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ITSM Adoption in European SMEs: Transition versus Developed Economies

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ABSTRACT

The goal of this paper is to investigate and better understand the differences in Information Technology Service Management (ITSM) adoption by small and medium sized enterprises (SMEs) between transition and developed economies in Europe. This study draws from research conducted among companies from six countries from Central and Eastern Europe within INNOTRAIN IT project financed by European Regional Development Found. The conducted analysis focuses on the comparison of ITSM-related issues between transition and developed countries. The particular issues investigated concentrate on the level of information technology (IT) adoption, strategic role of IT, and awareness and adoption of ITSM concept. The main findings suggest that, regardless of the national economy type, ITSM concepts are to a limited extent known and adopted by SMEs. At the same time, the results illustrate that transition economies lag behind developed economies in all investigated ITSM-related areas.

Keywords

IT Service Management, ITSM, IT adoption, SME, transition economies, developed economies, Europe.

INTRODUCTION

For many years IT has been one of the core business tools and, over time, has become very complex. Many new trends and constantly emerging novelties make IT management more and more difficult. Hopefully, new IT management methods and approaches help organizations with this complexity. Among these approaches we may distinguish two of vital significance for the modern enterprise: IT governance and ITSM. In both areas there exist frameworks based on the best practice concept. Such frameworks as ITIL, COBIT, MOF, IBM ITSM, and HP ITSM are well known and employed by large companies for many years. However, they are focused on the needs of big companies with large IT infrastructure and with rich resources and facilities.

Simultaneously, SMEs usually do not have such big requirements and, on the other hand, have limited resources to handle their IT solutions. Although ITSM is a common topic of interest for practitioners¹ as well as researchers (Galup, Quan, Dattero and Conger, 2007; Kumbakara, 2008; Marrone and Kolbe, 2011; van Bon, 2002), its application in SMEs is rarely evaluated (Dibbern and Heinzl, 2006). Despite the fact that most of the institutions that have developed ITSM frameworks prepared some versions for SMEs (ISACA, 2012; OGC, 2009), the issue of ITSM adoption among SMEs still calls for further research.

The need for research on ITSM adoption among SMEs is especially vital for transition economies (TEs) that are economies in transition from communist style central planning to free market systems (Roztocki and Weistroffer, 2008b). This is mainly due to the scarcity of research on IT adoption in TEs and the fact that businesses in transition economies experience different characteristics and considerations than organizations in developed economies (DEs). Therefore, this study seeks to identify and better understand issues connected with ITSM adoptions by SMEs in transition and developed economies. The particular research question involved in this study is:

- What is the difference in ITSM adoption by SMEs between transition and developed economies in Europe?

The study starts with the short description of the research background and than moves to the explanation of the research methodology. Next, the results related to ITSM awareness and adoption are presented and are followed by the discussion of findings. The paper ends with description of further research and concluding remarks.

¹ There are a lot of portals dedicated to ITSM approach as well as to specific ITSM frameworks, for example: <http://www.itsm.info>, <http://www.itsmgroup.pl/>, <http://www.itil-itsm-world.com/>, <http://www.iti-officialsite.com/>, <http://www.isaca.org/Knowledge-Center/COBIT/Pages/Overview.aspx>.

RESEARCH BACKGROUND

SMEs in Europe

Small and medium enterprises (SMEs) are key business players in European market. The number of organizations of this kind in Europe and also their influence on employment and economy make SMEs important objects of analysis. Eurostat (2011, p.10) defines SMEs as enterprises with fewer than 250 employees, provided that they are independent (of other enterprises) and do not have sales that exceed EUR 50 million or an annual balance sheet that exceeds EUR 43 million. For statistical purposes employment size is usually used to represent the size of an enterprise: large (250 or more people employed); medium-sized (50 to 249); small (10 to 49); and micro enterprises (less than 10). In all European countries SMEs represent more than 99% of all businesses. Most of the SMEs in the European Union are micro companies (around 92%) with less than ten employees and quite often they are self-employment entities.

SMEs are also very important players on the market since they employ more than half of people in all analyzed European countries. SMEs provide two out of three of the private sector jobs and contribute to more than half of the total value-added created by businesses in the EU. Furthermore, SMEs are the true back-bone of the European economy, being primarily responsible for wealth and economic growth, next to their key role in innovation and R&D (EC, 2012). In 2010, less than 21 million of SMEs provided more than 87 million of work places in EU countries (see Table 1). Despite the fact that SMEs have smaller access to resources, their impact to added value is still bigger than the large companies.

	Micro	Small	Medium	SMEs	Large	Total
Enterprises						
Number	19,198,539	1,378,401	219,252	20,796,192	43,034	20,839,226
%	92.1	6.6	1.1	99.8	0.2	100
Employment						
Number	38,905,519	26,605,166	21,950,107	87,460,792	43,257,098	130,717,890
%	29.8	20.4	16.8	66.9	33.1	100
Gross value added						
EUR Millions	1,293,391	1,132,202	1,067,387	3,492,979	2,485,457	5,978,436
%	21.6	18.9	17.9	58.4	41.6	100

Note: Adapted from (Wymenga, Spanikova, Derbyshire and Barker, 2011, p. 8)

Table 1. Number of Enterprises, Employment and Gross Value Added in EU-27, by Size Class, 2010 (Estimates)

ITSM Concept

ITSM is a subset of Service Science that focuses on IT operations such as service delivery and service support. In contrast to the traditional technology-oriented approaches to IT, ITSM is a discipline for managing IT operations as a service that is process oriented and accounts for 60% - 90% of total cost of IT ownership (Fleming, 2005; Galup, Dattero, Quan and Conger, 2009). ITSM is focused on business and client needs and uses good practices as a frame to standardize IT related activities within the company. The differences between traditional approach to IT and ITSM have been illustrated in Table 2.

