

Daniel Schmitz

**Project management standards. An
evaluation of key factors for selection
support and success KPIs**

Master's Thesis

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MASTER'S DEGREE THESIS
IT-Management and Information Systems

**Project Management Standards –
An Evaluation of Key Factors
for Selection Support and Success KPIs**

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1 Introduction

1.1 Abstract

The prevalence of information technology (IT) and the significance of its role in modern companies have both increased rapidly. Nowadays, almost no business operations unit can work or function efficiently without the support of IT-based systems. Regardless of the general purpose of the respective company and the industry the company operates in, after a given point a functioning IT structure is a prerequisite for a fluent, efficient and successful operation.

With an apparently almost infinite variety of IT-supported systems, companies have to deal with the recurring question: Which parts of the company's IT-based systems possibly require a new implementation, improvement, or replacement. However, these questions are, in most cases, equally as complex as the field of application itself, due to the wide variety of complexity and the large number of divergent aspects of IT systems.

After a decision regarding a new implementation, an update/improvement, or a replacement has been made, an overview must be developed of the tasks that will be needed to reach the project goal. Beyond a certain size and complexity, these IT systems cannot be changed on an ad hoc basis. In such a case, a detailed planning of the approach is an important factor to be coordinated to guarantee that the activities will be carried out on time, within the budget, and at the required level of quality. These tasks are commonly defined within projects, which are preferably coordinated by using project management process models. However, not every process model is equally appropriate for every project or project type.

To make a decision about which process model is to be used, a wide range of aspects of the project have to be considered. These aspects are not only project-specific, but also company-related, which means that not every project can be managed the same way in every company, even if the project-specific aspects are almost identical. Alongside the project-specific factors such as the given time frame, the financial limitations, and the commitment to quality, other company-specific factors have to be taken into consideration. These include not only the amount of HR resources needed, but also the skills of the available project members. But the HR resources are not the only assets that have to be planned. In addition to sufficient staffing,

the available software, hardware, and premises must be determined, and often booked in advance.

The development of certain characteristics not only depends on the project itself, but is also related to the process model being used, so that the choice of the correct process model is an important factor in whether the project can be completed in a given time, quality and budget. Therefore, the choice of the correct process model can be very important when it comes to running a project as efficiently and successfully as possible.

In addition to the steadily increasing complexity of IT projects, time and resources have become increasingly rare commodities, and project lifecycles have had to adapt to this tendency. To avoid wasting precious assets, project management process models are being used to structure, control, and supervise the given tasks in each project, so that prior to every successful project the “how to” question is thoroughly considered. Furthermore, there is not just only one answer to this question, since every use case has specific characteristics and restrictions that must be taken into consideration.

One possible approach could be to design a process methodology for each project specifically. In practice, a more suitable solution is to make use of one of the common “best-practice-proven” project management process models. But, prior to answering the question of how to deal with projects and which factors have to be observed in order to ensure a successful project flow, the definition of what constitutes a project must first be established.

1.2 Motivation of this Thesis

The present work deals with the question of which tasks in companies are actually classified as projects, as well as with the determination of project management methodologies for certain types of projects, taking into account predetermined evaluation criteria. In addition, this work deals with the question of which factors should be considered for the duration of the project in order to ensure that the project proceeds as effectively and purposefully as possible. As a practical example, weighting criteria based on the experience of the company WALLMEDIEN AG will be used to determine the appropriate project management methodology for

different types of projects.

1.3 Objectives of this Thesis

The aim of this work is to provide a valid decision-making process to determine which project management methodology is best suited for processing a specific project type, and which factors have to be observed to identify possible threats to the project's success. For the decision-making process, specific weighting criteria may be freely selected according to the respective requirements and conditions. To this end, the typical tasks within companies will be investigated and divided into projects and non-projects.

1.4 Structure of this Thesis

The underlying structure of this work proceeds from the general to the specific. This structure was chosen since it allows the fundamentals to be presented in conjunction with other methodologies and general approaches. The weighting criteria used are based on the practical experience of the software development company WALLMEDIEN AG, which is examined in Chapter 1.

Chapter 2 describes the basics of projects and project management methodologies. Here, a general distinction between traditional and agile methodologies is made and selected relevant methodologies of each type are evaluated. At the end of this chapter, the author provides an assessment and a comparison of both methodology types from his personal perspective.

Chapter 3 considers the activities that go on in companies and provides, based on a developed definition, a division of tasks into projects and non-projects. The resulting projects are then assessed for certain characteristics in order to obtain measured values with which a matching of project type to project management methodology can be undertaken. To achieve this matching, the various project management methodologies are investigated as to their satisfaction of certain requirements and criteria. The values thus obtained are then placed in relation to one another and used to accurately match the specific requirements of the project to a recommended project management methodology to use. In addition, key performance indicators for a project management method are developed, which

can be used to give a project manager a good overview of the current project and possible threats to the project's success.

The main findings are summarized briefly in conclusion in Chapter 4.

1.5 The example company WALLMEDIEN AG

WALLMEDIEN AG is a medium-sized German company with its main field of activity in the electronic procurement sector. It is an independent SAP partner, but also offers software for integration into other ERP Systems. In the SAP environment, WALLMEDIEN's solutions form a standard in electronic procurement. WALLMEDIEN develops and implements concepts for the automation of processes in operational and strategic purchasing. Custom-made solutions are implemented on the basis of standard software for advertisements, auctions, procure-to-pay processes, document exchange, supplier portals, etc. WALLMEDIEN solutions are in use around the world.

WALLMEDIEN's customers include internationally operating companies as well as successful small and medium-sized companies. The focus of WALLMEDIEN's products lies in the areas in which significant savings can be achieved by using electronic procurement solutions, such as:

- All aspects of an electronic procurement process
 - Frictionless data exchange throughout the entire procurement process
 - Creation of catalogue and freetext-orders including approval management
 - Processing of requests for goods and services
- Solutions for supplier integration
 - Electronic transmission and processing of order and delivery data
 - Management and handling of electronic purchase orders and other common e-business documents
- Solutions for catalogue management systems
- Tools and services that increase the benefit of e-Procurement

WALLMEDIEN AG was founded in 1997 in Paderborn, Germany. Today it has offices in Germany, the USA, and China and employs more than 130 people. WALLMEDIEN's products are being used by over 100 companies in 47 countries.

The software solution is available in 29 languages. It connects over 60,000 suppliers worldwide, and the order volume through WALLMEDIEN software is over 12 billion Euros via 4 million orders per year.

1.6 Typical IT activities in Companies

The tasks of an IT department, based on the example of WALLMEDIEN, can be divided into three main phases: plan, build, and run. Within these phases, a number of general tasks arise; however, these tasks can vary depending on the company's type and field of operation. These tasks are discussed in more detail in the following sections.

Plan

Within the planning phase, all relevant IT sectors are examined to identify opportunities for improvement.

Tasks in this phase could include:

- Identification and examination of IT-related requirements
- Evaluation of the need to adapt the IT strategy (products, technologies)
- Budget analysis for business planning
- Monitoring of technical innovations that might be beneficial to the business processes
- Reviewing the performance of and feedback from the business units

Build

In the build phase opportunities for adjustments to improve the IT that is currently in use must be identified.

Tasks in this phase could include:

- Modification of the IT strategy
- Modification of IT-systems and equipment
 - Implementation and deployment of a new system or modification
 - o Introduction of a standard-system
 - o Development of a special-system
 - * Make