

USE OF INFORMATION TECHNOLOGY FOR FINANCIAL MANAGEMENT IN CZECH ENTERPRISES

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Abstract

This study examines the impact of the adoption of software tools for Financial Management support on the Financial Management function. In addition to that, it was intended to study the level of contribution these technologies can bring to a company. The study was supported by research conducted on a sample of 46 small and 39 medium-sized manufacturing companies in the Czech Republic. The primary technique of data collection was a questionnaire distributed via mail, followed by further telephone and e-mail support. Collected data were explored by correlation analysis to determine the dependency between the use of Financial Management supporting ICT and economic results of companies. For medium-sized companies a low to moderate dependence has been established. Therefore in this case the use of soft ICT to some extent contributes to better economic performance. In contrast for small companies the dependence was negligible and sometimes even slightly negative, the use of software tools here can thus be counterproductive.

Key words: *financial management, information technology, small and medium enterprises.*

Introduction

Managing finances is one of the key functions in a company, greatly influencing its success or failure. Financial management has a few main goals: to acquire funds to finance everyday needs of the company, to decide on structure and allocation of these funds, to make investment decisions and finally to analyze, predict, plan and manage all business activities while maintaining financial stability of the company. Many aspects of financial management can be supported by various information technologies. These technologies provide large amount of information contribute to more accurate comprehension of situation in the company and thus they cut the level of risk in everyday or strategic decision making.

Research problem to be solved is the issue of utilization of information technology (IT) for Financial Management support and evaluation of their benefits for businesses. The first aim is to determine the level and types of information technology that are used in small and medium-sized companies in Czech Republic. Also the actual distribution of implemented technologies is examined. Second aim is to find out if the use of IT for Financial Management support correlates with better economic performance of a company.

Research in this area was formerly focused more on the use of hard technologies in manufacturing (Swamidass, 1996). Hard technologies are hardware- and associated software-based technologies such as Computer-Aided Design (CAD), Computer-Aided Manufacturing (CAM) or Flexible Manufacturing Systems (FMS), their use is connected with creation of certain product or service. Soft technologies are rather supportive tools and methods that are not directly connected with value-creating activities, but they significantly assist them indirectly.

They are often connected with analysing situations, decision-making and choice-implementing; their purpose is improving the efficiency of human activities (Jin, 2010).

Following soft technologies are included in this study: Enterprise Resource Planning (ERP); Decision Support Systems - either Management Information System (MIS) or Executive Information System (EIS) or Business Intelligence (BI); Customer Relationship Management (CRM); Enterprise Application and Information Portals (EAP,EIP); Competitive Intelligence (CI).

The purpose of financial systems is to facilitate financial planning and business transactions. Information systems help organize budgets, manage cash flow, analyze investments, and make the right decisions. Accounting information systems record transactions, produce periodic financial statements, and create reports, such as balance sheets and profit-and-loss statements. That can help managers understand changes in a company's finances (Oz, 2009).

Previous research (Čebiřová, 2010) showed that the use of soft technology contributes to wider application of performance indicators in the company and thus to a higher efficiency of financial management.

The essence of this research is to determine whether these conclusions correspond with the actual financial results of surveyed companies. The general hypothesis is that the use of IT for Financial Management support contributes to better financial performance of the company. To verify the benefits three economic performance indicators were selected: Labour Productivity, Profit per Employee and Return on Sales.

One of the main motivations to implementing information technology into a company is an effort to increase labour productivity, therefore the corresponding indicator was observed in this study. Indicator "Profit per Employee" was selected, because according to Lowell (2009) it is suitable proxy for the return on intangibles and it can be easily used to benchmark against comparable results of other companies. The last considered indicator "Return on Sales" is calculated as net income divided by sales. It is a useful measure of overall operational efficiency when compared with prior periods or other companies in the same line of business (Downes & Goodman, 2003).

Similar studies concerning information technology support are also made in other areas of management such as human resource management (Alwis, 2010) – the concept is called Electronic Human Resource Management (e-HRM). Parallel research may reveal opportunities for further development of IT usage in managerial work. Results of this study can be used to estimate whether a company with certain characteristics should invest in sophisticated information technology or not. It would be also possible to carry out an international comparison of the situation to facilitate detection of sites of interest to investors.

Methodology of Research

The purpose of this research is to enrich the business economics and management with specific empirical findings that might serve to identify the benefits of these information technologies for efficiency and competitiveness of manufacturing companies.

Sample of Research

For the selection of the respondents sample the enterprise database Creditinfo Czech Republic, s. r. o. (<http://www.creditinfo.cz/>) was used together with publicly available information, particularly Company register. Companies included in the survey had to meet following criteria. Their subject of business was manufacturing activity, they were accessible via e-mail and most of their economic and other characteristics could be found in the database Creditinfo – Albertina.

This study examined 46 small companies with 50 to 99 employees (54%) and 39 medium-sized companies with 100 to 499 employees (46%). All studied companies are operating in the Czech Republic. Given that the research has assessed 85 companies, the results can be regarded as indicative only.

