Evaluation Concept of the Enterprise Architecture Management Capability Navigator

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Abstract: Organizational knowledge is a crucial aspect for the strategic planning of an enterprise. The enterprise architecture management (EAM) deals with all perspectives of the enterprise architecture with regard to planning, transforming and monitoring. Maturity models are established instruments for assessing these processes in organizations. Applying the maturity model development process (MMDP), we are in the course of a new maturity model construction. Within this work, we first concretize the building blocks of the MMDP and present the first initiations of the Enterprise Architecture Capability Navigator (EACN). Afterwards, we discuss the need for an evaluation concept and present the results of the first EACN evaluation iteration.

1 INTRODUCTION

The idea of the Enterprise Architecture Management (EAM) paradigm is to model important enterprise elements and their relationships that allows the analysis of as-is and target state dependencies (Aier et al.). It is not only important to be aware of existing organizational knowledge but also to continuously gather and assess information about the quality of individual perspectives and their dependencies. By making the organizations more sensitive towards the impact of business strategy implementation on different architecture layers (e.g. Business Architecture, Information System Architecture, Technology Architecture) companies need to control enterprise-wide EAM processes (Wißotzki and Sonnenberger, 2012). For this purpose, the concept of maturity was employed for EAM which assigns different levels of achievement by means of a maturity assessment to processes, sub-processes, capabilities and characteristics (Meyer et al., 2011).

Maturity models are established instruments for assessing the development processes in organizations. In (Wißotzki and Koç, 2013) a process for the development of a maturity model, the Maturity Model Development Process (MMDP) within an EAM project context was introduced. In this paper we pursue two objectives: The first objective is the stepwise instantiation of MMDP, which is carried out in section 2. The second objective ties into the four building blocks of the MMDP. After instantiating the first three building blocks, we discuss the need to develop an evaluation concept for a very important MMDP artefact, the Enterprise Architecture Capability Navigator (EACN), which is described in section 1.1 and in section 2.2. To meet this second objective, we summarize the DSR-Evaluation Frameworks proposed in the literature (Venable, 2006), (Venable et al., 2012), (Cleven et al., 2009) in section 3 and begin to instantiate the fourth building block of MMDP in section 4.

1.1 Maturity Model Development Process

Maturity Model Development Process (MMDP) is a method for maturity model construction, which consists of four different building blocks (i.e. *construction domains)*. The MMDP ensures the flexibility of the maturity models because of its applicability to different scopes. Each building block focuses on a variety of angles that produce different outputs and are made up of smaller processes. The MMDP aims for the model reusability as well as a systematic building of a design artifact. Section 2 presents the details of MMDP building blocks which

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have been instantiated so far and also shows the need of an evaluation concept.

1.2 Enterprise Architecture Capability Navigator (EACN)

The concept of maturity was employed for EA which assigns different levels of achievement by means of a maturity assessment to processes, sub-processes, capabilities and characteristics with EA purposes (Meyer et al., 2011, p. 167). In order to do so, organizations have to carry appropriate actions into execution which later on should be turned into strategies. In order for these actions to be executed, there is a need for an integrated approach which could be gained by implementing EAM. This is a prerequisite for an enhanced holistic enterprise view that reduces the management complexity of business objects, processes, goals, information infrastructure and the relations between them. Either way, the successful adoption of EAM is accompanied by challenges that an enterprise has to face and to overcome. In order to implement the operationalized strategic goals efficiently and to achieve a specific outcome, the enterprises require EAM capabilities.
The idea of constructing an EAM capability maturity model was triggered by a cooperation project between the University of Rostock and alfabet AG (now Software AG) Berlin. An instrument to assess and improve the capabilities of EAM is supposed to be developed in collaboration with our industry partner. The main purpose of this research is the identification of EAM capabilities and their transfer to a flexible, feature-related measurement system which contains both - the methodology for the maturity determination and concepts for the further development of the relevant EAM capabilities of an enterprise. Based on MMDP, possibilities for creating and finding capabilities in enterprises as well as their relations to enterprise initiatives are explored and defined.

A *capability* is defined as the organization's capacity to successfully perform a unique business activity to create a specific outcome (Scott et al., 2009) and the ability to continuously deliver a certain business value in dynamically changing business environments (Stirna et al., 2012).

