The Design of Focus Area Maturity Models

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Abstract. Maturity models are a well-known instrument to support the improvement of functional domains in IS, like software development or testing. In this paper we present a generic method for developing focus area maturity models based on both extensive industrial experience and scientific investigation. Focus area maturity models are distinguished from fixed-level maturity models, like CMM, in that they are especially suited to the incremental improvement of functional domains.

Keywords: Design Research Methodology, Design Science, Enterprise Architecture, Software Product Management, Maturity Model.

Within the field of IS new functional domains, like enterprise architecture and software product management, are still emerging. Developing such functional domains is a complex matter. Decisions have to be made about how and in what order to develop new processes, deliverables and competences. Maturity models are a well-known instrument to support incremental development of functional domains, as they distinguish different maturity levels that an organization progresses through.

In this paper we present a generic method to develop a particular kind of maturity model, the focus area maturity model. The focus area maturity model is particularly well-suited to support incremental development of functional domains as it departs from the concept of having a limited fixed number of generic maturity levels as used in CMM. Instead it defines maturity levels, called capabilities, per focus area within the functional domain. By juxtaposing all capabilities of all focus areas of a domain relative to each other, a balanced, incremental development path is defined. This juxtaposition of capabilities is done by positioning the capabilities in a matrix as shown in figure 1, which gives an example of a focus area maturity model in the functional domain of enterprise architecture. The capabilities are depicted by the letters A to D. Each capability is associated with a number of checkpoints. An architecture profile of a specific organization can be depicted by coloring the cells up to the capability that has not been implemented yet. The architecture profile provides

insight into the strengths and weaknesses of the domain and where to focus improvement actions.

Maturity Scale Focus Area	0	1	2	3	4	5	6	7	8	9	10	11	12	13
Development of architecture		A			B			C						
Use of architecture			A			B				C				
Alignment with business		A			B				C					
Alignment with the development process			A				B		C					
Alignment with operations					A			B			C			
Relationship to the as-is state					A				B					
Roles and responsibilities				A		B					C			
Coordination of developments							A			B				
Monitoring					A		B		C		D			
Quality management								A		B			C	
Maintenance of the architectural process								A		B		C		
Maintenance of architectural deliverables					A			B					C	
Commitment and motivation		A					B		C					
Architectural roles and training				A		B				C			D	
Use of an architectural method				A						B				C
Consultation			A		B				C					
Architectural tools							A				B			C
Budgeting and planning				A							B		C	

Fig. 1. A focus area maturity model for the functional domain of enterprise architecture.

Applying design science research methodology [1], we developed a generic method for developing focus area maturity models, depicted in figure 2.
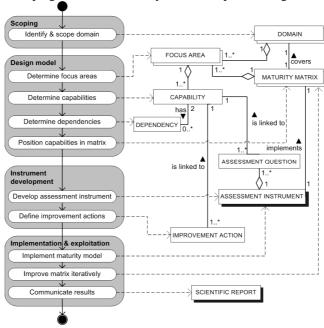

Fig. 2. The development method for focus area maturity models.

The development method is based on both literature review [2, 3, 4, 5] and extensive industrial experience in applying the focus area maturity model concept [6, 7, 8, 9] . The concept of the maturity matrix is refined by building a mathematical formalization of the matrix.

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