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Entrepreneurial policies for Management Information Systems of SME

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Abstract:

SMEs have a need for a universal, flexible and upgradeable information system that will most successfully integrate the entire business of a given company, and not for isolated applications that solve partial problems. However, the financial resources of SMEs are usually not in accordance with their needs, since SMEs in the modern business environment are in the need for increasing the functionality of the information system, for which they need additional resources. Acknowledging presented characteristics of the business environment for SMEs, this paper displays management information systems of SMEs. The paper first presents the basic characteristics and peculiarities of the structure and operations of these companies, with the aim to highlight the differences in the information needs of managers in relation to managers of large companies. Furthermore, considering the specifics of the integrated management information system (MIS) designed for SMEs, the application of which can significantly automate and improve key business processes of SMEs.

Development of MIS in recent years has intensified, especially those based on open platforms with freely available source programs.

Key words: Competitiveness, management information system, entrepreneurship, small and medium enterprises.

1. Introduction

In today's economic environment, the company is faced with a dynamic business environment. Based on this reason, the need for enterprise information systems that can meet the needs of managers for information is increasing. Information systems that provide reports to managers and direct access to data on the current and past business operations necessary for efficient business decision-making are called management information systems (MIS). Compared to the original information systems which only monitor business processes and activities, MIS represent very big qualitative progress for the company, as they focus on increasing the efficiency of management functions. MIS are the main communication platform, which reduces dependence of information to managers from other organizational units in the company. Information becomes available to everyone and is used in order to achieve optimal operations of the entire company, rather than its individual organizational units. [1]

Today, literature is encountering discrepancies and differences regarding the definition of the concept of MIS by different authors. MIS, according to [1], is defined as "a set of procedures for collecting, processing, storing and disseminating information, which should enable managers and analysts to do fast, user-friendly and consistent access to the information relevant for business decisions making, predictions and forecasts". The same source is in the definition given by the authors Kroenke D. and R. Hatch, according to which the MIS "improves management information system, by producing reports defined in the prescribed manner and with system management."

Author E. Turban et al give a different definition, namely: "systems that support the management in functional areas are called MIS".

In terms of global competition, in order to maintain market position, as well as ensuring long-term growth and development, companies have to meet the requirements in terms of effectiveness and efficiency. When it comes to small and medium-sized enterprises (SMEs), they have proven to be competitive and to further improve the intensive application of modern information technologies and information systems.

2. Features and specifics of small and medium enterprises

There is no unique definition of SMEs, however, in most countries as the main but not the only criteria for defining SMEs, use the number of employees in the company. Overall, SMEs are considered independent businesses that employ less than a given number of employees. This number varies from country to country, but the most common upper limits on SMEs has 250 employees (in the US the number

is 500).

According to the European Commission recommendation 2003/361 / EC, of 6 May 2003 [2], which is valid in the European Economic area, SMEs are divided into Micro, Small and Medium enterprises. The category of Micro, Small and Medium-sized enterprises consists of enterprises which employ fewer than 250 persons and which have an annual turnover not exceeding EUR 50 million and / or having a total business assets, whose value does not exceed EUR 43 million. Within this category, a small enterprise is defined as an enterprise which employs fewer than 50 persons and whose annual turnover and / or the total value of business assets does not exceeds 10 million EUR. A Micro-enterprise - as an enterprise which employs fewer than 10 persons and whose annual turnover and / or the total value of business assets does not exceed EUR 2 million. In addition to meeting the criteria regarding the number of staff and one of the two financial limits, SMEs must be independent. In this regard, the European definition distinguishes between autonomous enterprises, partner enterprises and linked enterprises.

In Kosova, and in the countries of Western Balkans, the company, ie. companies are classified in accordance with the Law. According to the law, legal entities are classified as Small, Medium and Large, depending on the average number of employees, annual income and property value determined at the date of the financial statements of the fiscal year. In medium-sized enterprises are those which are classified on the date of the financial statements they meet at least two of the following criteria: 1) the average number of employees in the year - the annual report is submitted from 50 to 250; 2) that the annual income of 2.5 million euros to 10,000,000 euros in; 3) that the average value of operating assets (at the beginning and at the end of the financial year) of EUR 1,000,000 to 5,000,000 EUR. Legal entities that are lower than the lowest figures in at least two of the following criteria for medium-sized companies, are classified as small businesses and legal entities that have higher amounts of the biggest indicators of at least two of the following criteria, are classified as large companies.

Company size is one of the contingent factors that affect its overall performance, strategy and regulation. From this point, the small dimensions of SME has certain advantages, namely: a high level of flexibility, developed entrepreneurial spirit, precisely defined core competencies, easier management, etc.

On the other hand, the disadvantages are: the lack of access to large markets, the lack of economies of scale, lack of funds, lack of qualified staff, etc.

