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Advantages of using enterprise resource planning systems (ERP) in the management process

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ABSTRACT

At present, the flow of various types of information is very important. ERP systems are a special kind of Integrated Information Management Systems (IIMS). Using ERP systems, companies can streamline the management processes which, not so long ago, would be done on paper or via telephone. This article examines the advantages of using ERP systems. Despite some drawbacks, the use of ERP systems brings many benefits, including the reduction of logistics costs, the smooth flow of information, etc. These benefits are noticeable not only for the individual employees but for the whole company. They also have a positive impact on business relationships with the customers and suppliers.

Keywords: enterprise resource planning system, advantages, management, enterprise

1. INTRODUCTION

The efficient flow of information in an enterprise is extremely important from the business management point of view. Without complete, reliable and fast information on finance, production, purchases, stock, etc., the company cannot function properly. Therefore, it is necessary to apply appropriate management information systems. An example of such a system is the Enterprise Resource Planning (ERP) application.

Enterprise Resource Planning Systems – commonly known as ERP systems, are database systems that support the management of medium and large enterprises by collecting and processing data. ERP systems are a part of Integrated Information Management Systems (IIMS). They are also defined as “a collection of integrated functional modules that optimize the business processes both internally and in the company’s immediate surroundings.” Nowadays, the promptness of the information flow is becoming more and more important. ERP systems are the main set of IT tools in business. Using the ERP systems, companies can streamline the management processes which so far have been done on paper or via telephone. ERP management covers all the key areas of business, from accounting and budgeting, human resources management, document circulation to reporting, etc¹. [1]

The article presents the general characteristics of the ERP systems, including the application areas in an enterprise. Particular attention has been paid to the relevance and benefits of the implementation of these systems.

2. ERP SYSTEMS’ CHARACTERISTICS

The beginning of ERP systems dates back to the late 1980s and early 1990s. However, in the history of development of the information systems supporting management in the area of resource planning, the following basic steps are distinguished: Inventory Control systems (ICs)², [2,3] Material Requirement Planning (MRP),

- Manufacturing Resource Planning systems (MRP II),
- Enterprise Resource Planning systems (ERP),
- Enterprise Resource Planning (ERP II) allowing for the company’s Internetworking.

EU funds have played a major role in recent years. One of the programmes was the 8.2 Innovative Economy Operational Programme in the years 2007-2013, supporting the implementation of electronic business, especially among small and medium-sized companies. Thanks to the support of the EU, many entrepreneurs have implemented the ERP system in their companies^{3,4} [4-6]. According to the presented data, the global market of the ERP systems in 2012 amounted to about \$24.6 billion.

The Polish ERP market is still relatively small – only about 2% of the European market – but it is still estimated by professionals as developing. In order for the ERP system to function properly and provide the necessary information, it must be tailored to the company’s structure. For this purpose it is important to know all the processes taking place in the enterprise and to determine which processes will be included in the ERP system.

¹ L. Zhang, M.K.O. Lee, Z.Zhang, P. Banerjee, Critical Success Factors of Enterprise Resource Planning Systems Implementation Success in China. Proceedings of the 36th Hawaii International Conference on System Sciences (HICSS '03), 2003

² <http://www.netsuite.com/portal/resource/articles/erp/what-is-erp.shtml> [accessed on 09.08.2017]

³ <http://www.erpnews.com/pack-company-dna-erp-suitcase-conquer-world/>[accessed on 01.08.2017]

⁴ S. Hamilton , Maximizing Your ERP System: A Practical Guide for Managers. – NY.: McGraw-Hill (2002) 350.

Due to the variety of links between the different areas of business activities, it is difficult to demonstrate the ideal classification of the ERP system modules. However, there are several main areas of application of the ERP systems (Table 1) [7]

Table 1. Areas of the ERP system application

AREA OF THE MODULES' USE	AREA DESCRIPTION	EXAMPLES OF MODULE NAMES
FINANCIAL AREA	Characteristic and indispensable area for the ERP standard, which can include whole company's accounting: accounting statements, reports, supplier and customer accounts, fixed assets management, controlling.	Invoices Accounting statements Tax Book Capital management
LOGISTIC AREA	It consists of general procurement and sales planning and a broadly defined warehouse management. Better developed systems can offer such features as batch size optimisation and space management.	Sale Warehouse Rental
STAFFING AND PAYROLL AREA	Area dealing with the payroll, timekeeping, training management, career planning, selection of staff best suited for a particular post.	Staff and Wages Distribution list Training
PRODUCTION AREA	It covers a broad area of production management: planning and production capacity utilisation, resource requirements planning, resource use inventory, product valuation.	Production Service Supply chain management
PROJECT MANAGEMENT AREA	Area applicable in companies providing services. It includes project team management, problem management, creation of automated scheduling tools.	Project management Timetable Tasks
CUSTOMER RELATIONS MANAGEMENT AREA	It includes – among others – sales team management, customer service, sales effectiveness forecasts, order evolution management, marketing campaign management, etc.	Sale Meeting Calendar Forecasts

Source: Own study -based on⁵ [8]

⁵ I. Kott, Computer Integrated Management, 2009.

