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## Visualizing operational effects of ERP systems through graphical representations: current trends and perspectives

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**Abstract** The ever-changing business environment, coupled with increased competition and rapid technological advances, exert pressure on businesses looking for modern ways of production and operation, based on their survival and success in profitability. In order to strengthen their market position and ultimately to gain competitive advantage over others, a large number of companies—perhaps the majority—at a global level have installed or are in the process of adopting Enterprise Resource Planning—ERPs Systems. ERPs reorganize business practices and enhance the processes of business units. Changes that ERPs bring to businesses have significant effects on Management Accounting and Internal Audit but also on Accountants and Internal Auditors who are often asked to adapt their methods and techniques to the requirements of new IT systems. This paper looks for findings from previous research in the field, research conducted on possible changes in Administrative Accounting and Internal Control and depends on the effectiveness of ERP systems. In this study, the research interest is focused on the identification, recording and understanding of critical dimensions and factors for the effective implementation of ERPs in firms through their adoption and effective use. There is a theoretical framework for clarifying some terms useful for a better understanding of key issues discussed below. It also demonstrates the international trends and

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prospects of ERP systems as well as the issues encountered in their effective implementation while presenting the research methodology used, the conclusions and finalizing this chapter with proposals for future research.

**Keywords** ERP systems · Administrative Accounting · Internal Control

## 1 Literature review

### 1.1 E.R.P. and current trends

A number of academics and practitioners have, over the past few years, focused their research interest on Accounting, on Chartered Accountants and Internal Auditors due to the growing E.R.P. Systems' popularity (AICPA 2011). In this chapter, a major effort is to look for the relationship between E.R.P.s, the Management Accounting and Internal Audit. The data collection for the present study was based on literature and bibliography of Accounting, Auditing and Information Technology sectors, published from 2012 (when ERPs appeared) until 2016, internationally and nationally, while the sources used are both primary (Conference Proceedings, Reports) and secondary (International Prestigious Newspapers, Magazines and Books), by the "Scopus" an Elsevier's abstract and citation database launched in 2004.

There is an increasing tendency to reinforce interdisciplinarity using ERP systems which reveals their increasing usefulness in the bibliography. Thus, in this section, current trends, which prevailed between 2012 and 2016, in E.R.P Systems are cited. These trends are based on the most significant empirical studies that have been carried out, focusing on the changes due to the ERPs implementation in Management Accounting and Chartered Accounting, then in Internal Audit and Internal Auditors and vice versa.

Modern enterprises, in order to meet their goals, adopt integrated Information Systems. Typically, they use a variety of modules such as Customer Relationship Management (CRM), Supply Chain Management (SCM), Business Intelligence (BI), Business Analysis (BA), Financial Accounting (FA), Management Accounting (MA), Internal Audit (IA), Human Resources (Human Resources), Project Management (PM), Corporate Governance and various other subsystems.

The modules that are mostly used by the researchers, based on their usefulness, are described below, according to the bibliography review for years 2012–2016.

The majority of researchers have dealt with Management Accounting Systems. E.R.P.s have brought significant changes in business and have caused major complications in Management Accounting and Accountants as well, who may need to adjust thoroughly their methods and procedures that were using until then. The exclusive use of E.R.P.s rather than different individual systems is necessary in order to automate routine operations and minimize operating costs. The modules included in an E.R.P. are typically Accounting, Finance, Logistics, Customers and Service (CRM, SCM, BI, BA) and they are used to increase their functionality (Athanasaki 2012). In addition, the larger the size of the enterprise, the greater the need for the Management Accounting subsystems installation (Gärtner et al. 2013). E.R.P.s have a significant impact on the accuracy and update of Management Accounting performance measures. The impact of these Systems on Management Accounting and Accountants is to increase their efficiency and effectiveness (Spraaakman and Sánchez-Rodríguez 2012).

As stated by Spathis and Kanellou (2013), accounting benefits and satisfaction in an ERP environment, offer more flexibility to the enterprise. The modules that are used are Financial