Abstract: Technical products and processes do not represent complex but complicated systems. Complexity gets implemented into such systems by including users and use cases. Hereby, technical systems can be interpreted as enablers, which fulfill functions for the user. We define the combination of users and enablers as a “system in application” and propose applying methods from structural complexity management for its modeling and analysis. Therefore, we introduce two structural characteristics and their interpretation. Based on modeling, analysis and interpretations we present procedures for system improvement and evaluation in terms of increased system usability. The practical application of the new approach on the check-in process for air travel shows achievable benefits from systematic improvement and evaluation strategies. Future work will cover the extension of applicable structure analyses and methods of multi-domain analyses.

Stichworte:
Structural complexity; Enabler; User; Design structure matrix

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