Some of the features of the structure of SMEs, which, among other things, determine the information needs of managers of these companies are:

- A small number of organizational units, that is making it easier to coordinate, and therefore easier management of these enterprises,

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- A small range of management, which facilitates the better control of staff,
 - A high degree of centralization of decision-making (due to small size companies), allowing managers access to all tasks and facilitates of decision-making,
 - A relatively low degree of specialization of tasks so that employees in all positions cover a large number of tasks (employees universalists).
 - Organic (flexible) structure of SMEs, which allows them to survive in conditions of discontinuity in environment,
 - Information is transmitted quickly and without distortion, making it easy to realize two-way vertical communication, due to the small number of levels of hierarchy,
 - Management can quickly notice relevant changes in the market and be quicker to respond to change in the course of the company.

All these point to the need specifics designing specific information system adapted to SMEs, which will be discussed later in this paper.

3. Management Information Systems for small and medium-sized enterprises

In accordance with the above set forth, it is evident that the companies differ in a series of characteristics, of which the most important are: mission, goals, social roles, activities, organization and management. This means that each company is relatively unique in the combination of structure, leadership, people, objectives and environmental influences.

That is why the information system designed for one category of enterprises can not directly be used by other categories of companies. It should be borne in mind that the information management requirements of each individual company to some extent differ. Therefore, the information system should address the specificities and characteristics of companies that are projected, which also applies to the category of SMEs.

On the other hand, SMEs have limited financial resources for the implementation of information systems, and are often unable to predict and limit their costs for the occasion. Therefore, SMEs often face additional costs that have with the time unpredictable growth.

The total cost of introducing information systems in SMEs form has the following elements:

- Purchase costs,
- The cost of the necessary platforms,
- Maintenance costs,
- Implementation costs,

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- The costs of adaptation,
 - The cost of software maintenance. [3]

Purchase costs. SME market dictates the value of the software, and the daily price, in spite of different approaches to their determination, they do not differ significantly from product to product. Some suppliers of software define its price immediately on delivery, while others apply only use of a particular software package.

The cost of the necessary platforms. Every information system requires an appropriate platform of work. It often happens that the company require hardware upgrades with the introduction of a new information system or its new versions. This is often the main item when considering the total cost of the introduction of information systems in SMEs.

Maintenance costs are the annual costs of maintenance and support system. In most SMEs, these costs have the amount to 17 - 20% of procurement costs annually.

Deployment costs are the costs of introducing the system to the level of its readiness for operation. These costs can be very different, depending on the application applied. The components of this cost are data migration services, systems integration, training, consulting, etc.

Adjustment costs include costs that come with lower or higher degree of customization of business software specific business environment. This can be a significant cost component of the company, depending on the complexity, but also the possibilities and flexibility of an appropriate information system.

Software maintenance costs are often the largest single expense in determining the long-term cost of the company. Unlike adjustment applications, software maintenance involves maintenance of custom applications up to date. SMEs can continuously invest funds in an effort to have up to date versions of various products used, or they may decide to "freeze" the current version of the product in order to limit maintenance costs. "Freezing" version are missing the benefits of the price of the new features coming in the future. In this way, possibly lose at improving the productivity, which would be achieved by adjusting the system.

The listed items are the primary costs of the introduction of information systems and automation of SMEs. The obvious is the cost at the beginning of the project, which in addition to the acquisition cost, including work on staff training and system integration. Then the costs fall to the level of current hardware and software support, plus any subscription fees and / or costs of communication lines. However, shortly after establishing a system, costs start to increase with the increase in maintenance costs due to the necessary adjustments and various tasks in system integration.

As it is already mentioned, in terms of global competition, it is very little difference

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between the demands faced by SMEs and those with whom they face large enterprises. At the level of business processes and operational, SMEs must meet the following requirements in terms of its competitiveness:

- Maximum operational efficiency and use of resources,
- Reduction of operating costs,
- Efficient reporting,
- Respect the rules and standards of the European Union,
- Orientation towards the customer,
- Knowledge of the business environment in real time and quickly adapt to changes in order to maximize the market opportunities.

In accordance with those requirements, the needs of SMEs in terms of infrastructure and information systems are:

- Stable and mature business solutions, not isolated applications that solve specific problems,
- Flexible and upgradable information system on which the company can set up its growth,
- Access to the business models used by the most successful SMEs
- Proven implementation methodology,
- Acceptable price.

One of the categories of information system, called systems for enterprise resource planning (Enterprise Resource Planning, ERP), which basically represent the integrated management information systems, combines the efforts of SMEs to effectively achieve the listed requirements and use available information to support strategic and tactical decision-making and integration business information system. ERP systems have arisen by evolution of the concept that was originally included only material requirements planning (Material Resource Planning, MRP). By extending the original concept planning of production resources, developed in MRP II systems. Further research in the field of information systems and business models resulted in the development of the concept of computer integrated manufacturing (Computer Integrated Manufacturing, CIM, and then E-CIM) and to ensure the technological basis for the gradual integration of heterogeneous business areas and relevant data. ERP system contains software modules, such as: marketing, sales, customer support, procurement, distribution, management of industrial resources, design and process development, production, quality, human resources, finance and accounting, information services. New generation ERP system assumes integration of business processes with communications infrastructure companies, mainly integrated enterprise resource planning using the Web, which can include collaborative commerce, electronic toll collection and others.

