

## Available Master's Degree Theses Topics: Empirical Investigations in the Field of Digital Enterprise Transformation & IT Management (in Cooperation with Wirtschaftsbetriebe Duisburg)

Rapidly evolving digital technologies are disrupting companies' traditional operating models and causing uncertainty, ambiguity, and variability in an increasingly globalized and networked environment. To keep pace, process improvements and incremental changes are often insufficient to meet an enterprise's challenges when the latter are the result of recent developments such as the increasing empowerment of consumers and the rise of innovative technologies like machine learning or the internet of things. Addressing today's strategic challenges may involve *digitally enabled enterprise transformation*, i.e. making fundamental changes to business models, structures, products, and processes by using innovative digital technologies. Enterprise transformation involves fundamental changes concerning relationships with customers, competitors, employees, and suppliers. Disruptive innovation, technological change, institutional transformation, and capability development are at the core of the sociotechnical process of digital enterprise transformation [1, 2].

The Chair of Information Systems and Strategic IT Management (SITM) is looking for Master's students who are planning to write their final thesis in the field of digital enterprise transformation in the near future. The offered theses topics are practice-related work in cooperation with the Wirtschaftsbetriebe Duisburg – AöR (WBD). The WBD, as a municipal service company, is one of the major players in the city of Duisburg with a variety of business fields and 1,750 employees. Their service portfolio ranges from waste disposal, city cleaning and urban drainage to the maintenance of playgrounds, parks and cemeteries and long-term infrastructure planning and maintenance.

Both subject areas described below involve empirical analyses of some kind. The theses will be co-supervised by an experienced manager who will provide close support during the entire process, particularly during the data collection stage. The student will select a suitable research design [3] in coordination with the supervisors from the Chair of Strategic IT Management and WBD. Possible approaches in both cases include quantitative (e.g. survey [4, 5]) and qualitative (e.g. expert interviews, case study [6, 7]) research methods.

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### Offer 1: Assessing the Digital Readiness of Municipal Companies

There are already many measurement models for digital readiness available in the literature. However, these are scattered over many research areas, e.g. educational research/pedagogy, organizational research, sociology, organizational behavior, management science, etc. Furthermore, these measurement models differ in terms of the underlying assumptions for the development of companies. In addition, the more accurate or reliable the statement about a digital maturity level should be, the more effort is required to make valid and meaningful measurements. To deal with this challenge, different approaches are conceivable.

Possible directions:

- Development of a “Quick-Test” for the degree of digitalization in companies that has a low-threshold but is still sufficiently accurate. It would be exciting and necessary to look at the methodological approach of such “Quick-Tests” and to find out how to validate them quantitatively or qualitatively.
- Development of a different survey instrument plus a first “hands-on” evaluation/validation of the instrument.
- Assessment of a recently presented modern approach to the development of maturity models for the digitalization of companies.
- Combination of the acquired material into a “toolbox” with various good measurement models, from which it is possible to choose and combine them to a situationally appropriate questionnaire. Topics could be e.g. culture, strategy, structures, business model, motivation/satisfaction of employees, leadership style, satisfaction with trainings, project-related communication, etc.

### Offer 2: Success Factors of Digital Enterprise Transformation for Municipal Companies

Digital Enterprise Transformation and IT success are relatively extensive topics in the IS literature. However, the links and differences to municipal companies have hardly been in focus, especially in terms of archetypical configurations of such companies.

Possible directions:

- Collection, evaluation and linking of the central elements of a successful transformation of enterprises, with reference to public sector enterprises.
- Development of different configurations of a successful transformation in the context of municipal companies.
- Mapping of the success factors to different objectives and an overall goal analysis of the identified success factors.

## Application

The topics are only open to Master's degree students. Both theses are to be written in **English**. Due to the practical implications of collaborating with a German municipal company, we also suggest that you are fluent in German as well. Interested students can apply by submitting an up-to-date transcript of their records and a motivational letter via e-mail to [sekretariat.sitm@uni-due.de](mailto:sekretariat.sitm@uni-due.de) with the subject line "*Application WBD Master's thesis offer [1 or 2]*" **by 31.08.2020**.

## References

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4. Bhattacharjee, A.: Social science research: principles, methods, and practices. University of South Florida, Tampa, FL (2012).
5. Fowler, F.J.: Survey Research Methods. SAGE Publications, Los Angeles, CA (2013).
6. Miles, M.B., Huberman, A.M.: Qualitative data analysis: An Expanded Sourcebook. SAGE Publications, Thousand Oaks, CA (1994).
7. Yin, R.K.: Case Study Research: Design and Methods. SAGE Publications, Thousand Oaks, CA (2002).