

IMPLEMENTATION OF ENTERPRISE RESOURCE PLANNING SYSTEM AND CHANGE IN ACCOUNTANT'S ROLE – POLISH PERSPECTIVE

Ewa Wanda MARUSZEWSKA
University of Economics in Katowice

Abstract:

ERP systems integrate all processes and software users in one computerized environment reshaping organization to fit into system's functionalities. ERP system implementation is a complex process with technical and socio-organizational issues. As ERP system encompass financial data and management decision modules, accountants are important actors of the system both during implementation and after go-live stage.

Key words: enterprise resource planning system, management accounting, implementation of ERP

INTRODUCTION

The aim of this paper is to propose different dimensions of ERP implementation observed from Polish accountants' perspective. Understanding complex impact of ERP implementation on accountants' role in an enterprise is an important issue in successful implementation process. As integration of all processes and functions through enterprise in unending process, accountants' awareness to their role in creating ERP system is of crucial importance in post-implementation stage, too. The ERP system to function for the whole organization's benefit with all corporate information in one central database, one must understand that integration is not only technical thing, but human actors play important role in it [1]. *Integration is not a solution but rather a means by which to problematize the process through which actors look for ways of transporting information across localities in order to establish informational representation that suits the needs and requirements of many different parties in many different places* [1].

EVOLUTION OF ENTERPRISE PLANNING RESOURCE (ERP) SYSTEMS

The roots of ERP systems can be traced back to 1960s [2] when inventory control needs brought on manufacturing systems called **M**aterial **R**equirements **P**lanning (MRP).

In the early stage, MRP encompassed product planning and parts requirements. MRP systems consisted not only of software but referred to all components necessary to create the business system, such as IT infrastructure, scheduling systems, and organization of business processes. The second-generation systems, Closed-Loop MRP, were integrated information systems with feedback that enabled plans to be checked and adjusted. MRP II integrated additional data regarding to employee and financial needs. MRP in this stage meant **M**anufacturing **R**esource **P**lanning systems

[3]. MRP and MRP II are now parts of ERP systems collecting data and accessing database information in all company departments. Enterprise Resource Planning system is an integrated information system that serves all departments across the organization (an entity) and helps in communication between firms composing a holding company. The ERP Report conducted during June – December 2010 survey among 185 participants from 57 countries showed [4] that there are 9 vendors on the market that offer ERP software. No single vendor dominates the market, although top three vendors were selected. Oracle software (including JD Edwards, PeopleSoft and eBusinessSuite) gained 22%, SAP 19%, and Microsoft Business Solutions 14%.

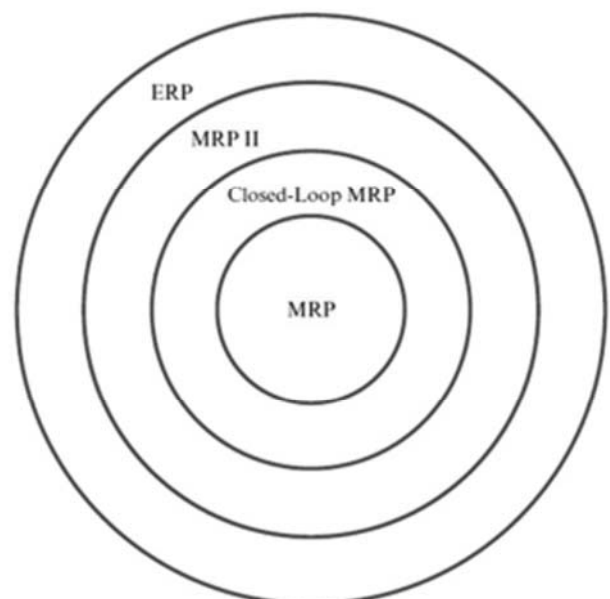


Fig. 1. Evolution of ERP systems [2]

ADVANTAGES AND SUCCESS FACTORS OF ERP SYSTEMS' IMPLEMENTATION

Present business environment requires companies to face changes in the markets, increasing competition, and high expectation of customers. It results in pressure to lower total costs while holding or increasing quality of products and service. In order to keep up with competitors, companies must improve their day-to-day business activities. Implementation of ERP system is regarded as a way to accomplish business conduct upgrade [5]. There are at least two major benefits that do not exist in non-integrated systems [6]:

- ERP system provides uniform information regarding all functions and departments of the business.
- It creates business database where all data are collected, processed, monitored and disclosed to final users.

Other benefits to be mentioned among the above were presented in Table 1.