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Experience has shown that complex information systems for SMEs often represent high-risk ventures, especially if their price exceeds the expected value. SMEs compared to large companies, due to limited resources, have much less able to recover from an unsuccessful implementation of information systems, which can be reflected in the budget overrun, deadlines, poor performance of the company, unreliability and instability of the system, low level of integration and flexibility. The causes of failure are usually required in the mismanagement of ERP projects. That is why it developed several methods and techniques of risk management, which have proved effective in the management of ERP projects. They include two steps:

1. The methods of analysis of the risks specific to the particular company (Risk Analysis Method, RAM) and
2. The method of analysis of the characteristics (Characteristics Analysis Method, CAM), by which it defines a concrete recommendations on how to assign the ERP project into several manageable sub-projects. [1]

Widely implemented commercial ERP solutions for SMEs are manufactured by SAP, Oracle, PeopleSoft, Sage, Microsoft and others.

SAP Business All-in-One package for SMEs contains the most important features required by every enterprise, such as financial accounting, management accounting, sales and distribution, purchasing, warehousing and logistics, production and quality management. Using a stable, upgradeable and integrated SAP Business All-in-One package, SMEs can automate key business processes and increase business efficiency. This package is localized for Kosova and adapted laws and legal regulations of our country. [6]

Microsoft is offering to SMEs a complete ERP solution called MS Dynamics NAV, which is primarily designed for SMEs that want to standardize business processes and at any time to have accurate information about its operations. NAV provides a number of features that are needed for SMEs in business. All functions are divided into modules, and modules continue to organizational units that perform these tasks. The basic functionality of NAV modules are: financial management, management of sales and marketing, purchasing, warehouse management, enterprise resource planning, personnel records, service and production.

The main advantages of this platform openness code business logic (which means that it is possible to add new functionality, or modify and adapt existing ones), a modular system and integrated development environment.

The system is fully localized to our language area and also adapted to national regulations and laws. [7]

In recent years intensified and development of ERP systems based on open platforms with available source code, so-called. FOS (Free and Open Source). A number of products in this group of products, such as Openbravo, Tiny ERP Adempiere et al.,

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Has been successfully applied in practice [1]. FOS are promising ERP solution for SMEs, thanks to numerous benefits, including:

- Absence of cost of purchasing and installing software,
- Reduction of operating costs and
- Efficient refurbishment / upgrade according to the specific needs of the company.

When it comes to the development of Web-based ERP system, of particular importance is the question of protection of information.

Earlier protection for ERP system was based on internal mechanisms to control user access rights to individual information. However, information systems with a high degree of integration require effective methods to protect the network infrastructure, as well as protection at the level of transactions. It remains an open question whether the FOS ERP systems are less secure and more vulnerable to attacks from the commercial system, primarily because different users and environments usually set different requirements in terms of protection.

4. Conclusion

The rapid development of information and communication technology has made available information systems for smaller businesses, ie. small and medium-sized enterprises. In today's (information) society the business of these companies as well as of large companies, has become unthinkable without information systems. It is no longer a question of whether the company needed an information system, but for which system to decide.

Results of research conducted by the World Bank (The Investment ClimateSurvey, January 2006) - indicate the fact that companies which increasingly use information and communication technologies have increased by 3.8% annually, compared with 0.4% in the case of those you do not use them [6].

Expected effects of the implementation of integrated management information systems in SMEs affect in:

1. strengthen their own position and presence in the market,
2. finding its own market 'haven' and the creation of market image,
3. The reduction in operating costs
4. strengthening business ties,
5. a rapid and effective response to changes and new requirements of the market,
6. Offer new services and launching new types of job,
7. better inventory management,
8. Monitoring technological progress,

9. behavior in accordance with the current market trends,
10. Protection of financial failures. [3]

References

- [1] Beqiri, Edmond, Bazat e Informatikës, Universiteti i Prishtinës, 2006
- [2] European Commission: Commission Recommendation micro, small and medium-sized enterprises 124, 20 May 2003, p. 36
- [3] Beqiri Edmond, Zhvillimi dhe menaxhimi i projekteve, UNHZ, Pejë, 2015
- [4] HOTI, Hamdi: Roli dhe rëndësia e Ndërmarrjeve të Vogla dhe të Mesme në Kosovë, Publikim revistë shkencore ndërkombëtare, Diskutime, Tetovë, shtator 2013
- [5] Michael B. Bender (2009), "A Manager's Guide to Project Management: Learn How to Apply Best Practices
- [6] <http://wbi.worldbank.org/wbi/>
- [7] Krasniqi, Armand, E drejta biznesore ndërkombëtare, CSARA, 2015

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