Traditional IT	ITSM
Technology focus	Process focus
“Fire-fighting”	Preventative
Reactive	Proactive
Users	Customers
Centralized, done in-house	Distributed, sourced
Isolated, silos	Integrated, enterprise-wide
“One off”, adhoc	Repeatable, accountable
Informal processes	Formal best practices
IT internal perspective	Business perspective
Operational specific	Service orientation

Note: Adapted from <http://www.itsm.info/ITSM.htm>

Table 2. Traditional Approach to IT versus ITSM

Overall, ITSM has grown out of the increasing complexity of IT and the growing maturity of IT management (Conger, Winniford and Erickson-Harris, 2008). ITSM can be defined as a strategy by which information systems are offered under contract to customers and performance is managed as a service (Pollard and Cater-Steel, 2009). ITSM adoption may yield numerous benefits by helping companies to improve their IT organizations and become more flexible and cost effective. ITSM is process-focused and facilitates interactions between technical IT personnel and business customers and users.

ICT in Transition and Developed Economies

Transition economies are defined as economies in transition from communist style central planning to free market systems (Roztocki and Weistroffer, 2008b). The term transition economies is connected with the concept of emerging economies that are understood as a subgroup of developing economies and consist of countries revealing low, but fast growing, per capita income and with administrations dedicated to economic liberalization (Roztocki and Weistroffer, 2009). Most of transition economies can be classified as emerging economies. Transition economies experience fast changing laws and regulations, mostly strong governmental control, and continuous and fast economic growth (Roztocki and Weistroffer, 2011b).

Companies in transition economies have different characteristics from businesses in developed markets (Roztocki and Weistroffer 2008a). In general, labor costs in transition economies are relatively low, however, on the other hand, capital is in short supply. The differences in businesses' characteristics and strategic objectives are connected with differences in the process of information technology (IT) adoption. In this respect, companies in non-developed countries are often affected by difficulties with lack of IT knowledge and experience, lack of long term strategic thinking, and inadequate IT infrastructure and maturity (Doucek and Nedomova, 2011; Huang and Palvia, 2001; Roztocki and Weistroffer, 2008b). In general, in transition economies the role of people and problems with financial resources can be significantly greater than in developed countries (Klčová, Šulová and Sodomka, 2009; Soja, 2008, 2011).

IT industry in transition economies is strongly affected by IT-related foreign investments (Dobija, Klimczak, Roztocki and Weistroffer, 2010). However, the process of transforming investment in IT into revenues is becoming increasingly complex in transition economies. The major inhibitor in this process relates to lack of necessary socio-technical know-how to manage this complexity (Samoilenko, 2008).

Despite the important role of transition economies in global economy and different IT adoption considerations experienced by them, research works on IT investments in transition economies are scarce. On top of that, much of the research that is undertaken on IT in transition economies is still carried out by researchers based in developed countries (Roztocki and Weistroffer, 2011a). This illustrates the need for conducting research on IT adoption among transition economies and was one of the motivating factors for the authors of this study.

RESEARCH METHODOLOGY

For the purpose of investigating the differences in ITSM adoption between transition and developed economies in Europe, this study focuses on the following areas:

- IT awareness and adoption – to what extent do the companies know and adopt the current IT trends and solutions?
- Strategic role of IT – how do the companies plan their IT activities, to what extent do they connect IT with business strategy?
- ITSM awareness and adoption – how do the companies know and use ITSM and related concepts?

In order to investigate the ITSM adoption-related issues, an exploratory survey has been conducted among companies from six regions from Central and Eastern Europe. The respondents have been requested to answer questions related with the abovementioned areas describing the awareness of ITSM-related issues and the extent of ITSM adoption in their companies.

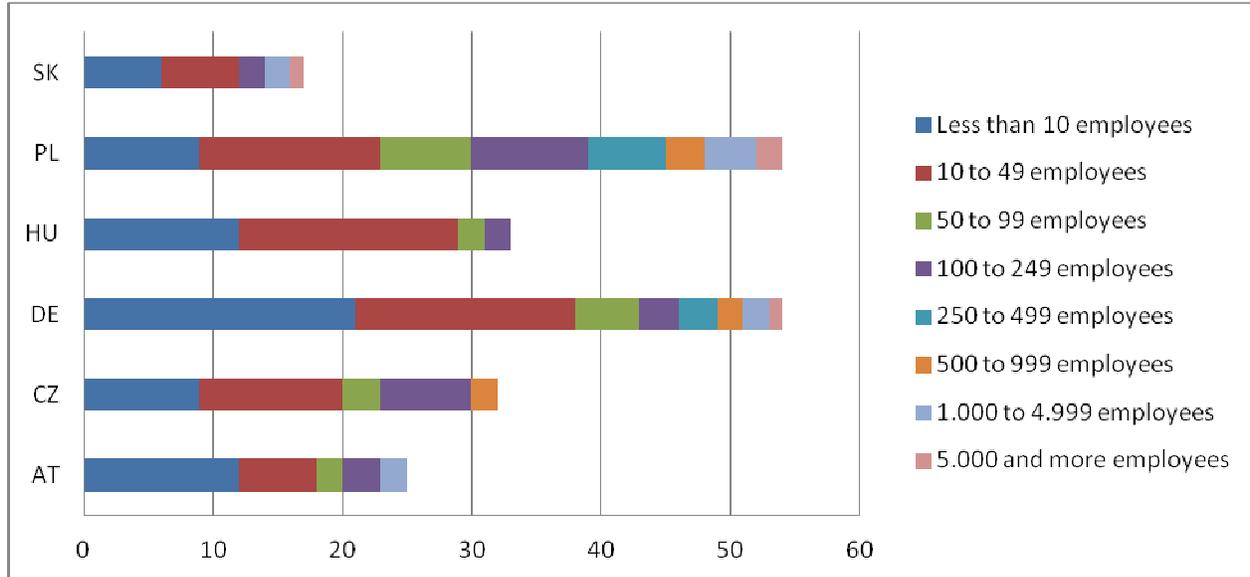
The exploratory survey was part of the broader research conducted within the INNOTRAIN IT² project financed by European funds. The main goal of the ongoing INNOTRAIN IT project is to disseminate ITSM approach among European SMEs by creating a new method tailored for SMEs and train SMEs managers and employees to use this method. The project is taking place in 6 European regions in Austria, Czech Republic, Germany, Hungary, Poland, and Slovakia.

