

Please quote as: Peters, C.; Elm, C.; Söllner, M. & Leimeister, J. M. (2014): Blueprint-driven Telemedicine Process Modeling - The Interdisciplinary Development and Evaluation of a Modeling Language for Telemedical Services. In: Annual AIS SIG Services Pre-ICIS Workshop 2014, Auckland, New Zealand

# Blueprint-driven Telemedicine Process Modeling - The Interdisciplinary Development and Evaluation of a Modeling Language for Telemedical Services

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By Christoph Peters, Christian Elm, Matthias Söllner und Jan Marco Leimeister

Service process modeling faces domain-specific challenges. Telemedicine, understood as a service system, requires adequate representation for multi-stakeholder service scenarios, technical infrastructures as well as customer interaction levels. This is due to both its world nature, i.e. telemedicine integrates solely technical parts, as well as explicitly person-oriented parts.

This design science paper uses action research in order to develop the Blueprint-driven Telemedicine Process Modeling (BTPM) language, a modeling language for telemedicine services (TMSs) and processes that are based on BPMN and service blueprinting.

We present how the action research setting guided us through the workshop-informed, iterative design and evaluation of BTPM. It inherits the well-known BPMN-concept of pools and lanes which allows for modular stakeholder-extensions, i.e. adding new pools for new stakeholders. Also, it integrates blueprinting-specific elements, e.g. the line of interaction or the line of visibility, in order to represent both, value-creating face-to-face momenta as well as on-stage and backstage activities. Furthermore, BTPM explicitly considers telemedical devices and distinguishes between stakeholders using color coding. In addition, we show how BTPM meets the telemedicine-specific requirements which have been elicited in case studies performed earlier and have been redefined in the workshops. We also provide a proof-of-concept using a telemonitoring service.

Thereby, we contribute to practice by presenting a modeling language that is adequate for telemedicine as it respects the particularities of this service system. It explicitly assists providers to model their service experience scenarios. The theoretical contribution lies in the iterative design and evaluation of the artifact, the BTPM, and the interdisciplinary research setting for the domain-specific language development.

Keywords: complex services, service modeling, modeling language, telemedicine, action research, design science, service blueprint