Unfortunately, this definition is not detailed enough for our purposes due to missing descriptive elements. In our approach, a capability generally describes the ability to combine information relating to a specific context like architecture objects and management functions for *EAM Capabilities* or business objects and management functions for *Business Capabilities*. The context elements merged with a combination of information relating to e.g. information about architecture models or standards, roles with corresponding competences to create a specific outcome that should be applicable in an activity, task or process with appropriate available resources such as technologies, HR, Budget, Personnel will form our EAM Capability illustrated in Figure 1 (Wißotzki et al., 2013)

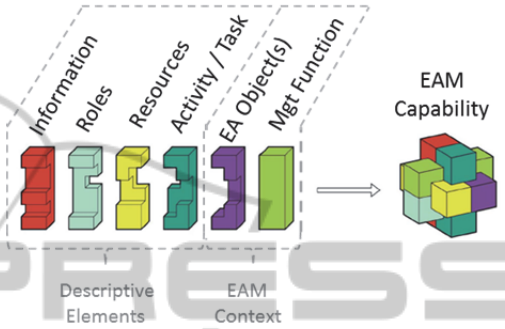

Figure 1: EAM Capability[1].

In this context, EACN is an elementary approach that identifies the EAM capabilities which are derived through structured processes and then gathered in an enterprise specific repository for an efficient operationalization of enterprise initiatives.

EACN is comprised of Capability Solution Matrix, Capability Constructor, Capability Catalog, Evaluation Matrix and recommendations for improvements which are elaborated in section 2.1.2 and in (Wißotzki et al., 2013).

1.3 Methods in the Maturity Model Research

Organizations will increasingly adopt maturity models to guide the development of their capabilities and new maturity models that assist decision makers in practice will not diminish (Niehaves et al., p. 506). Thus, maturity model research gained increased attention in both practice and academia. Based on the comprehensive study in the maturity model research that has been conducted by Wendler (Wendler, 2012), two main research paradigms are identified in the development of maturity models. *Conceptual research* is an artifact of the designer´s creative efforts which is only to a very small extent grounded in empirical data (Niehaves et al., pp. 510–511). In context of maturity models, research activity is conceptual if the developed artifact has

[1]Image provided by Corso Ltd..

not been verified via empirical methods (Wendler, 2012, p. 1320). On the other side, *design-science research* (DSR) is a construction-oriented problem solving paradigm in which a designer creates innovative artifacts answering questions relevant to human problems, thereby contributing new knowledge to the body of scientific evidence (Hevner and Chatterjee, 2010). As a problem-solving paradigm, design-science research resembles utility and its artifacts have to be evaluated. The research of maturity model development adopts widely conceptual research (Solli-Sæther and Gottschalk, 2010, p. 280) that outweighs design-oriented model developments in maturity model research (Wendler, 2012) which has significant consequences for validation. The empirical methods like surveys, case studies, interviews, action research, literature reviews are rarely used within a conceptual design, hence many maturity models which were developed conceptually are suffering a lack of proper validation of their structure and applicability.

Validation is "the degree to which a maturity model is an accurate representation of the real world from the perspective of the intended uses of the model" (Mettler, 2011, p. 92) and "the process of ensuring that the model is sufficiently accurate for the purpose at hand" (Sarah Beecham et al., 2005, p. 2). There is a need for studies in the field of evaluation in maturity model research (Niehaves et al., p. 506), (Solli-Sæther and Gottschalk, 2010, p. 280). The research topics in this area generally cover maturity model development and application but only few of them deal with the evaluation of maturity models. Even though, authors that are developing maturity models include empirical studies to validate their models, the low numbers indicate very limited evaluation studies in maturity model research (Wendler, 2012, p. 1324).

To classify our research approaches applied up to date, the MMDP is based on the maturity model development procedure of Becker and extends it in accordance with our specific project needs (Wißotzki et al., 2013). EACN on the other hand adopts a multi-methodological procedure. As a result, they mainly adopt the design science research paradigm. Nevertheless, both have their shortfalls in the evaluation processes. Wendler (2012, p. 1320) and Becker et al., (2009a, p. 214) state that "a maturity model has to be evaluated via rigorous research methods". (Recker, 2005) adds that "no problem-solving process can be considered complete until evaluation has been carried out". The evaluation step is a substantial element of a DSR artifact, the utility, quality and efficiency of a DSR artifact has to be demonstrated in order to fulfil relevance and rigor (Hamel et al., 2012, p. 7), (Cleven et al., 2009, p. 2).