The initial step of the project was to diagnose the actual situation as regards ITSM awareness and usage by European SMEs. To this end, the exploratory survey has been conducted among the all aforementioned regions. As a result of conducted research, 215 representatives of companies completed the survey and 185 respondents came from SMEs. The surveyed

² More about INNOTRAIN IT project can be found on www.innotrain-it.eu.

countries include two developed economies: Austria (AT) and Germany (DE) and four transition economies: Czech Republic (CZ), Hungary (HU), Poland (PL), and Slovakia (SK). The acronyms in parentheses are used as country identifiers throughout the paper. In general, 79 respondents from developed countries completed the survey and 136 answers came from transition economies. The structure of respondents by country and company size is presented in Figure 1.

Figure 1. Number of Respondents by Country and Company Size

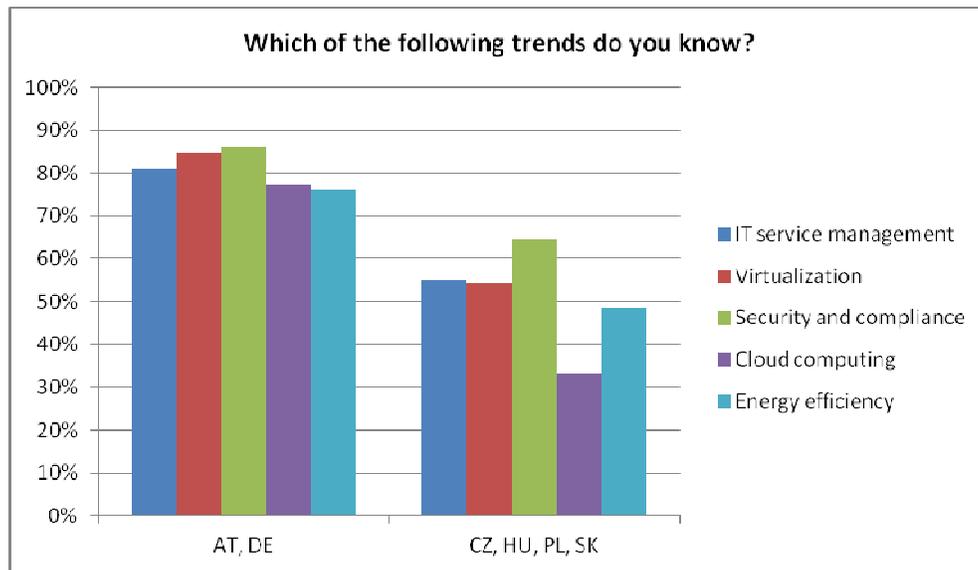


RESEARCH RESULTS: ITSM ADOPTION IN EUROPEAN SMES

IT Awareness and Adoption

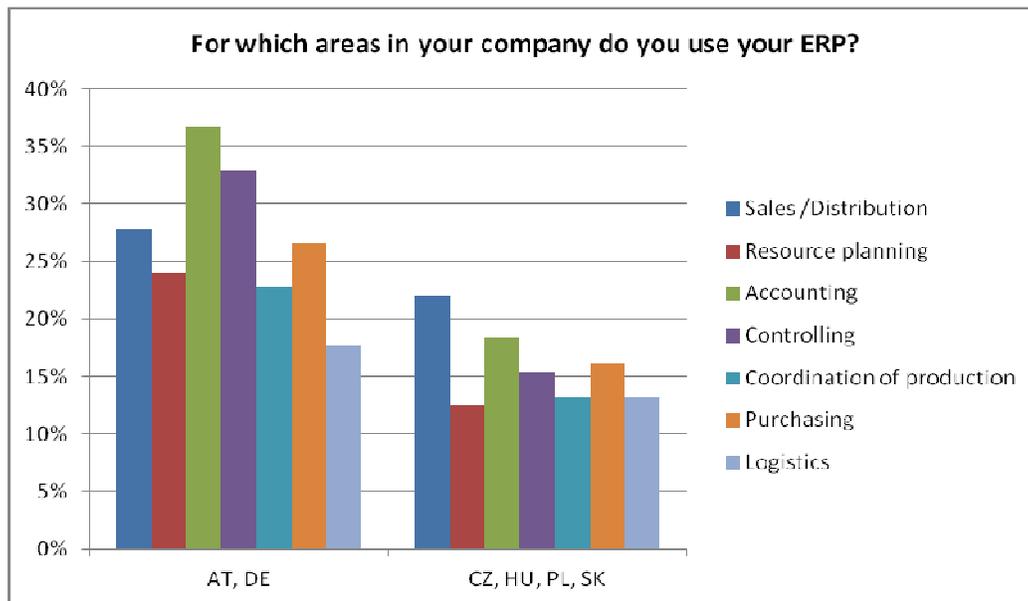
The respondents have been asked a question regarding their awareness of contemporary IT trends. The particular issues investigated include ITSM, virtualization, security and compliance, cloud computing, and energy efficiency. The distribution of the respondents answers has been presented in Figure 2. The results illustrate that the awareness of current IT trends is significantly smaller among transition economies with respect to all issues examined. Interestingly, respondents from transition economies revealed the smallest awareness of cloud computing.

Figure 2. Awareness of Contemporary IT Trends



One of the most sophisticated and complex IT-related investments relate to the adoption of Enterprise Resource Planning (ERP) systems. Systems of this kind, when adopted within their full scope, are able to integrate all areas of the whole company (Volkoff, Strong and Elmes, 2005). Nonetheless, ERP adoptions introducing the system modules into several crucial areas of the company within the same project are very challenging and risky endeavors (Soja, 2010). The respondents have been asked to indicate the areas of the operation of their ERP systems. The results, presented in Figure 3, show that the scope of ERP adoptions in respondent companies is not very broad in general, regardless of the level of national economy development. What is more, among transition economies, except for sales/distribution and logistics to a certain extent, the level of ERP modules adoption is significantly lower.

