

Model-Based Evaluation of Service-Oriented Enterprise Architectures

Abstract. Enterprise Architecture (EA) has undergone many changes since the IT has found its way into the world of enterprises. The introduction of Service-Oriented Architecture (SOA) is such a change with major consequences. The introduction of an SOA increases the flexibility and thus the productivity of an enterprise architecture, but unfortunately also its complexity. This makes the transformation of an enterprise architecture to an SOA-like enterprise architecture to a challenging and risky task. To overcome the change- and complexity-related problems when introducing SOA, Enterprise Architecture Management (EAM) systems are required. The approach of this thesis suggests a method on how to establish Enterprise Architecture Management that is especially suited for an SOA introduction. This thesis suggests a variant of an EAM system that is especially suited for the introduction of an SOA. The presented method on creating such an EAM system includes guidance on how to define a meta model for Service-Oriented Enterprise Architecture (SOEA), which is harmonized with the respective enterprise architecture. The SOA introduction is especially supported by defining SOA quality criteria and corresponding metrics. Some metrics have to be ascertained by experts. Other metrics have their measuring points within the SOEA models (instances of the SOEA meta model) and their calculation is automatable. Creating and maintaining SOEA models as well as applying the automatable metrics are supported by an eclipse-based tool. As metrics only produce measures that are hard to interpret, indicators are introduced. They allow interpreting the measures concerning the quality criteria. With the help of this EAM system, the transformation of an enterprise to a service-oriented enterprise can be planned and the level of goal-achievement (SOA-conformance of the EA) can be monitored steadily. By this, the contribution of this work aims at the reduction of the risk when introducing an SOA.