2010
3. Digital integration of people		
79% of citizens should regularly use the Internet by 2015	65% of citizens in 2010	73% of citizens in 2010
60% of citizens of disadvantaged groups should use the Internet by 2015	41% of citizens in 2009	

Decrease the number of citizens who have never used the Internet to 15% by 2015	30% of citizens in 2009	22% of citizens in 2009, 17% in 2010
4. Public services		
e-public services used by 50% of citizens and 25% of citizens to send completed forms by 2015	41% of citizens and 51% of them to send forms in 2010	50% of citizens and 40% of them to send forms in 2010
5. Research and Innovations		
Increase the financing of research and development in the field of ICT: double public finances to 11 billion Euro	5,7 billion – in 2007	

Source: European Commission. (2011). Digital Agenda Scoreboard; Eurostat; author's own adaptation.

The main aim and benefit of the introduction of e-government is to improve the quality of services, rationalise processes of public administration, create an effective and efficient public administration and increase the competence of government. Most e-services of public administration provided for citizens and businesses exceed the scope of e-commerce, however their implementation is essential for improving the business environment and the further development of e-commerce.

Online services for businesses reduce the administrative burden on businesses, simplify and shorten the implementation period of services, increase transparency in transactions and government work. This category includes services such as customs declarations, value added tax, income tax, corporation tax, environmental permits, registration of legal persons, e-submission of monthly reports from employers to the Social Insurance, public procurement, and reporting statistics. The digitalization of these services contributes to the effective provision of business and administrative processes, and the creation of transparent business environments and the betterment of business infrastructures.

Other categories of services provided online are used for contact-maintenance with citizens. E-public administration provides citizens with equal access, regardless of regional, social and other differences, and increases the availability of services and information anywhere and anytime, and ensures higher transparency.

E-services for businesses in Slovakia are characterised by higher levels of sophistication than services to citizens. The monitored online services for businesses, except for e-services of environmental permits, achieved 100% sophistication; on the contrary, within online services to citizens, only 4 electronic services reached 100% sophistication (income tax, job search, disposal of personal documents, higher institution applications).

"Visibility" and "availability" of public procurement prior to the announcement of winners are regarded as important indicators. Only 47% of public procurement was "visible" on government portals in Slovakia in 2010, the EU-27+ average was 71%. The second indicator reported 76% in Slovakia, which was by 6% more than the EU-27+ average in 2010. In terms of sophistication, Slovakia ranked among the six countries with the best portals, especially in terms of usability, user orientation and the construction of e-services. Slovakia achieved favourable results in terms of government

services utilisation (50% of citizens), while the EU-27+ was 41%, 35% of citizens (EU-27+ 32%) and 88% of companies (EU-27+ 75%) utilised the Internet in interactions with public authorities (European Commission, 2010).

The development of e-businesses[5] is seen as another area within the informatisation of society. Surveys show that the level of ICT infrastructure and the extent of its utilisation are different in the EU member states. According to the most comprehensive index, European e-Business Readiness Index[6], the best infrastructure and the highest level of ICT utilisation were reported by Nordic countries such as Denmark, Sweden, Finland, Norway, and countries such as Germany, the Netherlands and Belgium in 2008. Another group of countries, Luxembourg, Ireland, the United Kingdom and Austria indicated above-average values of the EU-27+ in both areas. Countries such as France, Malta, Slovakia and Slovenia showed a higher penetration of ICT infrastructure than the EU-27+ average, but all countries of the third group, except for Malta, did not reach the EU-27+ average in the utilisation of ICT. Countries belonging to the fourth group lagged behind the EU27+ average in both areas. As compared with e-Business Readiness Index 2007, Slovakia progressed in the adaptation of ICT by 6 points, but in terms of ICT utilization it remained ranked 19th. Progress was recorded by Portugal, which moved from the fourth to the third group, and Belgium from the second to the first of the monitored countries, while France reported a decrease in the utilisation of ICT and dropped from the second to the third group of the EU27+.