Figure 3. Areas of ERP Adoption

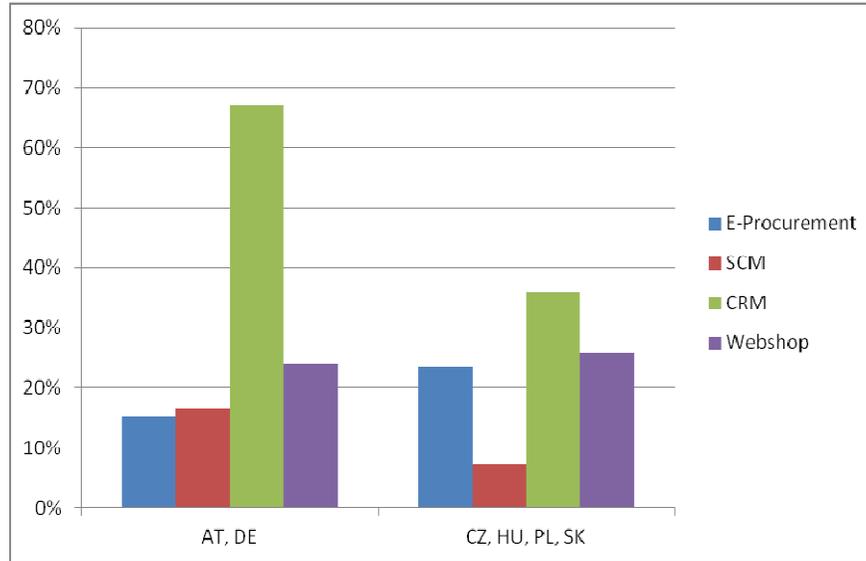


Modern companies integrate their ERP solutions with company’s clients and suppliers using various subsystems such as Customer Relationship Management (CRM) system and Supply Chain Management (SCM) system. The solutions of this kind, offering capabilities for inter-organizational integration, are called Enterprise Systems (ES) and represent the next step of evolution of ERP systems (Volkoff et al., 2005). Therefore, the respondents were asked to indicate systems supporting

their inter-organizational activities. Figure 4 reveals interesting and varied findings as regards inter-organizational integration in transition and developed economies.

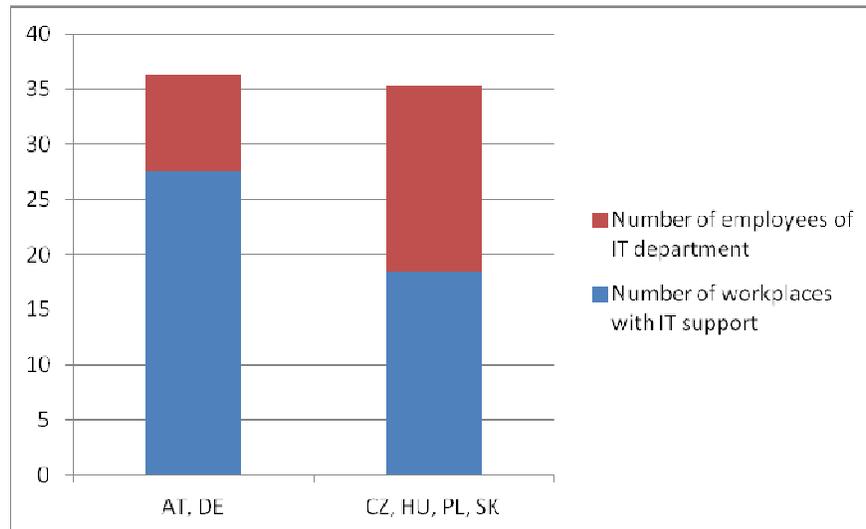
First, the findings suggest that companies in developed economies are more focused on their clients, revealing the significantly higher ratio of CRM adoption and integration with ERP. However, at the same time, companies from transition economies reveal the similar levels of Webshop adoption and IT integrations with their external partners as developed economies. This is connected with the second main issue, i.e. that companies from transition economies seem more focused on their suppliers and reveal the higher rate of e-procurement than developed countries. It should be noted that, at the same time, the level of SCM adoption in transition economies is two times lower than the one in developed countries. Nonetheless, both levels of SCM adoption are low and should be interpreted with caution.

Figure 4. Inter-organizational Integration



The level of IT adoption within the company can be illustrated by the number of workplaces that require IT support and, on the other hand, by the number of employees in the company’s IT department. The average number of these variables were calculated for SMEs and the results are visible in the Figure 5. The data interestingly suggests that transition economies reveal the significantly smaller number of workplace that require IT support and, at the same time, they employ considerably greater number of IT people.