Unfortunately, benefiting from implementation requires a tremendous engagement of implementation team, good

understanding of company's processes, employees' commitment to entity's objectives, and large amount of money at the beginning. It is important to mention barriers in successful implementation of ERP system. In small and medium size Polish companies, a requirement to start planning business activities might be a prominent barrier. Implementation costs and enterprise dependence on software updates, especially in the occurrence of changing tax and other legal requirements regarding financial module of ERP software, might be an issue raised during decision-making stage. Last but not least implementation constraint might be an education of key-user employees and management barrier. It requires time to sway employees accustomed to the old system and stop them from thinking in the terms old system works.

If implementation is successful advantages outweigh costs of implementation. Literature states factors, which to a great extend, determine whether implementation will be successful. Employees' involvement occurs in every literature position [1, 6] and derives from the fact that ERP systems are always situated; they exist in settings where they act and are acted upon [1].

Table 1
Advantages of ERP system implementation

Possibility to monitor business performance from every place in the world.
A tool to reveal reserves already existing in enterprise processes, e.g. enables optimization in logistics, cost reduction in business processes, enhancement of operational efficiency resulting in increasing business processes effectiveness.
Enables easy access to all information on time during decision-making process among management employees.
Automatization of data collection and processing with ongoing data reconciliation serves high precision and timelines of information provided.
Standardization of business processes increase transparency and safety of business processes through the enterprise.
Gathering all information in one database enables building long-time relations with clients.

Table 2
Critical factors for successful ERP implementation [6]

Clear understanding of strategic goals	Key people throughout the organization create a clear, compelling vision of how the company should operate to satisfy customers, empower employees and facilitate suppliers
Commitment by top management	Strong leadership and top management participation
Excellent project management	Project team creates clear definition of objectives, develops both a work plan and a resource plan, and carefully tracks project progress
A great implementation team	People chosen for their skills, past accomplishments, reputation, and flexibility. Team entrusted with critical decision making responsibility and provided with resources needed.
Data accuracy	All company's employees are committed to work within new system, and will not allow continued use of old system.
Extensive education and training	ERP implementation requires a critical mass of knowledge to enable people solve problems within the framework of the system. Post-implementation training
Focused performance measures	Careful construction of performance measures that are to assess impact of new system on the company. Measures must be designed in order to encourage the desired behaviors by all functions and individuals
Multi-side issues	The desired degree of individual site autonomy, differences between culture of the organizations that are supposed to work under one ERP system, and local optimization

QUALITATIVE CHARACTERISTICS OF USEFUL FINANCIAL INFORMATION OBTAINED FROM ERP SYSTEM

Involvement of employees in the project is a crucial issue during software selection steps, throughout implementation and post go-live stage. Because ERP system is highly complex information systems and it encompasses all departments within company, involvement of all employees is of high importance. If employees from manufacturing departments or sales, or purchasing aren't committed to implementation, then after go-live problems will be one huge problem that will end up in finance departments. Internal data dependency within the system means that company must put great emphasis on data accuracy. Errors in one module of ERP software will result in problems for other users, most often for key-users in accounting departments. Involving all departments in day-to-day usage of ERP system will in all probability ensure **timeliness**, as many activities will be introduced into the system on a daily basis.

Each problem that arises during implementation requires accountants' engagement into social interactions with employees at different levels. There always is a need of reciprocity information regarding business activities and legal (mostly tax and accounting) demands. Interdependencies in ERP system are very strong and reciprocal communication and parametrization, as well as testing are crucial issues to obtain **verifiability** and **relevance** of information generated. Both features are quality characteristics required by accountancy in order to properly serve management in decision-making process and management control within ERP system [7, 8, 9].

Users' decisions involve choosing between alternatives, so information about business activities is more useful if it can be compared with similar information for another period or another date [10]. Changes in accounting policy are inevitable elements of ERP implementation. If decision regarding ERP implementation is being made year or two ahead or implementation stage takes long time, it is possible to prepare accounting in the company for method changes. Consistency is an instrument to achieve comparability of financial information from period to period. **Consistency** will be in danger if company switches to new system in the middle of the year and chooses hard cutover method. There are two cutover strategies possible: hard cutover with not access to the old system after go-live, and soft cutover. The latter cutover includes some or total employee access to the old system or parallel runs of both systems in order to eliminate any unexpected data or employee mistakes. Hard cutover might result in lack of consistency from period to period or double work for accounting employees to keep consistency.

