Chapter 11
Specific Factors for ERP-Success Measurement in Healthcare

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ABSTRACT
There are different success factors that influence the outcome of ERP-projects. According to Bullen and Rockart (1981), these success factors depend on five main influencing variables. One of these variables is industry. This shows that each industry has certain requirements on success measurement other industries, in general, do not. In healthcare for example the legal constraints are different from other branches. Each success measurement model has a specific aim and covers specific needs. It measures different success dimensions and can be used at different stages of ERP-projects. Some of the models consider different phases within ERP-projects others can be used to determine overall ERP-success after the implementation of an IS. One important factor for the use of such models is if the models covers branch specific needs in a way that allows the researchers to allocate meaningful results and recommendations for actions. This chapter investigates the specific needs on ERP-success measurement of the healthcare industry and the fit of the existing success measurement models for this use case.

INTRODUCTION
The target of this chapter is the conceptual design of possibilities how ERP (Enterprise Resource Planning)-projects can be more successful when considering critical success factors and success measurement models which were identified through literature review and practical experiences. ERP projects usually deal with managerial/economic information systems development. In the healthcare context the focus is more on the integration of clinical systems like the HIS (health information systems), the EHR (electronical health record), the PACS (picture archiving and

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communication system), the MPI (master patient index), the RIS (radiology information systems and the LIMS (laboratory information management systems. IS (Information system) projects are often very difficult to handle and many companies spend a lot of money in implementing new, state of the field solutions to stay competitive or get competitive advantage (Gronau, 2001; Nah, et. al., 2001; Esteves, et. al., 2002). Another reason for starting new risky IS-projects is the fact that a lot of legacy systems run out of support and these systems cannot handle the business needs of nowadays. One problem with legacy system is the compatibility to the new operating systems which do not allow running the legacy system frontend anymore. Therefore old hard- and software must be used.

There is no ERP system which reflects all corporate processes, it is possible however, to reconsider the process landscape in the company and adapt the processes to the software. This results in a standard solution or a solution which is close to the standard (“vanilla ERP”). Vanilla ERP offers advantages compared with modified solutions in the maintenance, upgrades, the ability of manufacturer support and the support by external consultants. Adapted ERP systems offer the advantage that the adjustments help to support the existing processes and that no or only slight Business Process Reengineering (BPR) has to be carried out. This is particularly important for the replacement of legacy systems because the users are used to do things in a certain way and some companies don’t have the willingness to change. There are also industry-specific solutions (specific ERP solutions which support specific processes of various industries, e.g. retail, automotive or the meat industry), which allows a solution close to the standard. These branch solutions are sometimes offered by the main software vendor itself and sometimes by 3rd party suppliers.

One objective of this chapter is to show the increasing importance of ERP-implementations in healthcare institutions. One reason for that is the business change which took place over the last years. Costs are more important for healthcare institutions than 20 years ago. The healthcare sector is now challenging with similar issues as the private sector companies.

Another objective of this chapter is the field of critical success factors which were identified by literature review and to figure out if there are specific success factors within the healthcare industry or not. As a fist implication of this the success factors which seem to occur just during implementations or projects in healthcare are described and an explanation for this is demonstrated. In the section with the success measurement models the author lists the possibilities of how success of ERP systems can be measured through success measurement approaches which were identified in the literature. The different areas of application, the strengths and the weaknesses of the models are shown. At the end of the chapter the success measurement models of the health informatics are investigated and compared to the more general models identified before. Interesting similarities were found but there are also some differences existing.

In general success measurement projects are usually divided in the following three categories (Auer, 2004):

- Ex-Post measurement: What benefits or harms were provided or caused by ICT systems in the past?
- Ex-ante measurement: What benefit or harm will provided or caused by ICT systems in the future?
- Real-time observation: When, where and how must be intervened to realize the potential benefits and prevent potential damage caused by a non working system?

This chapter focuses on models that can be used for ex-post analysis and models for ex-ante analysis. Real-time considerations are providing more ongoing monitoring of systems to identify
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