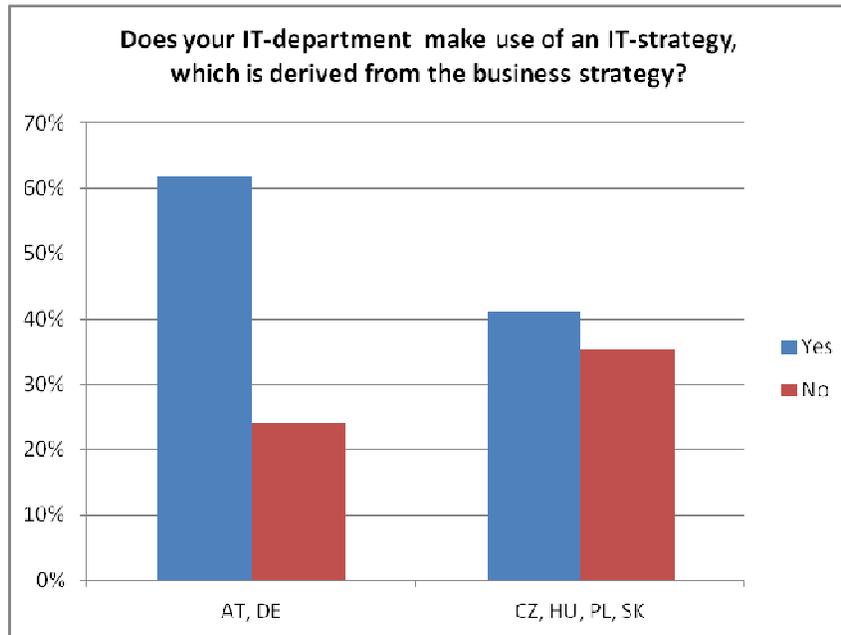
Figure 5. IT Support in SMEs



Strategic Role of IT

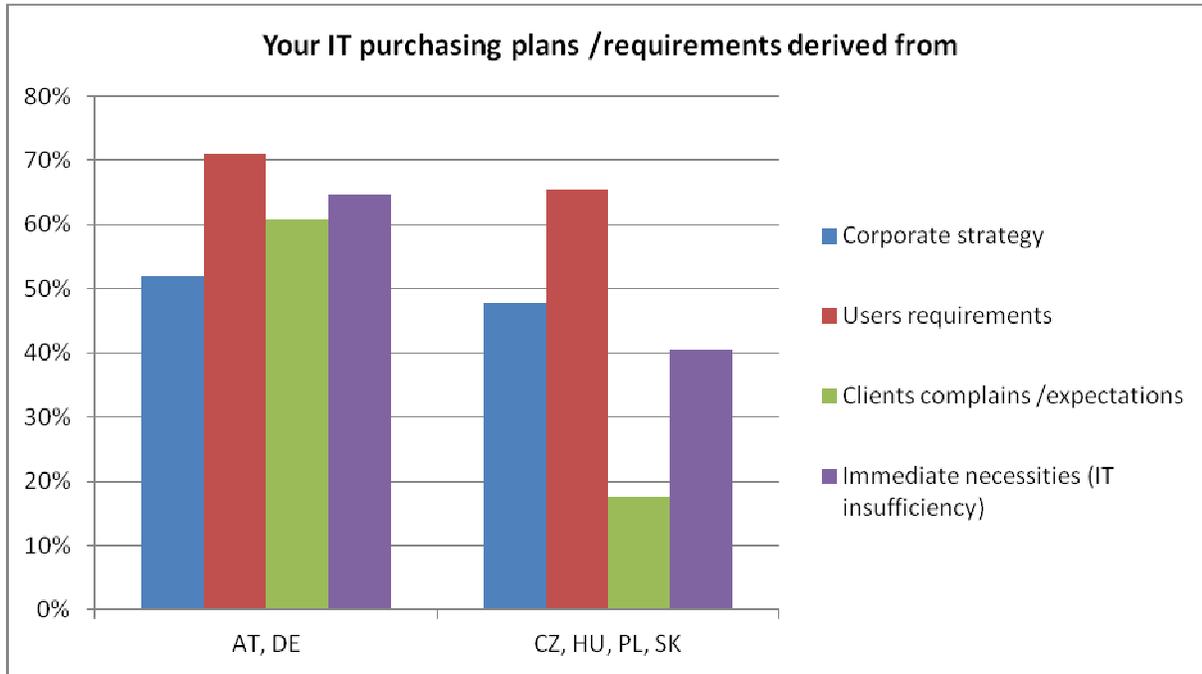
In a contemporary enterprise, IT department is guided by an IT strategy which is elaborated by the company's management on the basis of the corporate strategy. The gathered data revealed that companies in transition economies pay less attention to business strategy and its alignment with IT strategy (see Figure 6). While 60% of companies from Austria and Germany (i.e. developed economies) refer to IT strategy as a result of business strategy, only 40% of enterprises from transition economies declare the same rule. On top of that, almost 40% of the latter admit that their IT departments do not use IT strategy.

Figure 6. IT Strategy Employment by IT Departments



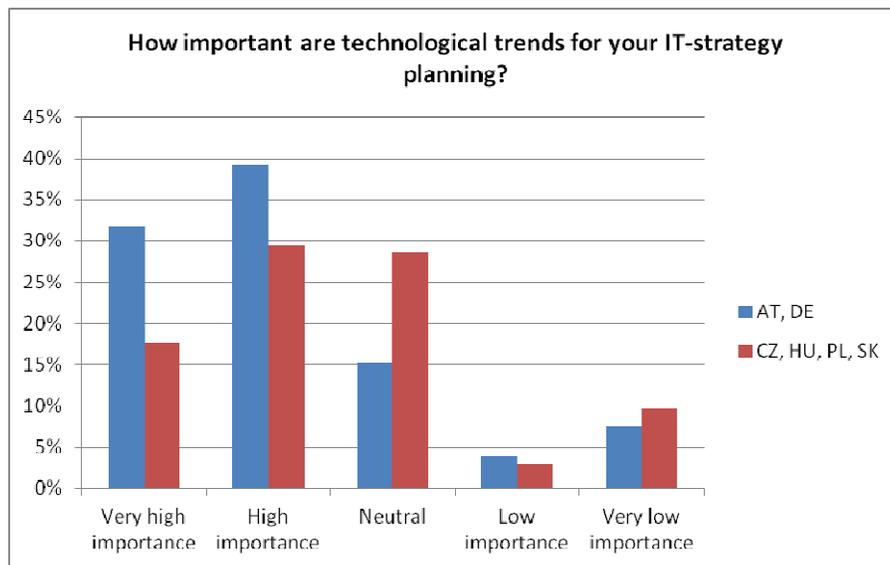
A good illustration of how the companies incorporate their business strategy into their IT strategy is provided by the actual sources of IT purchasing plans employed by the companies. With respect to this issue, the respondent have been asked to indicate if their IT purchasing plans are derived from corporate strategy, users requirements, client complaints/requirements, or were caused by immediate demand. The results, shown in Figure 7, interestingly illustrate that companies used corporate strategy and user requirements at similar level regardless of national economy development. However, the greatest difference relates to clients' expectations and complaints. It turns out that in transition economies, despite the high level of the incorporation of user requirements, companies do not take into consideration clients expectations and complaints.

