Outcome Specification:

Digital Transformation Maturity Model (DTMM)

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ProDiT
Projects for the Digital Transformation

1. Summary

Digital Transformation Maturity Models are specialized maturity models that focus on the implementation on the digital transformation in a company. They enable organisations to assess their current digital capability. The models highlight the critical areas in an organisation and help them to create a plan move to a higher level of digital capability. The models also help in steering the overall digitalization process, as the areas that need special attention are already being highlighted.

Overall Goal: Along the digital transformation process, the organisation faces organisational development challenges, that can be seen in maturity level enhancement and very fast growing and expanding knowledge management. Existing maturity models either do not fit to the digital transformation or address only specific scenarios. The goal of the research is to find a taxonomy of digital transformation projects and – based on the different types of projects – either develop a holistic maturity model or a meta model covering different maturity models.

Purpose and Requirement Analysis: Typical use cases for a Digital Transformation Maturity Model (DTMM) are:

- Describing the current status of an organisation with respect to the digital transformation
- Defining a target maturity level to which the organisation wants to develop
- Assessing the gap between the current maturity level and a target level
- Planning the maturity enhancement and derive digital transformation projects

Current State-of-the-Art: Maturity models are intensively researched and used, there is a huge variety of approaches and models. This state-of-the-art needs to be reviewed and the existing gaps need to be identified.

Problem Statement: Existing maturity models either do not fit to the digital transformation or address only specific scenarios.

Research Plan: Key research questions are: How do organisations need to be transformed to be able to cope with the digital change? How can we assess their maturity? How can we deal with the fast growth of knowledge in our projects and organisations?

Dissemination & Standardisation: Results are planned to be disseminated and standardized with the IEEE and IPMA.

Quality Evaluation: t.b.d.

Change History & Ownership:

Release V1.0: Initial version of the specification of the DTMM, OpenCoP on Projectized organisations in the Digital Transformation, 09.09.2022

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2. Introduction to the Digital Transformation Maturity Model (DTMM)

The Digital Transformation Maturity Model (DTMM) is a formal definition and a guideline for the formalized description of the status and the development perspectives of an organisation in the process of the digital transformation, e.g:

- Maturity (or development) level of an organisation with respect to the digital transformation or certain aspects of the digital transformation
- Assessment of an organisation with respect to a certain maturity level, e.g. describing the deficits or delta compared to that level
- Identification of areas for specific digital transformation steps, prioritization and planning of respective digital transformation projects
- Audit with the goal to confirm the compliance of an organisation with a specific maturity level
- Support for the definition and planning of development paths through one or more maturity level
- Structuring and overview of existing maturity models with respect to an overarching meta model

The main research topics in this context are:

- Literature review on existing maturity models – especially in fields relevant for digital transformation - with the goal to develop a taxonomy of maturity models
- Literature review on existing development or capability frameworks, catalogues of characteristic features etc. and reflection with respect to the maturity models
- Formulation of requirements for a digital transformation maturity model (DTMM)
- Concept for general maturity model or a meta model for the digital transformation maturity model (DTMM)
- Concept for assessing the maturity level of an organisation with respect to the DTMM
- Concept for assessing the difference between two maturity levels in a formal way, especially for calculating a quantified capability gap
- Validation of the concepts in different use cases of organisations in the digital transformation process
- Validation of the concepts in consulting industry

3. Description of the planned research

3.1 Overall Goal

Along the digital transformation process, the organisation faces organisational development challenges, that can be seen in maturity level enhancement and very fast growing and expanding knowledge management. Existing maturity models either do not fit to the digital transformation or address only specific scenarios. The goal of the research is to find a taxonomy of digital transformation projects and – based on the different types of projects – either develop a holistic maturity model or a meta model covering different maturity models.

3.2 Purpose and Requirement Analysis

The research about projects for the digital transformation covers different views on the topic, especially the project view, the people view, the organisational view, and the impact view. The research on the Digital Transformation Maturity Model (DTMM) is a relevant part of the organisational view, addressing two research questions: How do organisations need to be transformed to be able to cope with the digital change? How can we assess their maturity?

Figure 1: Organisational focus of the research on managing the digital transformation with projects

The purpose of the Digital Transformation Maturity Model (DTMM) is to support the assessment of organisations with respect to the digital transformation maturity and to develop the right digital transformation projects out of this assessment. This involves a holistic analysis of organisational development aspects, especially for knowledge- and technology-based organisations. Typical use cases for a Digital Transformation Maturity Model (DTMM) are:

- Describing the current status of an organisation with respect to the digital transformation
- Defining a target maturity level to which the organisation wants to develop
- Assessing the gap between the current maturity level and a target level
- Planning the maturity enhancement and derive digital transformation projects

3.3 Current State-of-the-Art

To tackle challenges of DT implementation, [1] provide a practical guidance for developing a tailored Industry 4.0 strategy in alignment with the business strategy. Authors highlight that making the most out of Industry 4.0 companies should be transformed into learning, agile organisations. [2] provides an overview on knowledge management definitions and processes, and introduces the personal knowledge network model, which could help cope with the fast-paced change; author claims that application of the model can further act as an agile knowledge-networking organisation. [3] propose a reference model to integrate different types of requirements management knowledge, including additional requirements knowledge for DT.

Maturity models have been created to help implement process improvement in an organisation concerning a certain management discipline. These models are created to help an organisation move to optimum capability in a certain time frame [4]. Maturity models either follow the top-down approach and have certain maturity stages and levels that a company can reach until it is fully mature [5] or they follow the bottom-up approach in which characteristics are determined first and then in a second step being put into maturity levels [6]. The common number of maturity levels is three to seven [4].

The most famous maturity model is the Capability Maturity Model, CMM. It is a universal maturity model which is used to optimize processes across an entire organization. The CMM has five maturity levels [7]:

1. Initial

2. Managed

3. Defined

4. Quantitatively Managed and

5. Optimizing.

3.4 Problem Statement

Existing maturity models either do not fit to the digital transformation or address only specific scenarios.

3.5 Research Plan

A) Research Questions and Hypotheses

From the overall project goal, the following research questions are derived:

- How do organisations need to be transformed to be able to cope with the digital change?
- How can we assess their maturity?

An additional research questions with respect to organisational development is:

- How can we deal with the fast growth of knowledge in our projects and organisations?

B) Research Methods

The following research methods are applied:

- Systematic Literature Reviews
- 8-step approach for conducting a systematic literature review adopted from (Okoli & Schabram, 2010)
- Delphi method
- (semi-) structured interviews
- Analysis of case studies
- Surveys
- Experiments

C) Research Plan

t.b.d.

3.6 Additional Considerations

t.b.d.

3.7 Dissemination & Standardisation

Results are planned to be disseminated and standardized with the IEEE and IPMA, e.g.:

- IEEE ETEMS conference series
- IPMA World Congress
- AIEPRO (IPMA) conference series

3.8 Quality Assurance - Evaluation

Quality Assurance and Evaluation are done via the following mechanisms:

- Quality surveys among participants
- Review and release of results via Internal Evaluation Board (IEB)
- Publication in peer-reviewed conferences and journals
- Test in selected case studies

4. References

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