Chapter 4.11
Towards Identifying the Most Important Attributes of ERP Implementations

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ABSTRACT

Enterprise resource planning (ERP) systems have been implemented in various and diverse organizations. The size of companies, their industry, the environment, and the number of implemented modules are examples of their heterogeneity. In consequence, a single procedure which leads to the success of implementation does not appear to exist. Therefore, there have been many implementations that have failed during, and also after, the implementation process. As a result, a considerable amount of research has been trying to identify issues influencing ultimate project success and also to recognize the best implementation projects. The aim of this work is to identify the most important characteristics of ERP implementation which affect project success. This study builds on data gathered using a questionnaire directed toward people playing leading roles in ERP implementations in a few dozen companies. Twelve attributes were identified and divided into three sets representing: effort, effect, and the synthetic measure of success calculated on the basis of the obtained data. Two agglomeration methods were employed to identify exemplar and anti-exemplar groups and objects. These elements were thoroughly analyzed, which led to identifying the most and the least desired attributes of an ERP implementation project. The findings are discussed and related with the results of prior research. Finally, implications for practitioners and concluding remarks summarise the chapter.

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INTRODUCTION

The implementation of an ERP system is a great challenge for a company making the effort of introducing such a system into its organisation. The implementation project is usually connected with sizeable expenses for computer software and hardware, as well as for the implementation services provided by a system solution supplier (e.g., Sarkis & Gunasekaran, 2003). The implementation effects could be very diverse, beginning from the considerable enhancement of enterprise activity and increase of its profitability, to the rejection of the system introduced (e.g., Holland *et al*., 1999; McNurlin & Sprague, 2002). The companies introducing ERP packages into their organisations differ quite significantly. The implementation endeavours called ERP projects comprise both simple installations of single modules of a system and complex solutions dealing with the installation of many system modules in numerous units of a company (Parr & Shanks, 2000).

Therefore, ERP implementation projects form a very diverse population and in order to compare particular implementations, one has to keep this diversity in mind so that such a comparison is reasonable (e.g., Stensrud & Myrtveit, 2003). Thus, it seems appropriate to group purposefully implementation projects into homogenous collections, where the comparison of projects is feasible and sensible. Only in this situation can we talk about a "model" implementation project and examine the project discovered in order to reveal the most needed characteristics.

Among the methods of projects grouping suggested by prior studies, there are those employing company size (e.g., Bernroider & Koch, 2001; Buonanno *et al.*, 2005; Everdingen *et al*., 2000; Loh & Koh, 2004) and those relying on a criterion of the number of user licenses (Sedera *et al*., 2003). While previous research indicates that company size is an important criterion influencing ERP project conditions, the results regarding the benefits achieved are mixed. Some research works suggest that benefits gained by large and small sized organisations seem to be similar (e.g., Shang & Seddon, 2000; Soja, 2005) and other studies advocate that benefits differ by company size (Mabert *et al.*, 2003).

Prior studies also suggest other criteria of ERP projects grouping that might influence implementations' conditions. These criteria include the extent of ERP package modification (Soh & Sia, 2005), implementation scope and duration time (Soja, 2005, 2006). The results imply that the implementations' conditions are diverse depending on project type defined by dividing criteria. Moreover, the project type can have an impact on the effects achieved by a company as a result of ERP implementation. In particular, the project duration seems to have an important influence on achieved results (Soja, 2005).

The multitude of potential factors influencing ERP projects is illustrated by the complex division presented by Parr and Shanks (2000). They suggest the following categories for the division of projects: implementation physical scope (single or multiple site), extent of organisational changes, level of system modification, module implementation strategy, and allocated resources in terms of time and budget. Taking into consideration the above-mentioned criteria of a division, there are a great many implementation types. Therefore, Parr and Shanks distinguish three main categories of ERP implementations: comprehensive, averagely complicated (middle-road) and simple (vanilla).

Overall, it seems that it is hard to find a generally accepted division of ERP projects into groups, which would constitute homogenous collections of similar implementations. Prior studies suggest various criteria of ERP projects grouping and these divisions take into consideration merely the variables defining the efforts made in order to implement a system, but they completely omit the issue of achieved effects. Meanwhile, incorporating the parameters describing implementation results could lead to interesting conclusions.