Figure 7. Basis of IT Purchasing Plans



Another issue connected with strategic role of IT related to the importance of technological trends in IT strategy planning. As illustrated in Figure 8, companies from transition economies pays considerably less attention to the current technological trends in their IT strategy planning.

Figure 8. Importance of Technological Trends for IT Strategy Planning



ITSM Concept Awareness and Adoption

In order to investigate the level of ITSM awareness and adoption among the companies, the respondents have been asked a question about their familiarity with well know ITSM frameworks. The results illustrate that in two developed economies, i.e. Austria and Germany, almost 70% of respondents indicated ITIL as a known framework. However, as regards transition economies, only 30% respondents specified ITIL a known framework (see Figure 9). Nevertheless, ITIL should be

considered as the best known ITSM method among the examined firms. Interestingly, IBM SM is quite popular among the respondents from transition economies, its knowledge is comparable with the familiarity with ITIL. Overall, with respect to all listed ITSM frameworks, their popularity among the respondents from transition economies was considerably lower than the respondents awareness from developed economies.

A very interesting issue refers to the comparison of knowledge about ITSM frameworks with ITSM methods usage (compare Figure 9 and Figure 10). It turns out that in developed economies, although the awareness of methods is quite high, only around 20% of companies apply them. As regards transition economies, knowledge about ITSM frameworks is rather poor, reaching in some cases a maximum of 30% and only 8% of companies apply any ITSM method. As quite many of the analyzed companies are very small (less than 10 employees), lack of adoption of existing ITSM approaches can be explained. However, what can be a matter of concern is lack of awareness about ITSM methods in transition economies. The usage of ITSM approach should be related to the current needs of companies but for company’s future development and innovation managers should be aware of opportunities given by ITSM.

Figure 9. ITSM Methods Awareness among Companies

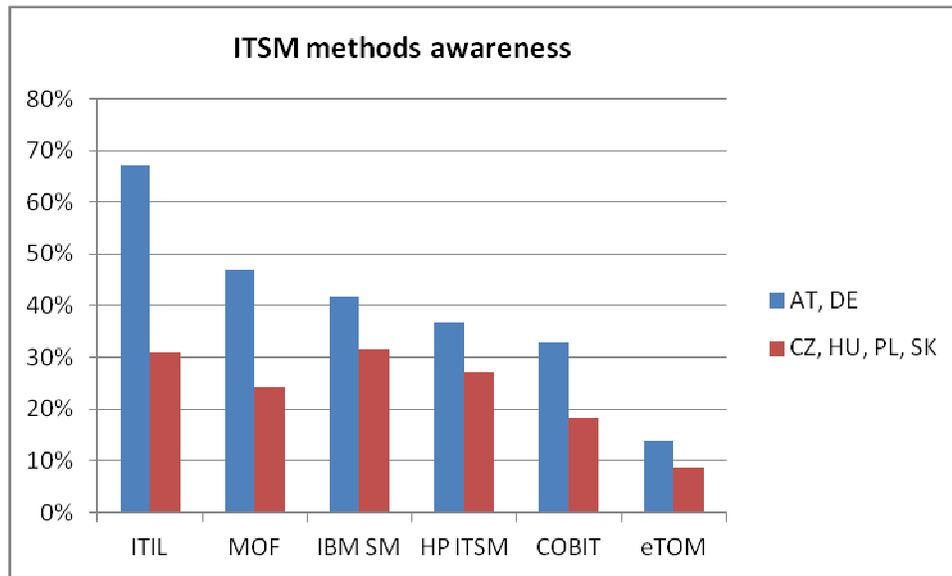
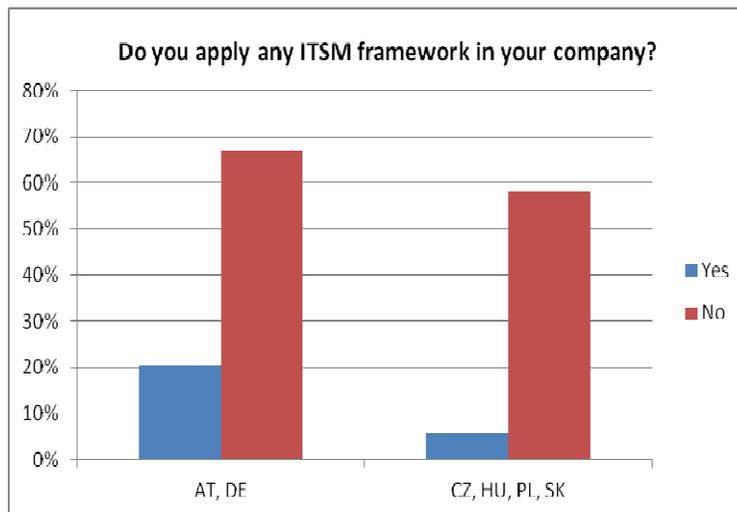
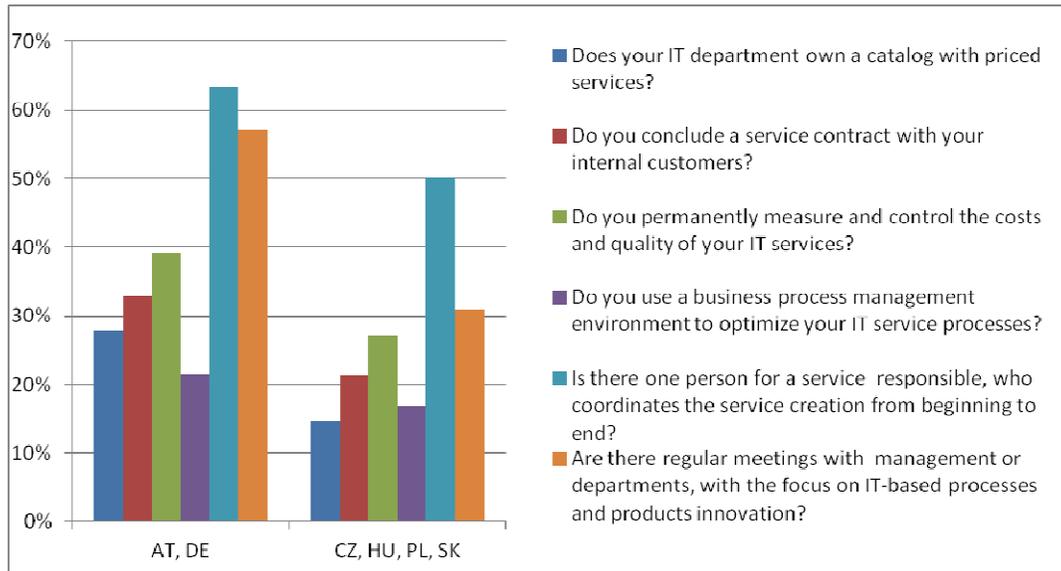