2 PREVIOUS DEVELOPMENTS

In this section the initial outputs of the Maturity Model Development Process (MMDP) are presented. As described in section 1. the MMDP adopts four building blocks. The first building block is already completed. The second building block (EACN) is still under development but the main concepts have been published. There is not much activity in the third building block, which is planned to be developed after the completion of the fourth building block that conceptualizes a method to evaluate and maintain the resulting artifact (EACN). The building blocks of the MMDP are detailed in the following.

2.1 1st Building Block: Scope

The first building block mainly determines the scope of the maturity model and examines need to develop a model to solve addressed problems. In this section the findings of the first building block in MMDP are specified, which should provide a framework for the second building block.

i. Define Scope: The EACN is developed for a successful integration and enhancement of capabilities to support enterprise-wide management of different architectures. The aim of this project is the development of a maturity model to assess and to improve the EAM capabilities. Hence the scope of EACN is rather specific than being general.

ii. Problem Definition: Enterprise strategies are in close relation to various dimensions like business goal definition, business technology, roles as well as their combinations. There is a need for an integrated management approach in order to take successful actions in these domains which could be achieved by implementing EAM. Nevertheless, adoption of EAM is accompanied by challenges that an enterprise has to overcome by deploying its capabilities (Wißotzki et al., 2013).

iii. Comparison: There is a need of a comprehensive model that can ease above mentioned challenges by (1) identifying the capabilities in the enterprise (2) evaluating their current and target-state and (3) recommending best practices for improvement, if necessary. The model should also enable systematic development of

capabilities, if they are not present in the enterprise repertoire yet. In our research process we were not able to identify such a model.

iv. (Basic) Strategy for Development: The EACN will be developed from the scratch. University of Rostock and industry partner are involved in this development process. The capabilities and the methodology have to be constructed in a scientific manner that it aligns to well-established practices. Together with the transparent documentation of the development processes, the model reusability has to be assured, for instance in form of applying meta-models.

v. Design Model: In this phase the needs of the audience are incorporated, defined and how these needs are going to be met (Bruin et al., 2005). Capabilities, domains, areas and/or processes as well as the dimensionality of the maturity model are designed. Moreover, we decided on how these items should be populated. In this perspective, EACN defines the maturity levels process, object and target group and it is a multidimensional approach since it emphasizes capabilities that relate to different domains (architecture objects and/ or management functions). The whole process was designed in both ways - theory-driven (Wißotzki et al., 2013, p. 115) and practice-based (alfabet AG/ Software AG).

As elaborated in (Wißotzki and Koç, 2013) and in section 1.3, the maturity model development process aligns with the procedure model of Becker et al., (2009a) and with decision parameters of Mettler (Mettler, 2009). Moreover, EACN deploys the idea of "capability meta-model" in general based on (Steenbergen et al., 2010, p. 327). The requirements of the first building block is almost defined such that only a design model issue remains unanswered which comprises of the application method (how) of the maturity model.

2.2 2nd Building Block: EACN

The EACN is being developed on the basis of the second building block in MMDP, which uses the findings of the first building block. The construction of EACN elements is an on-going process and in this section we report to what extent the EACN has been instantiated.

EAM Capability Catalog: A repository of existing capabilities in an enterprise. If new capabilities have to be introduced then these will developed via the EAM Capability Solution Matrix and the EAM Capability Constructor and preserved in the EAM Capability Catalog.