Instrument and Procedures

The primary method of data collection was a questionnaire created by Hynek and Janeček (2009), it was designed to be comparable to their previous research (Hájek, Hynek & Janeček, 2005) and a similar research done in the United Kingdom and Australia (Sohal, 1994). The questions were focused on advanced technology utilization and evaluation or measurement of their benefits. The questionnaires and explanatory letters were mailed to selected manufacturing companies. The rate of return was further supported by telephone and e-mail requests. Despite all efforts the final rate of return was about 11.7 %.

Obtained data were organized into a database and then economic performance indicators were retrieved and added for each company. The economic results were processed for the years 2007, 2008 and 2009. For the year 2010 the complete economic data were not available yet.

Data Analysis

Collected data were explored by correlation analysis to determine the dependency between the use Financial Management supporting soft information technology and economic results of companies. Specifically Pearson correlation method was used at a significance level of 5 % (2-tailed). Calculations were performed in IBM SPSS Statistics 19. Data were also analysed through frequency, mean, standard deviation and percentages of response. The results were presented using pie charts, bar chart and summary tables.

Results of Research

The first aim was to determine the level and types of information technology that are used in small and medium-sized companies in Czech Republic. First it was investigated how large segment of companies have implemented soft information technology (Figure 1).

In a group of small companies 63% did not use any IT and only 37% had implemented one or more of these technologies. For medium-sized companies is this ratio almost exactly inverted – 36 % of them did not have any soft IT and 64% used one or more technologies. These results follow the nature of the two groups of companies. For small company is relatively easy to manage its activities without the support of sophisticated software tools, but the larger the company is, the more it needs these tools to coordinate and control all business operations.

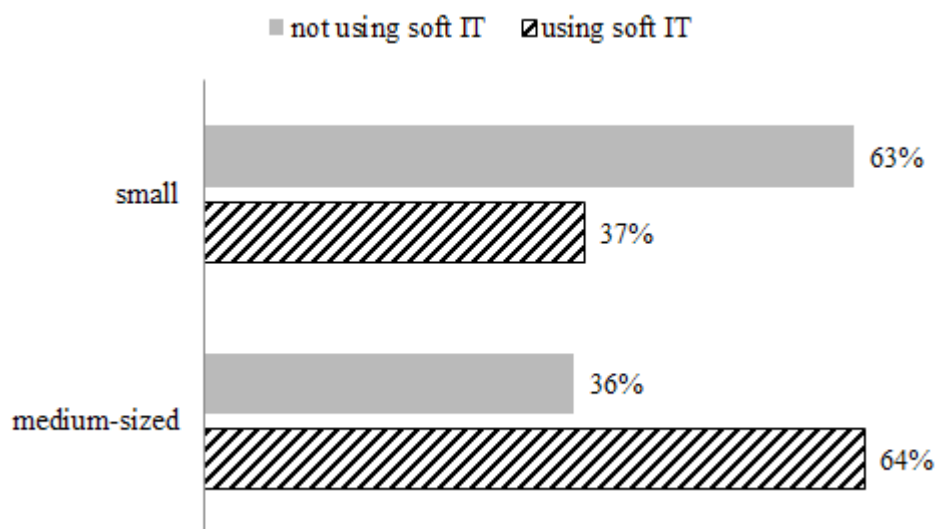


Figure 1: Usage of soft IT in small and medium-sized companies.

Surveyed companies used various types of IT and sometimes even their combination. The actual distribution of the technologies is shown in following pie charts. In medium-sized companies (Figure 2) the dominating technology is Enterprise Resource Planning (ERP) with 31 %, followed by Customer Relationship Management (CRM) and Decision Support Systems (MIS/EIS/Business Intelligence) which both have 25% share. Two least implemented groups of technology are Enterprise Application and Information Portals (EAP/EIP) with 13% and Competitive Intelligence (CI) with 6%.

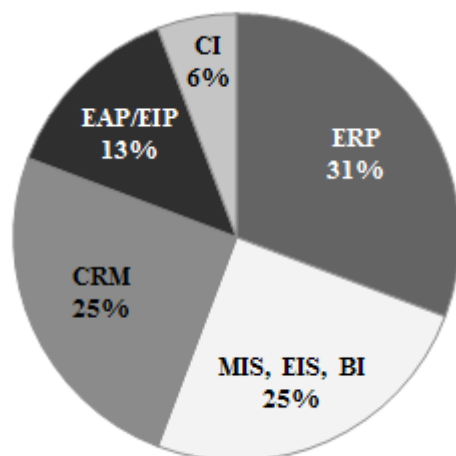


Figure 2: Distribution of IT in medium-sized companies.

Figure 3 shows how different is the distribution of implemented technologies in small companies. In this group dominate MIS/EIS/BI with 32%. The share of CRM is the same as in medium-sized companies (25%). Then ERP follows with 18%. The least used technologies are again EAP/EIP (14%) and CI (11%).