Figure 10. ITSM Methods Application



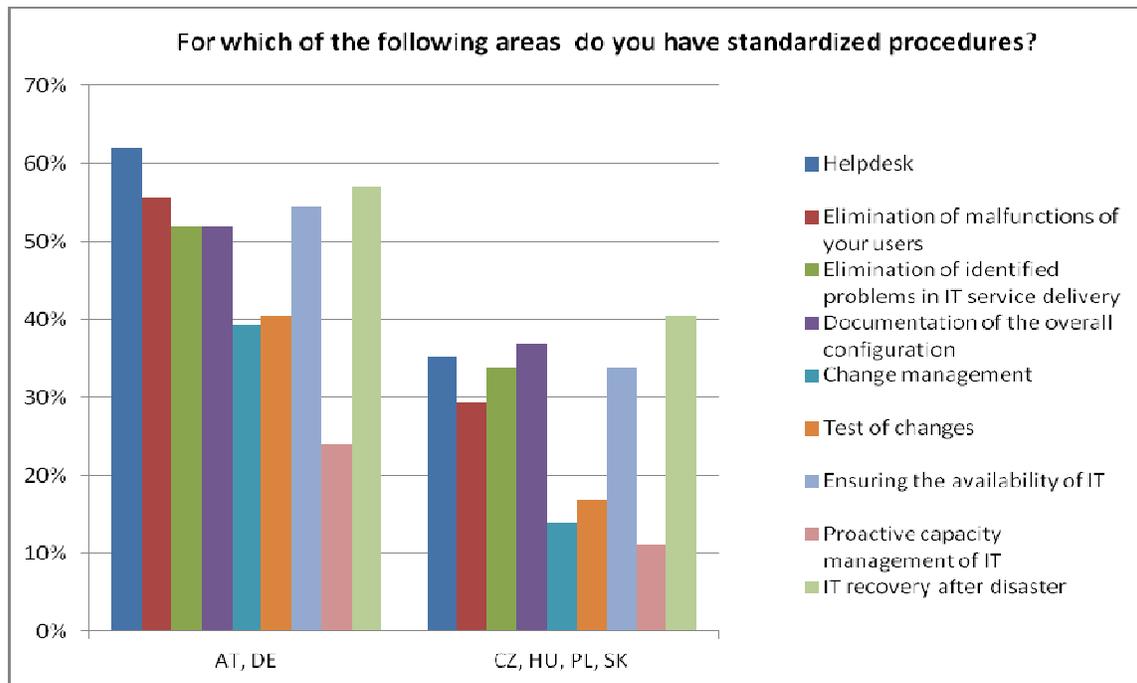
Although ITSM framework awareness is relatively poor in transition economies, interestingly, it turns out that quite many companies from transition economies use approaches typical of ITSM. Particularly, 50% of investigated companies in transition economies delegate single person responsible for service development (see Figure 11), quite many of them conduct regular meetings around IT based innovations (more than 30%), control costs and quality of IT services (almost 30%), and set internal contracts about services (more than 20%). This illustrates the need for ITSM approach in SMEs and, together with data presented in Figure 12, confirms the necessity and purposefulness of ITSM use in SMEs.

Figure 11. Approaches to IT Services



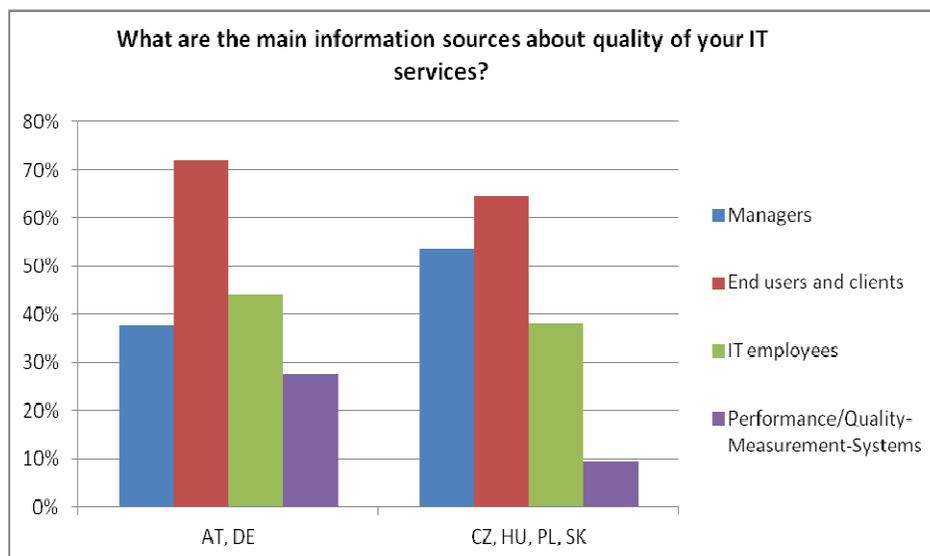
The data shown in Figure 11 do not differentiate developed and transition countries as much as data shown in Figure 12 related to standard procedures. In all aspects companies in Austria and Germany seem to operate their IT services better than those in transition economies. For some criteria the differences are almost double (helpdesk, elimination of malfunctions, change management). The areas that are in relatively good condition among transition economies cover the elimination of identified problems in IT service delivery and documentation of the overall configuration.