Table 2 Sophistication of selected eGovernment services in the EU and Slovakia in 2010

E-government services	Placement in Slovakia	Outstanding leaders in the EU
Services for citizens		
Income tax	Among the best	Most EU member states
Job search	Among the best	Most EU member states
Personal documents	8th	
Motor vehicles registration	27th	
Planning permission	24th	
Police notifications	25th	Denmark, the Netherlands
Public libraries	Among the best	Sweden
Birth and Marriage certificates	23rd	The Netherlands
Higher education registration	Among the best	Most EU member states

[5] E-business – intra and inter-company processes and transactions between suppliers, customers, businesses and corporate teams, or business, work processes and business interaction with the external and internal environment electronically. E-business is the utilisation of electronic means for all business functions and processes.

[6] The utilisation of the Internet, personal web sites, employees access to computers, safety equipment, broadband, LAN, intranet and extranet was monitored in terms of ICT infrastructure facilities of countries. Indicators of the utilisation of ICT include the purchases and sales over the Internet or other electronic networks of enterprises, business IT connections with the internal corporate system, ICT connections with the external environment, internet banking usage, the sale of products through e-markets. Weights are assigned to the selected indicators.

Business services		
Social benefits for employees	Among the best	Most EU member states
Corporate income tax	Among the best	Most EU member states
Value added tax	Among the best	Most EU member states
Legal entities registration	Among the best	Most EU member states
Reporting for the Statistics Office	Among the best	Most EU member states
Customs declarations	Among the best	Most EU member states
Environmental permits	24th	Estonia. Slovenia
Public procurement	1st, 16th, 27th, (various levels of procurement process)	Ireland, Cyprus, Estonia, Slovenia

Source: EurActiv. (2011). *P. Druga: The EU is interested to know what we have developed*.

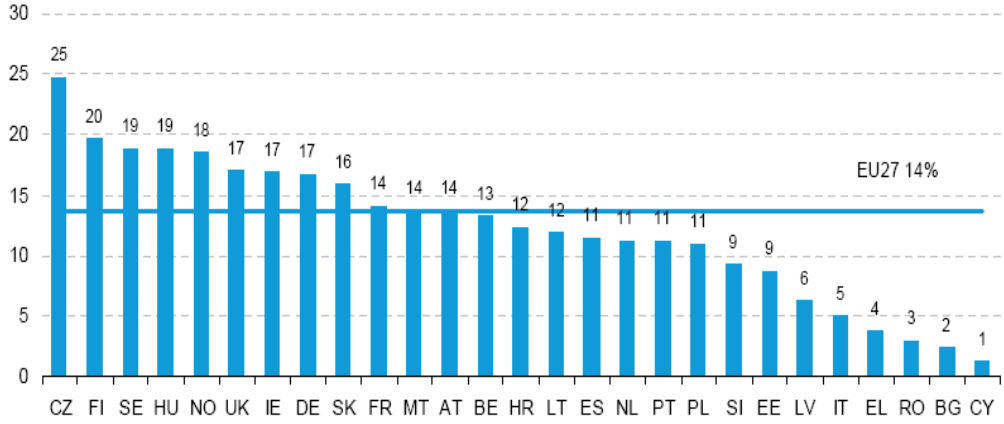
Access to fixed broadband connections in Slovak companies (76% of business) approximated to the EU-27 average (87% of companies) in 2011. Mobile broadband internet connections were used by 38% of enterprises in Slovakia (47% in the EU). Businesses in Slovakia demonstrated values higher than the EU average in indicators such as access to the internet, intranet and extranet. The results reveal that Slovak companies are motivated to ensure more effective and efficient ICT infrastructures which lead to increased productivity and competitiveness (Eurostat, Statistics in focus, 65/2011).

A partial indicator monitoring the degree of e-business utilisation is the application of ICT in business processes and the implementation of electronic business transactions. Figure 2 presents the proportion of sales of electronic commerce (e-commerce[7]) in the total turnover of European enterprises. Countries with the highest proportion include the Czech Republic, Finland, Sweden, Hungary, Norway, the United Kingdom, Ireland, and Germany. Slovakia with a value of 16% exceeds the EU27 average (14%).

However, below-average values were reported by Slovak companies in 2011 in online shopping – 21% of companies (the EU average is 35%), but Slovakia reached above-standard results in online sales, 16% of companies were involved in e-sales (the EU average is 15%). Countries reaching the highest proportion in e-purchase and e-sales include Denmark, Austria, the northern European countries, Ireland and Germany. Czech companies reported a proportion higher than the EU-27 average, 42% of businesses applied e-purchases and 27% used e-sales (Eurostat, 2011).