EAM Capability Solution Matrix: The EAM Capability Catalog is enriched by the set of capabilities that are derived from EAM Capability Solution Matrix. The solution matrix has two dimensions, namely management functions and EA objects and shows how the capabilities relate to each other. The management functions (planning, transforming, monitoring) and its components are derived from (Ahlemann, 2012, pp. 44–48). The EA objects (business architecture, information system architecture etc.) and its contents are constructed and extended on the basis of The Open Group Architecture Framework (TOGAF). The EAM Capability Solution Matrix is the set of all capabilities and it is not enterprise specific. Therefore, it is the superset of any EAM Capability Catalog. Strategies are initial impulses for actions to be taken about certain topics. Business strategies can be derived from enterprise goals or business models, concretized via measure catalogue and implemented via projects – in our approach EAM projects. To identify the relevant capabilities that help to implement a strategy, an adapted version of the information demand analysis (IDA) method is executed (Lundqvist et al., 2011). The analysis supports the determination of the target state (to-be) maturity of the corresponding EAM capabilities. On this basis, the required capabilities are mapped into the EAM Capability Catalog. As an example, we think of a fictional enterprise that aims to implement a certain EAM strategy called "architecture inventory", which supports in the establishment of the practice to sustain a reliable documentation of the enterprise architecture by focusing on identifying the data stewards and data requirements. The benefits of such EAM strategy are reliable architecture information, standardized communication and reduced project effort for current landscape analysis as well as enhanced ad-hoc reporting. In order to identify the required capabilities to implement "Build up an architecture inventory", an IDA is carried out. According to the analysis, the capability "Impact Analysis IS Architecture" must be available in the enterprise in a certain maturity, which is assessed regarding its specific and generic criteria. This capability is an element of "Planning Lifecycle" management function and uses the objects from the "Information System Architecture" such as application and information flow in the EAM Capability Solution Matrix.

EAM Capability Constructor: A meta-model for a structured design of capabilities. If a capability is not an element of the enterprise´s repertoire yet, then it can be developed via the EAM capability

constructor.

Evaluation Matrix: The evaluation method for the EA Capabilities. The results of the matrix help to assign a maturity level to the capabilities. After the assessment of specific criteria as well as the generic criteria, a maturity level is assigned to the capability. The first iteration of the model development phase (2nd building block) has not been fully completed yet. We are working on the iterations to create capabilities and define their specific and generic criteria aligning them with the management functions and architecture objects.

2.3 3rd Building Block: Guidelines

In general it is possible to differentiate between prescriptive, descriptive and comparative maturity models. The descriptive maturity models are applied to assess the current state of an organization whereas a comparative maturity model is applied for benchmarking across different organizations (Bruin et al., 2005), (Röglinger et al., 2012), (Ahlemann et al., 2005). Prescriptive models do not only assess the as-is situation but also recommend guidelines, best practices and roadmaps in order to reach higher degrees of maturity. In this building block, the maturity model developer identifies the best-practices that help to improve the relevant capabilities.

3 THE EVALUATION PROBLEM

3.1 Why Do We Evaluate a DSR-Artifact?

The term artifact is used to describe something that is artificial or constructed by humans as opposed to something that occurs naturally. The artifacts are "built to address an unsolved problem" and those are evaluated according to their "utility provided in solving these problems" (Hevner et al., 2004, pp. 78–79). In order to demonstrate its suitability and prove evidence, a DSR artifact has to be evaluated through rigorous research methods after its construction (Wendler, 2012, p. 1320), (Venable et al., 2012, p. 424). Still, most of the maturity models are being developed based on the practices and lack a theoretical foundation (Garcia-Mireles et al., 2012, p. 280). This generates side-effects in model transparency since the model development is not being documented systematically (Mettler and Rohner, 2009, p. 1), (Becker et al., 2009a, p. 221), (Judgev and Thomas, 2002, p. 6), (Becker et al., 2009b, p. 4), (Solli-Sæther and Gottschalk, 2010, p. 280), (Niehaves et al., p. 510).

3.2 Evaluation Concepts in Maturity Model Research

According to the comprehensive study by Wendler, 39 percent of the maturity model development approaches are validated, 61 percent of the developed models are not validated at all and only 24 percent of these plan further validation. 85 percent of these models which are not validated apply conceptual research methods whereas only around 2 percent of them adopt design science research. Nearly 100 percent of all models developed applying design science research have validated their methods/models, 29 percent plans even further validation. Without excluding the underlying research paradigm, qualitative methods in form of case studies or conducting action research was applied mostly in the validation of maturity models (Wendler, 2012, pp. 1326–1327).

3.3 Research Approach

The Maturity Model Development Process (MMDP) and Enterprise Architecture Capability Navigator (EACN) are artifacts of the DSR paradigm that uses mostly action research and expert interviews as research methods. Moreover, both MMDP and EACN are conceptual and utilize literature research in this context. In line with (Venable and Iivari, 2009) we separate the DSR activities from its evaluation. For this reason, we have to focus on the evaluation methods and develop concepts for further application.