3. BENEFITS OF ERP SYSTEMS APPLICATION

Implementing an ERP class system is a very big business challenge. The basis for the smooth implementation of ERP systems is: the employees' engagement and the modern approach of the management, quickly getting acquainted with the software and appropriately using it in day-to-day work. The biggest obstacle against the ERP use, however, is financial, especially among small and medium-sized enterprises. Nevertheless, more and more entrepreneurs are beginning to implement the ERP systems because they see numerous benefits of their application (Table 2)^{6,7}: [9-11]

- shortening the time necessary to reach the recipient,
- better order management,
- cost reduction,
- customer service improvement,
- information integration between the company's departments,
- improving the efficiency of procurement processes,
- distribution or production processes improvement,
- economic and financial situation improvement,
- enhanced staff skills,
- increased data security,
- automation and unification of data,
- current access to information,
- increase in goodwill.

Table 2. Benefits of ERP implementation (number of respondents 30)

NAME 1-LEAST IMPORTANT, 5-MOST IMPORTANT	1	2	3	4	5
Delivery timeliness improvement	1	1	3	15	10
Achieving profitability	0	2	3	10	15
Inventory reduction	0	1	8	15	6
Shortening lead time	0	1	6	13	10
Reduced production time	0	2	7	14	7
Increase in work productivity	0	1	4	12	13

⁶ M.A. Ed. Elmonem, E.S. Nasr, M.H. Geih, Benefits and challenges of cloud ERP systems – A systematic literature review Future Computing and Informatics Journal 1 (2016) 1-9.

⁷ R. Addo-Tenkorang, P. Helo, Enterprise Resource Planning (ERP): A Review Literature Report. Proceedings of the World Congress on Engineering and Computer Science (WCECS), 2 (2011) San Francisco, USA

Current access to information	0	1	3	6	20
Reducing the management's decision time	0	1	5	12	12
Other	16	2	9	8	6

Source: based on ⁸

According to the above presented benefits of the ERP systems implementation, current access to information, profitability increase, productivity growth, are of primary importance. The ERP systems facilitate the storage of the company's personal data and significantly simplify the staffing employees' duties related to the payroll management, timekeeping, or the appraisal process.

ERP systems allow for faster and more effective control of the company's changes, which is particularly important with the omnipresent free competition, and constant economy and regulatory changes, etc. The use of ERP systems, however, can yield significant benefits and a relatively quick return on investment. [12-14]. According to a survey conducted by CapGemini among the CRM systems' users, 61% of the surveyed companies have paid back their investment costs in less than 24 months, and for 17% – in less than 12 months.

4. CONCLUSIONS

Large manufacturing companies are not able to function properly today without the support of an efficient IT system. The computerisation of all the areas of the company's operations results in the increase of its efficiency and effectiveness, and thus, its competitiveness in the market. Wide range of systems in the world, as well as, on the Polish market, allows to apply solutions most appropriate to the business, human and financial opportunities of the company.⁹ [15]

It is not enough to implement simple software, but a multi-module ERP system. These systems are mainly used in large and medium-sized Polish companies, which stems primarily from the size of their needs but also the high cost incurred during the implementation and operation of the system. Micro and small businesses often cannot afford to implement them for financial reasons.

It should be emphasised that ERP systems are an example of complex software, the implementation of which is often a difficult challenge for an enterprise. An enterprise using the ERP system is dependent on the system, so it is necessary to adjust it properly, at the stage of the system implementation, to the needs of the company. Enterprises deciding to implement an ERP class system should pay particular attention to the choice of a specific, reliable system solution that meets their requirements.[16-18] Despite all the doubts and concerns associated with the implementation, the interest in the ERP systems is substantial

⁸ <http://doradcy-it.pl/korzysci-Resulting-from-applications-systems-erp> [accessed on 07.04.2017]

⁹ Ł. Hadyś, P. Cyplik, Practical Aspects of the Use of ERP Systems in Selected Greater Poland Enterprises (2012).

and is still increasing. This is evidenced by the wide market of applications and consulting services. ERP systems allow for faster and more effective control of the changes in the enterprise, which is particularly important in the times of free competition, economic and regulatory changes, etc

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