Selection of Appropriate IT-Project Management Methods and Tools

Bachelorarbeit

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Abstract

The objective of the thesis was to evaluate selected IT-project management tools by consulting selected IT-project management success factors. For this task two steps have to be taken. In the first part, IT-project management success factors synthesized from the body of literature are given. After that, selected IT-project management tools are evaluated for their functionality regarding these IT-project management success factors. The results reveal the value of the individual IT-project management tool for project managers and the compatibility of the individual IT-project management tool to different IT-project management methods and frameworks. This thesis should be interesting for IT-project management professionals because of the niche that was researched.

Contents

1 Introduction

The speed of innovation in the IT-sector exponentially increased in the last years. To withstand the resulting fast evolving markets IT-projects have to be managed properly. Also, IT-projects face many challenges and have a high failure rate. According to the CHAOS report by Johnson et al. (2015) only 29% of all projects in 2015 were finished successful. The last important reaction of IT-project specialists was the drop of the assumption that the environment surrounding IT-projects is stable with easy to handle risks (Beck (2001)). With this in mind Rajagopalan (2016) analyzed the fit between project environment, choice of method and the resulting performance. Furthermore, the quality of a software product is highly connected with the quality of the process its developed in (Mishra and Mishra (2013)). This software development process is influenced deeply externally by a rapidly changing environment and internally by firm constraints in budget and time. Together with the complexity of managing resources, activities and changes embedded in an organizational structure this leads to a difficult task for any project manager (Rose et al. (2007)). Time delays as a reaction to a change in scope or resource availability together with low productivity are very common occurrences for IT-projects (Nelson (2007)). Therefore, a need for support in IT-project management has led to the origination of project management methods and suitable software tools to assist project managers in their task (Ahmad and Laplante (2006)). Today many articles are occupied with the question of choosing the right project management method (Rajagopalan (2016)). Yeo (2002) also mentions a poor choice in software as a mayor failure factor for IT-projects. Furthermore, the CHAOS report listed project management expertise, tools and infrastructure as critical to project success (Johnson et al. (2015)). A different part of the literature lists and briefly compares project management tools (Abramova et al. (2016), Mishra and Mishra (2013)). As a reaction to this circumstance the thesis on hand is motivated by a lack of articles that compare and investigate different project management tools in detail. This gap has been found during a literature review at an earlier stage on IT-Project management. Thus, a more detailed approach to analyzing IT-project management tools is needed to fill the gap in the body of literature. The desired result from the thesis is more knowledge about how IT-project management tools can realize the potential of the technical developers by helping the IT-project manager in his task. Thus, the research questions in this paper are as follows:

"**What factors are essential for IT-project management success?**"
"**How do different project management methods and tools support project management success?**"

Now that the context and motivation of the thesis is explained the structure of the thesis will be described. IT-Project management methods and tools are investigated and compared. A appropriate project management tool is chosen and applied to different cases.

Another important point to be made beforehand is the difference between IT-project management success factors and project success factors which is also discussed in some of the literature on project success (Prabhakar (2009)). The thesis will not use the classic project success factors such as time, scope and quality as measurements but rather the impact of IT-project management methods and tools on the IT-project management success. The new measurement factors will be synthesized in the first half of the thesis via literature review on project management success factors. In the second and third part of the thesis some basics are defined for understanding the rest of the thesis. More precisely, the traditional, agile and hybrid project management approach are defined. The IT-project management frameworks, Prince2 for traditional and Scrum for agile project management are described in the third section. In the fourth segment, the applied research methods, the literature review and the case study, are explained. During the fifth section the thesis utilizes a literature review according to Webster and Watson (2002) to synthesize IT-project management success factors. In the seventh step the thesis relies on a case study to fit the characteristics of the investigated project management tools to the IT-project management success factors. In the eighth section the methods and tools are compared under the premise of the IT-project management success factors described in the literature. The thesis discusses limitations in the ninth section and lastly, draws a conclusion and an outlook in section ten.

9 Conclusion and Outlook

In a fast moving world with a high rate of innovation and a fast product life cycles IT-projects become increasingly crucial to many companies success. Concluding, the success of such IT-projects is imperative to achieving a competitive advantage. They are necessary to, for example, restructure information flows or elevate the production value by introducing or developing new software. It comes as a problem that IT-projects inhabit a high complexity, thus, more unpredictability of outcome than any other undertaking. Therefore, a high amount of failures mark the landscape of IT-projects all over the world Johnson et al. (2015). This work was dedicated to solve part of the chronic high failure rates of IT-projects by analyzing the management portion. The first question answered by this paper revolved around the synthesis of reasonable IT-project management factors for the evaluation of selected project management tools. This was achieved by conducting a literature analysis. The literature regarding IT-project management success factors as part of the IT-project success factors is in some parts relatively young, although practical cases accumulate because a rapid increase in the execution of IT-projects. After the literature analysis has been conducted five reasonable fitting IT-project management success factors had been found for the second part of the thesis. The success factors covered planning, resources, coordination, communication and flexibility as most important aspects of IT-project management which can be influenced by a software tool.
This next part evolved around how different IT-project management tools and their underlying methods assisted the project manager in his task. In this step cases were built for each IT-project management method. The results were three cases with three different, fitting IT-project management tools. During the studying of a case, first, all function would be examined for their value to the five IT-project management success factors. After the analysis of the tools a comparison was conducted to explore the fit of the individual tools to the different methods. Also, some results were found, regarding the value of open source vs. proprietary IT-project management tools and collaborative vs planning tools. Different methods and their tools valued some of the IT-project management success factors very differently. For traditional tools communication and coordination was not a crucial topic at all. On the other hand for agile IT-project management the tasks of a project manager evolve around the idea of communication and flexibility. Other results were the viability of Microsoft Project for all IT-project management methods, the lacking of functions for agile IT-project management for ProjectLibre and the role of JIRA for all IT-project management methods.
A look at the future reveals challenges for IT-project managers in the form of information quality and management methods. The analysis in this paper did not only deliver answers but raised questions as well which require further research into the topic. First of all, the viability of the functions which are used in the tools should be questioned. Which functions are essential to IT-project management and IT-project success? Does the abundance

of report types lead to information overflow? How well will the new hybrid approach to IT-project management perform? These and other questions are to be answered to keep up with the high rate of innovation in a rapidly changing competitive environment.