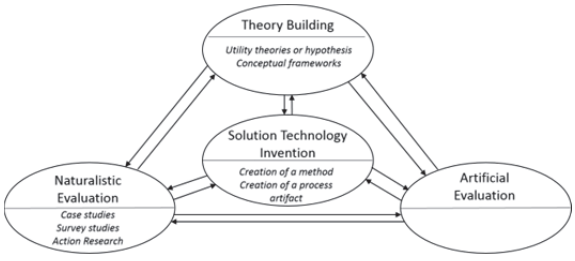

Figure 2: Framework for DSR based on (Venable, 2006, p. 185).

Applying the framework of (Venable, 2006, p. 185) illustrated in Figure 2, the utility hypothesis in the field of maturity model development and EAM is proposed (see also section 2.1.1, the first two phases) in form of conceptual frameworks and

challenges (Wißotzki and Koç, 2013), (Wißotzki et al., 2013). Building on these hypotheses, a method (MMDP) and a process artifact (EACN) is constructed which should be evaluated. Since these artifacts are process artifacts, they are classified as socio-technical, i.e. "ones with which humans must interact to provide their utility". Therefore, the performance of the solution artifact is to be examined in its real environment, for instance in an organization with real people and real systems (Venable et al., 2012, pp. 427–428). This evaluation type includes amongst others case studies, surveys and action research. Due to its characteristics, neither the method nor the process artifact is likely to be evaluated artificially via laboratory experiments, field experiments, mathematical proofs etc. Detailed information about the evaluation criteria is given in section 4.

4 4TH BUILDING BLOCK: AN EVALUATION CONCEPT FOR EACN

4.1 Concept Design

In section 2 we presented the initial outcomes of our first iteration of the construction of EACN applying the MMDP. Due to the reasons introduced in section 1.3, performing the fourth building block of MMDP is relevant and necessary since it focuses mainly on model evaluation and maintenance. The first step of the fourth building block is the design of an evaluation concept which development is still in progress. This section elaborates the outcomes of our current state of work concerning the evaluation concept design. The subject of evaluation is the design product (or artifact) and not the design process (MMDP) itself. Nevertheless we are aware of the necessity for further evaluation that focuses on the design process.

For the construction of the evaluation concept, a strategy building on contextual aspects has to be developed. These aspects include the different purposes of evaluation, the characteristics of the evaluand to be evaluated as well as the type of evaluand to be evaluated, which are then mapped to ex-ante vs. ex-post and naturalistic vs. artificial evaluation (Venable et al., 2012, p. 432). In this perspective we prioritized the relevant criteria and constructed a catalog, in which two choices are possible. The results should help us to classify our evaluation concept and find appropriate methods to carry out the evaluation.

We have different stakeholders that participate to the evaluation process of EACN. Since the stakeholders are operating in different sectors and have different business models, this diversity might lead to conflicts relating to enterprise terminology, methodologies or enterprise specific capabilities. Furthermore we could not identify any risks for the evaluation participants. The problem at hand is real (see the problem definition in section 2.1.1). The objective is to evaluate the effectiveness of the constructed socio-technical artifact in real working situations, therefore we need real users and sites for naturalistic evaluation. Since we have our cooperation partner financial issues might certainly constrain the evaluation and research project, which is why, the evaluation should be carried out rather fast and with lower risk of false positive. In contrast to that, there is not an intense time pressure for the evaluation. Both early and late evaluation are feasible for us, since we plan to demonstrate partial prototype and then to move from partial to full prototype evaluating each artifact. Each evaluation cycle should optimize the prototype. Not the early instantiations of EACN should be classified as safety critical, but the mature artifact (or full prototype) itself. As a result, the evaluation should be executed with naturalistic methods. In line with (Peffers et al., 2007) we divide the evaluation process to "demonstration" and "evaluation" activities. The evaluation process as a whole is both ex-ante and ex-post, since we plan to demonstrate (ex-ante) and then evaluate (ex-post) each artifact and optimize it for the next evaluation cycle. In accordance with Wendler "ongoing validation may take place while using the maturity model in real environments to test its applicability and search for improvements" (Roy Wendler, 2012, p. 1332). Since the purpose of the evaluation is to identify the weaknesses and improvement areas of a DSR artifact that is under development, the early processes are classified as formative or alpha evaluation (Venable et al., 2012, p. 426). Our objective is to move the more mature artifact that builds on early evaluation iterations to the late (beta) evaluation. This latter evaluation process is summative and is executed in a wider organizational context with more complex settings (Sein et al., 2011, p. 43). The more we move from demonstration to evaluation (from ex-ante towards ex-post), the larger are the enterprises and the models to be evaluated. Hence, the evaluation method might comprise of action research, focus group, surveys, case studies and expert interviews.