Decision on the level of ERP software customization is a key factor to **materiality** and **understandability**. Customization can improve out-of-the-box software value, but usually is very expensive. Comparing costs with realized benefits is difficult at implementation stage and might be a long debate through implementation process. Avoiding customization may lead to patch fixes, which could result in costly and embarrassing errors. On the other hand, too much customization might result in prolonging implementation process as well as in unreasonable costs increase. Analyzing system's functionalities and comparing them with company's requirement regarding processes' presentation in the

system, constitutes a fundamental moment for accounting final-users. Partial redesigning of core business processes or redefinition (modification) of processes held by accounting department might sometimes be a way to avoid customization or fit in the functionality of the system. Customizing the system might be also desired to assure **comparability**, which does not mean uniformity. Comparability of financial information is not enhanced by making unlike things look alike [10]. On the other hand, accounting must adjust to choices made within the system concerning processes and their presentation [11]. That is why customization might be expensive although the only way for a company to ensure **faithful representation** and other qualitative characteristics. Creating consensus between accounting department and IT department requires discussion concerning high/low quality of information provided by the system, satisfaction/dissatisfaction of final users, costs of customization, and difficulties in day-to-day activities and software support in preparation of reports and declarations demanded by the law. Cost is very important constraint on the information that can be provided by financial reporting. Accountants needs regarding information, especially management accounting, impose cost, but these costs should be justified by benefits of reporting that information.

CHANGE IN ACCOUNTANTS' ROLE DURING AND AFTER ERP IMPLEMENTATION

New and broader role of accountants emerge during implementation and after go-live stages. As implementation process engages all departments of enterprise, including organizational changes, accountants should be present during software presentation and during testing in regard with data dependency between financial module and other modules. After codification of many organization processes, system may move some accounting practices out of financial departments. Implementation of ERP system will influence IT departments as well. IT people have to be aware, that moving out some accounting practices, that were pertained to accounting departments only, will result in increasing of cooperation areas between accountants and IT staff. Accountants might be involved into the design and management of IT systems [12] regarding data processing and employee access to information generated in the system. Literature acknowledged that IT departments influence company's organizational structure [13] and that the impact is usually one-sided [12]. During implementation of ERP system, accountants might be leaders of changes in re-engineering activities of other departments due to data accuracy requirements [14]. In this context, social aspects of organization together with communication patterns, and psychological characteristics of a leader of accounting department are of high importance. Many times, implementation of ERP emerges from the need to codify processes and remove diversity of operations and behaviors in the organization. Reshaping organizations' processes might influence organization strategy and/or business management and control [15]. Accountants' engagement in customizing ERP software might be perceived as behavior against uniformity across the organization. Defining new duties of key-users and areas of responsibility for collecting data in the system might require changes in the organization or re-engineering old conducts. Accountants should be engaged in creation of new job descriptions for key-users of the system to be a

part of developing new communication norms in the organization and re-allocation of practices among different positions. Accountants' participation in data collection and access to information rules is vital as after go-live accountants are less data gathering employees. They will become more dependent on data collected within the system by all other company departments. Due to accounting and tax law requirements, **accuracy** of data gathered in the system should be strongly highlighted during implementation process.

On the other hand, results of accountants participation in developing new job descriptions and scope of responsibilities might be biased because Polish tax and accounting law restrictions require high accuracy of data. Therefore reciprocal communication and commitment to create organizational changes in order to embody new norms should be widespread in the organization. It is desirable and will help accountants if the above issues are highlighted by management of the enterprise, not only by accountants working for a company. Management team who understands that all delays in data collecting and all mistakes made in the system will end up in accounting departments is a great help to new co-ordination of business processes and facilitates setting of control parameters.

As, after go-live, accountants become more consultants and data interpretation employees, they can use their time for operational and strategic decision-making regarding management of the company. They can also use the knowledge and efforts to initiate changes and updates in ERP software to customize it to entity's needs. The above means, that accountants being able to interpret information received from the system and having the knowledge about legal aspects of doing business, will have to re-organize the work because traditional distinction between financial accounting and management accounting will change to process view. This is a result of integrating financial accounting with management accounting in the system resulting in one information flow aimed at accounting departments. Standardization of all business activities embeds all conducted activities in ERP database and uniform information is provided to accounting departments. Instead of time-consuming data collection, accountants get uniform outcome that can be used for management decision-making process. Unfortunately, research made in Poland in 2010 [16], showed that accountants are over jobbed with formal and technical activities that arise from tax and accounting law. It stops them from focusing on strategic decision-making. ERP systems not always provide all information required for legal reporting and consolidating data from different reports consumes too much time. Accuracy of information provided by ERP systems is another problem Polish accountants face. ERP systems assume some simplifications that are of no materiality from management point of view. Detailed requirements regarding invoicing, VAT and corporate income tax reporting on a monthly basis force accountants to painstaking and exhaustive work to avoid tax penalty risk. Because accountants are dependent on other key-users inputting data, in order to enhance the accuracy they should point out the importance of everyone's contribution to information being generated in the system and the ability of management to see his/hers contributions to a company success. Entering wrong data starts do-

mino effect, so proper control procedures should be developed, too.