[7] E-commerce is a continuous part, component, or a subset of e-business. It is used to refer to any business processes or transactions carried out either totally or in part via electronic means of communication, especially the Internet, between two or more parties.

Figure 2 Share of e-commerce in total turnover in 2010 (%)

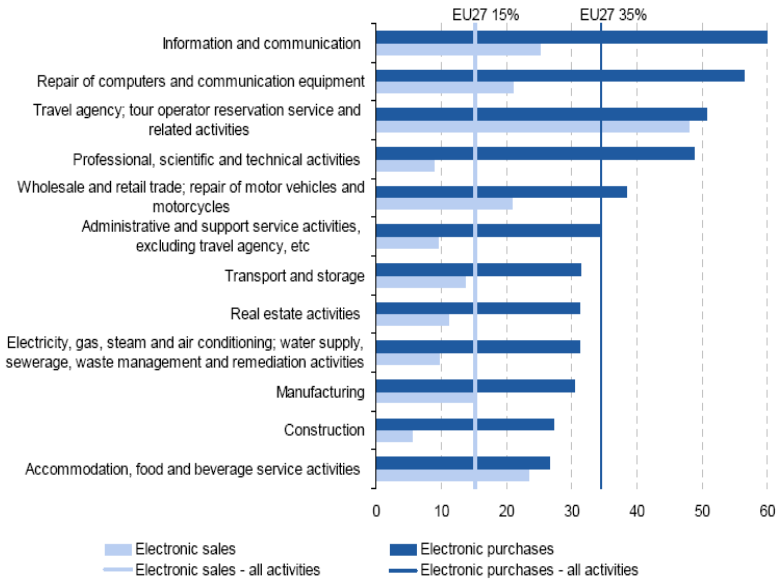


Source: Eurostat, Statistics in focus 65/2011.

A sectoral approach, however, shows significant differences. Values higher than the EU-27 average were reached in e-purchasing and selling by travel agencies, information and communications industries, the wholesale and retail trade, and motor vehicles overhauling.

A statistical survey clearly shows that, in comparison with manufacturing companies, e-commerce is more developed in most services enterprises. Except for transport industry, warehouses and real estate activities, companies in market services, except for the financial sector, achieved a value higher than the EU-27 average at least in one indicator. (Eurostat, 2011)

Figure 3 Electronic purchases and selling in selected branches in the EU-27 in 2010 (% of enterprises)



Source: Eurostat, Statistics in focus 65/2011

Similar tendencies were noticed in Slovakia in 2010. Most businesses apply e-sales in the wholesale and retail trade, motor vehicles overhauling (18%), transport (16%), accommodation (30%), catering (16%), information and communications services (27%). Higher than average values were reached in online purchasing by companies operating in information and communications (51%), professional, scientific and technical services (29%), wholesale and retail trade, and motor vehicles overhauling (25%) (Statistical Office of the Slovak Republic, 2011).

3 Specifics of the Services Sector Determining the Implementation and Utilisation of ICT

Services sector production is characterised by a number of specific features which have a significant impact on the quality of the provided services. The following specifics are regarded as important in ICT implementation in business processes:

- The services sector is heterogeneous[8]*. It is characterised by the diversity of activities in sectors or services divisions.*

  Business processes and the nature of production of the individual sectors determine the most effective utilisation and support of ICT. Significant effects achieved by the implementation of ICT can be seen if they are used in accordance with business strategies. The intensity of ICT utilisation directed towards employment and business processes is therefore differentiated in the services sectors. Cross-industry comparison of ICT utilisation is not relevant with regard to their orientation to business processes, it is only possible to compare the facilities with ICT infrastructure, a multi-sector comparison of ICT utilisation in the services enterprises provides more reliable explanations.

  Key areas of ICT utilisation, for example, in the tourism industry in the EU, include resource searching, sales, marketing and customer relationship, that is ICT implemented in business processes and directed at the external business environment. On the contrary, for companies of commercial and entrepreneurial services such as knowledge-intensive services, the integration of internal processes seems to be the most important, that is, the monitoring of working hours, access and exchange of information, knowledge management, team work between employees and others.

