IS project (Bachelor/Master): AI-Supported Project Management (PMAI2)

Creating and assessing a software prototype to provide contextualized recommendations from research to PM practitioners

SITM

Chair of Information Systems and Strategic IT Management

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Introduction

Project management (PM) is seen as a suitable response to the challenge of planning and executing projects successfully, on time, on budget, and at the expected levels of quality. At the same time, project work becomes increasingly more prevalent and important for organizations dealing with the today's rapid pace of change. It is not surprising that many organizations already have, or are in the process of implementing, sophisticated PM processes and structures to improve their project efficiency and effectiveness. However, despite the supposedly successful design and introduction of these processes and structures, they often yield very limited benefits, or the benefits can only be realized at some remote point. This is unfortunate, as PM initiatives often represent significant investments that are supposed to pay off early on. To date, research has offered limited explanations for PM implementations' success and what contributes to this. It also offers no theoretical explanation for benefit realization appearing to be difficult and a rather on-going process. On the other hand, there are large amounts of research (though perhaps not coherent) investigating project success criteria, critical success factors, the effects of various PM activities, comparing PM methods, the composition and collaboration of project teams, workload estimation, and so on. Despite this large amount of research, or perhaps partially because of its quantity and scope, PM practitioners rarely assess and use research findings that may be applicable to their particular PM context. So how can we better interpret and systematically use PM research findings to advice practitioners depending on their PM goals, environment, and other contextual factors?

This project addresses the aforementioned research gaps. It is based on a preliminary rationale that states that we can codify PM research findings, combine it with practical PM experience from seasoned professionals and, based on a series of questions or existing project documents, present PM advice and recommendations relevant for the practitioner's particular situation. We aim to develop and assess

a software prototype for this purpose. A first, early version of the prototype exists and will be the basis of continued development.

In practical terms, the software prototype uses a modern JavaScript stack (e.g. Node, React-native, AWS Lamba, MySQL, etc.), aims to be simple yet extendible, with a high value placed on the UI experience. This is an app deployed to the cloud (AWS) and usable across mobile and web devices. We will gradually attempt to integrate Machine Learning (Artificial Intelligence) methods to learn from project documents and practitioner feedback to improve the applicability of recommendations.

In terms of research methods, you will be able to learn how design science works in practice, the state of the art in terms of PM research findings, rapid prototyping, and how to assess information systems.

Contribution and tasks

In the project, students become part of a research team that will use prototyping and exploratory case research to test the aforementioned rationale. In general, we ask you to take an active role in this project, taking on responsibilities in the project's planning, software development, user interface design, data collection and collaboration with third-party business partners.

Several groups of students will be formed or assigned to work in different work streams, depending on the students' suitability and familiarity with software development and other techniques. Therefore, the specific tasks for each student or group of students will vary accordingly. For instance, one group of students may focus on software development (in an agile manner), one group on the codification of PM research findings (i.e. developing a process and ontology for a coherent, structured, and linked set of statements regarding PM applicable to some context), and another group on assessing market and business aspects of such an IS (e.g. business case development incl. market analysis, business model canvas, etc.).

The project offers a unique opportunity to experience a real-world, on-going research project from the inside and is a perfect chance to prepare for one's master thesis. Further, it is a great way to deepen your skills in software development, theoretical thinking, business understanding, and rapid prototyping, which are all highly valuable on your CV.

Evaluation

1) 50% of final grade: Research/project report (Word, approx. 20–50 pages)

2) 50% of final grade: Final presentation of the project results (PPT plus verbal delivery)

The evaluation considers whether students are in their bachelor or master studies.

Application

Interested bachelor or master students (or groups of students) can apply for this project by submitting a current grade transcript and a brief motivational letter before 2017-10-31 23:59. Please use the online application form: http://udue.de/sitmproject