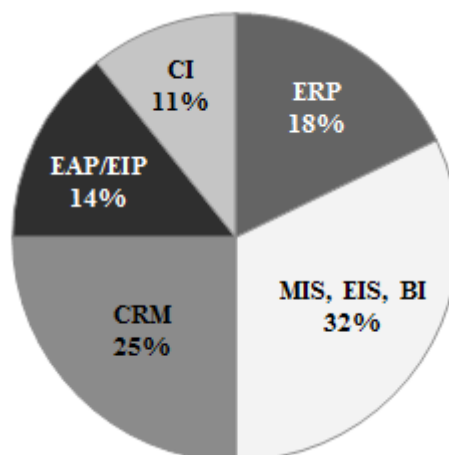


Figure 3: Distribution of IT in small companies.

Second aim was to find out if the use of IT correlates with better economic performance of a company. Summary table with the results for medium-sized manufacturing companies follows (Table 1). It was established that for Labour productivity is the correlation $r(37) = 0.308$, indicating a medium degree of positive correlation. Similar results appeared in the two other evaluated indicators. For Profit per employee was the correlation $r(37) = 0.271$ and for Return on Sales $r(37) = 0.291$, which is both on the border between low and moderate positive correlation.

It could be said that the use of certain soft information technology in medium-sized enterprises contributes to better economic performance of the companies and to higher Labour productivity in particular. However, the correlation is not very strong and therefore significant influence of other factors on business performance can be expected.

Table 1. Correlation between use of soft IT and economic indicators in medium-sized companies.

Medium-sized companies		Labour productivity (th. CZK/month)	Profit per employee (th. CZK/month)	Return on Sales
IT	Pearson Correlation	0,308	0,271	0,291
	Mean	225,93	8,79	2%
	Std. Deviation	430,39	18,06	5%

The results for small companies are displayed in Table 2 below. For Labour productivity is the correlation positive, but because $r(44) = 0.043$, it is insignificant. For Profit per employee ($r(44) = -0.126$) and Return on Sales ($r(44) = -0.097$) the correlation is both negative and also insignificant. Therefore no dependence between use of selected technologies and financial results of a company was established.

Table 2. Correlation between use of soft IT and economic indicators in small companies.

Small companies		Labour productivity (th. CZK/month)	Profit per employee (th. CZK/month)	Return on Sales
IT	Pearson Correlation	0,043	-0,126	-0,097
	Mean	227,89	10,09	3%
	Std. Deviation	215,02	18,27	6%

The hypothesis that the use of IT contributes to better financial performance cannot be confirmed for small companies. The dependence was negligible and sometimes even slightly negative, thus the use of software tools in this context brings no economic benefits and can be even counterproductive.

Discussion

The involvement of information technology in companies increased in recent years, partly driven by the need to enhance competitiveness and partially supported by grants that the European Union provided to Czech companies. Middle-sized companies have most frequently implemented Enterprise Resource Planning and then Customer Relationship Management or Decision Support System. In small companies dominate Decision Support Systems, followed by Customer Relationship Management. According to Hrdinová and Pittner (2010) the decision which system would be purchased and implemented is often made by Chief Financial Officer, therefore, emphasis is placed on the system's ability to provide adequate support to Financial Management.

Results of correlation analysis yielded findings on effectiveness of involvement of assessed advanced technologies in management. For medium-sized enterprises was established low to moderate dependence between the use of soft IT and better economic results. Thus the implementation of these technologies could be in this case beneficial and leads to more efficient financial management. For small companies on the other hand the dependence was negligible and in some cases even slightly negative. **The sophisticated systems may be unnecessary for small enterprises, for the support of Financial Management can suffice simpler accounting software or some open-source alternative, which would not burden the budget so much. The adoption of these systems should be properly considered and planned both in small and medium-sized enterprises, because it affects the efficiency of their business activities.**

It would be interesting to focus future research on small and medium-sized companies providing services and compare these results with manufacturing companies. One of the questions is if the use of soft IT is more beneficiary for service-providing or manufacturing businesses.

The economic results of companies in late 2008 and in 2009 were affected by global economic crisis; it would be possible to attain different findings under other economic conditions. Previous research (Němeček, Čebiřová & Hribík, 2011) showed that judging by financial results, the crisis had larger negative impact on companies using advanced information technology than on those who did not implemented them. However the overall economic performance results were still better in companies using advanced IT. One reason for a stronger downturn caused by the crisis in these companies could be due to greater burden on the budget from previous purchases of the technology.

Conclusions

In this study an attempt was made to examine the background of information technology for Financial Management support adoption in small and medium-sized manufacturing enterprises operating in Czech Republic. Advanced software solutions, like dominating Enterprise Resource Planning, Customer Relationship Management, Business Intelligence or similar systems, can provide powerful management support. They mediate timely delivery of key information that helps managers to reach better decisions faster. These systems usually have integrated structure, which reduces the risk of errors caused by need to enter the same data redundantly. However, due to their current high price, their purchase and implementation cannot be recommended to all companies regardless of their size, human and economic potential.

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