- *The services sector is dominated by small and medium-sized enterprises.*

  In most sectors, in terms of size, SMEs account for more than 90% of the market share; they employ more than two-thirds of all employees in the services sector. By comparison, in 2007, SMEs employed 66% of workers in the commercial and

[8] The services sector consists of NACE: G – wholesale and retail trade, motor vehicles overhauling, I – accommodation and catering services, H – transportation and storage, J – information and communication services, K – financial and insurance activities, L – real estate activities, M – professional, scientific and technical activities, N – administrative and support services, O – public administration and defense, compulsory social security, P – education, Q – health care and social assistance, R – arts, entertainment and recreation, S – other activities of services, T – activities of households as employers, U – activities of extraterritorial organizations and associations.

entrepreneurial services, 82% of workers in hotels and restaurants, 72% of workers in wholesale and retail trade, but only 9% of workers in production (Eurostat, 2011).

The uniqueness of the services sector seems to be the greatest barrier to the introduction of more sophisticated ICT. The utilisation of ICT systems such as ERP, SCM, CRM, for the support of knowledge management and online public procurement transactions and online sales especially in the core areas of ICT implementation derived from the specifics of production and distribution of individual sectors, guarantee the greatest benefits for the services businesses. The integration of internal and external processes then allows, for example, to make management and decision-making processes more effective, to ensure transparent business processes, and accelerate information transmission and processing, to create comprehensive and targeted analyses.

The creation of electronic partnerships, relationships and networks allows to eliminate underinvestment of small and medium-sized businesses and provides more opportunities to gain new markets, new contracts, which would not be available for companies otherwise. The utilisation of ICT outsourcing – comprehensive or partial, as well as the purchase of scalable ICT services enable business services to focus on the core of their activities, to monitor and revise expenses on ICT in accordance with the development of the businesses' turnover.

Information and communication technologies applied within destinations can promote international coordination, e-marketing and the sales of products and services. Sophisticated destination portals on the Internet enable direct contact between customers and services providers. Such an approach requires a high degree of coordination, cooperation, exchange of information and knowledge between the participating entities.

Cooperation with associations, chambers of services sectors and the establishment of electronic links in knowledge management support high investment intensity of specific information systems for SMEs and provide quick access to current information.

- *Suitable, capable and interested workforce is a key source for the production of services.*

Services are conducted through close interactions between producers and consumers. The consumer becomes a co-creator and co-producer of services. "A suitable, capable and interested workforce is a key resource for ensuring the company's turnover through adequate resources, capital input and demand in the current competitive conditions in the services market" (Michalová, 2010). A creative process requires a person armed with knowledge, which, through the dynamics of innovation and social change, is continuously completed and developed (Šikula, 2007). Human resources management, staff training and dissemination of ICT skills are therefore necessary for ICT introduction into the production process of business services.

Several authors like Delina, Vajda, Greenwood, Powell, Brynjolfsson, and Hitt emphasise dependence on working techniques, human capital, and business skills to

restructure business processes, change corporate cultures, which are brought forth through the adaptation of ICT. Mere investments in information technologies with no other changes and investments related to their integration and effective utilisation cannot ensure competitive advantage or increased productivity for the company.

Conclusion

The surveys clearly indicate that Slovakia is not sophisticated enough in the digitalisation of public administration. The adaptation of ICT in enterprises is more favourable; the results reveal obvious motivation of Slovak companies for ensuring a more effective and efficient ICT infrastructure. Motivation for adapting a more effective ICT infrastructure supported by the increase in productivity and competitiveness of enterprises cannot sufficiently improve the business environment of a country. State support, investments in information and communication technologies, their effective utilisation, systemic access, the cooperation of state, public and business sectors, and consistency in the introduction of programmes and information strategies into practice are regarded as crucially important.

Additional conditions of successful ICT implementation in business services include the acceptance of services sector specifics. The services sector is characterised by a diversity of activities across sectors or services divisions. Business processes and core business processes of the services sector determine the most effective utilisation and promotion of ICT. Their identification is important for the business services. It helps them in decision-making and the selection of such ICT which has the greatest impact on their business processes and overall corporate strategies.

The human factor with skills, abilities and knowledge plays a crucial role in ICT implementation and utilisation. Services companies, therefore, should pay heightened attention to the supervision of human resources, knowledge management and the corporate culture of business services.

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