CONCLUSIONS

Successful implementation is not only about software to work properly in IT terms; the most important issue regards integration of all processes and human actors through the company. From accountants point of view, integration means the possibility to make data accurate, sharable and available on timeliness basis in order to serve for management purposes. Reshaping of business organization to fit into ERP functionalities results in the need to include socio-organizational context of implementation. Accountants' role in the organization with implemented ERP system changes as routine jobs diminishes and need for variety forward-looking information at high speed arises. Accountants are less financial accountants and become more management accountants with information and knowledge appropriate to make business decisions. Their ability to shape corporate strategy increases with power to mobilize other organizational actors.

REFERENCES

- [1] Dechow N., Mouritsen J.: Enterprise Resource Planning Systems, Management Control and the Quest for Integration. *Accounting, Organizations and Society*. No 30, 2005, pp. 691 – 733.
- [2] www.whatlserp.net
- [3] Manufacturing Resource Planning (MRP II). Institute for Manufacturing. University of Cambridge. <http://www.ifm.eng.cam.ac.uk/dstools/process/mrp2.html>
- [4] ERP Report 2011. www.WhatIsERP.net
- [5] Lee H., Liebenau J.: Temporal Effects of Information Systems on Business Processes: Focusing on the Dimensions of Temporality. *Accounting, Management and Information Technologies*. No 10, 2000, pp. 157 – 185.
- [6] Umble E.J., Haft R.R., Umble M.M.: Enterprise resource planning: Implementation procedures and critical success factors. *European Journal of Operational Research*. No 146, 2003, pp. 241 – 257.
- [7] Chapman Ch.: Not Because They Are New: Developing the Contribution of Enterprise Resource Planning Systems to Management Control Research. *Accounting, Organizations and Society*. No 30, 2005, pp 685 – 689.
- [8] Skotnicka-Zasadzień B., Biały W.: An analysis of possibilities to use Pareto chart for evaluating mining machines' failure frequency. *Eksploatacja i Niezawodność - Maintenance and Reliability*. No 3(51), 2011, pp 51-55.
- [9] Loska A.: Remarks about modelling of maintenance processes with the use of scenario techniques. *Eksploatacja i Niezawodność - Maintenance and Reliability*. No 14 (2), 2012, pp. 92-98.
- [10] Framework for Preparation and Presentation of Financial Statements. International Accounting Standard Committee Foundation. 2001.
- [11] Wilson E.V., Zigurs I.: Decisional Guidance and End-user Display Choices. *Accounting Management and Information Technologies*. No 9, 1999, pp 49 – 75.
- [12] Caglio A.: Accountants, from Tradition to Transition: The Impact of Enterprise Resource Planning Systems. DIR, Research Division SDA BOCCONI Working Paper No. 02-67. Available at SSRN: <http://ssrn.com/>

- abstract=301512 or <http://dx.doi.org/10.2139/ssrn.301512>
- [13] Scapens R., Jazayeri M.: ERP Systems and Management Accounting Change: Opportunities or Impacts? A Research Note. *European Accounting Review*. No 12, 2003, pp. 201 – 233.
- [14] Loska A.: Selected organizational aspects of maintenance organization modelling, *Management Systems in Production Engineering*. No 4 (4), 2011, pp. 13 – 18.
- [15] Skaerbaek P., Tryggestad K.: The Role of Accounting Devices in Performing Corporate Strategy. *Accounting, Organizations and Society*. No 35, 2010, pp. 108-124.
- [16] Usprawnianie procesów finansowo-księgowych i zmniejszanie ich kosztów w firmach. Raport z badania Deloitte oraz KDF Dialog. Grudzień 2010, pp. 1-15.

dr Ewa Wanda Maruszewska
University of Economics in Katowice
Department of Accounting
Faculty of Finance and Insurance
ul. 1 Maja 50, 40-287 Katowice, POLAND
e-mail: ewa.maruszewska@ue.katowice.pl