Figure 12. Use of Standard Procedures



Another issue investigated with respect to ITSM practices among European SMEs refers to the assessment of IT services quality. To this end, the respondents have been asked about the information sources about quality of their IT services. The respondent opinions, shown in Figure 13, reveal differences among developed and transition economies and indicate less ordered approach in companies from transition economies. The main differences refer to the first (managers) and last source of information (performance and quality measurement systems). This indicates that companies in transition economies tend to rely more on managers' opinions and less on impartial measurements.

Figure 13. Information Sources about IT Services Quality



DISCUSSION OF FINDINGS

Key Issues in Transition versus Developed Economies

The findings of this study suggest that, despite twenty years that passed after political transformation in European transition economies had started, the transition process in post communist countries investigated in this paper is still going on. There is still a noticeable gap between developed countries and those from the post-communist bloc. Although access to IT tools is similar for all examined countries, their exploitation in transition economies is noticeably smaller. Companies in transition economies use less sophisticated IT solutions, their activities are standardized to a smaller extent, and they need more IT specialists to maintain existing infrastructure as compared to enterprises in developed countries.

The reasons of such a situation might be connected with lack of awareness of new methods and concepts (compare Figure 3). Another issue contributing to the lower level of IT maturity among transition economies might be connected with strategic approach to IT. In particular, strategic approach to IT is more visible in SMEs in Austria and Germany than in four transition economies investigated in this study (see Figures 7 and 9).

Companies in transition economies seem to pay less attention to business strategy and its alignment with IT strategy. While 60% of companies in Austria and Germany refer to IT strategy as a result of business strategy, only 40% of enterprises in transition economies do that and, on the other hand, almost 40% admit that their IT departments do not use IT strategy (see Figure 7). Overall, the results show that SMEs in transition economies reveal lower IT level of maturity in all investigated areas, as compared to those from developed countries, and lack of strategic approach to IT can be an important reason for that.

It is interesting to compare ITSM-related activities, presented in Figures 11 and 12, with knowledge of ITSM frameworks and its use, as shown in Figure 10. It appears that a significant number of companies in both economies see the purposefulness of such an approach, however, due to some reasons, they do not apply it. A probable reason of such a situation can be connected with employment size. In fact, employees in SMEs have to be more flexible and usually they have a wider range of responsibilities and are supposed to be skilled in many areas. As existing ITSM approaches are complex and need IT expertise, therefore its use in SMEs in both types of economies is somehow understandable. Investigating these reasons might be an interesting avenue of further research.

Lessons Learned

Undoubtedly, IT can effectively and efficiently support company's business activities, however, a key success factor is connected with purposeful and conscious IT adoption. ITSM, beside process approach and client orientation, brings business and IT strategy alignment which should be considered as a driving force for business development. ITSM gives possibility to well organize outsourced IT services which should be beneficial for SMEs as their human resources are relatively smaller than those of big organizations. Although ITSM is known for a decade, its awareness among SMEs in both types of economies is rather poor. This situation calls for improvement especially in the case of less developed countries that need sophisticated ITSM-related solution to close the economic gap. In consequence, transition economies seem to be a big market with great potential for IT developers and suppliers of ITSM-related solutions.

In many of the examined companies the use of IT seems to be limited and unstructured. A lot of them do not integrate IT with business strategy. As some of the responding companies were microenterprises with less than 10 employees, their business requirements do not need sophisticated IT solutions. Nonetheless, IT should be considered as a major factor influencing business strategy.

ITSM approach is based on best practices and as such might be especially beneficial for companies in transition countries. In particular, these companies can benefit from best practices by using structured frameworks already developed and experienced by others. This might be helpful in catching up developed countries and may be a special "reward for being delayed".

Limitations and Further Research

The main limitation of this study is connected with generalization of findings, which should be done with caution. This is due to the fact that the conducted research should be treated as an exploratory study which was limited by the area of the INNOTRAIN IT project and the authors did not have opportunity to analyze other European countries. It should be also mentioned that all surveys were conducted in national languages and some terminology used might have had influence on final results. Also, economic crisis could have influenced some research results due to unsure future plans and activities, mainly with respect to strategic perspective.

The question arising from the presented research is partly related to ITSM adoption in SMEs in both types of countries and refers to the main reasons of distance between developed and transition economies.

1. What is the reason for a limited ITSM adoption in SMEs? Is it lack of awareness? Is it lack of resources/skills? Or maybe it is connected with lack of suitable frameworks?
2. From the economic perspective, the following question could be interesting: Was it feasible to bridge the gap between post-communist countries and the so-called old Europe over the past 20 years? How many more year will it take? What are the main reasons for a still big distance in IT adoption? Are these technical skills and experience or rather organizational issues?

CONCLUSION

This study investigated issues connected with IT Service Management (ITSM) adoption among European SMEs. In doing so, it drew from research conducted in two developed countries: Austria and Germany, and four transition economies: Czech Republic, Hungary, Poland, and Slovakia. The performed analysis allowed us to determine what are the main differences between transition and developed economies with respect to the level of IT adoption, strategic role of IT, and ITSM awareness and adoption. The main findings illustrate that SMEs from both types of economy employ ITSM-related solution to a limited extent and that transition economies reveal a significantly lower level of maturity with reference to all investigated IT-related issues. This study's results illustrate the need for further research into the reasons of limited adoption of ITSM solutions with special emphasis on transition economies.

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