4.2 Research Method: Action Research

The evaluation is being conducted ex-ante moving in the direction of ex-post, since we have an artifact at hand, which has not yet reached its complete state. For this reason, we need to choose a research method that allows us to create evaluation iterations.

In this context Action Research (AR) seems to be an ideal research method that allows obtained knowledge to be applied in a cyclical process through the active involvement of the researcher (De Vries Erik J., 2007, p. 1494). It is an iterative process involving researchers and practitioners acting together on a particular cycle of activities (Avison et al., 1999, p. 94) and considered as an approach in Wirtschaftsinformatik (WI) with a methodological foundation. One of the major advantages with regards to our project is that the action research could help us to overcome the problem of persuading our project partner to adopt new techniques and bridge the "cultural" gaps that might exist between the academics and practitioners (Moody and Shanks, 2003). (Avison et al., 1999, p. 95) states "in action research, the researcher wants to try out a theory with practitioners in real situations, gain feedback from this experience, modify the theory as a result of this feedback, and try it again."

We design our evaluation concept in line with (Hatten et al.) and adapt the action research spiral form. The action research encourages researchers "to experiment through intervention and to reflect on the effects of their intervention and the implication of their theories" (Avison et al., 1999, p. 95). First, a plan is developed and implemented (act). Then the actions are observed to collect evidence and evaluate the outcomes. With regard to these outcomes, the researching group members collect the positive (what went right) and negative (what went wrong) outcomes in order to improve the idea in the next cycles ($M_2 \ldots M_n$) (Moody and Shanks, 2003). Each iteration of the action research process adds to the theory (Avison et al., 1999, p. 95).

4.3 Implementation of the AR Cycles

In this section we elaborate the evaluation concept for EACN and introduce the realization of the first AR cycle (ARC_1). The organization involved in this first AR cycle was the IT and Media Center (ITMC) of the University of Rostock. The ITMZ represents a central organizational unit of the university and provides services regarding e.g. information processing, provision of information/communication networks, application procurement or user support. For service quality assurance the ITMC has to plan, transform and monitor its EA in different projects. One of the projects the ITMC is currently conducting is the replacement of the existing Identify Management System by a new one.

$Plan_1$ - Using the EACN and ITMC for a First Method Evaluation: Based on 11 capabilities we predefine for the evaluation the EACN is used to evaluate the as-is maturity of the ITMCs' capabilities that belong to a specific architecture object (in this case application) and the whole architecture management lifecycle (planning, transforming, monitoring) required to realize afore mentioned project. The procedure is guided by the methodological assessment approach of SPICE a (Hörmann, 2006). A first ARC is produced that describes the 63 capability attributes, the assessment method and execution.

Act_1 - Separate Interviews with Responsible: The university internal assessment is going to be conducted by 1.5 hours separate interviews with the organizational unit owner and with corresponding application owner and project leads. The participants will be prepared for the assessment in terms of introduction to the EACN research project, assessment methodology and results that are going to be deduced.

$Observe_1$ - (In progress): After gathering the first outputs from the "Act" step, we will be observing the process of maturity evaluation as well as the structuring and performance of the assessment. Master thesis and the interview protocols should also support in collecting such evidence for thorough evaluation.

$Reflect_1$ - (In progress): In this phase we will be detecting inputs for EACN adaption and identify improvements for AR cycle execution when the evaluation in ITMC is completed. The objective is, as mentioned before, to improve the artifact after every evaluation cycle and then re-evaluate it until it reaches certain maturity.

5 CONCLUSION / OUTLOOK

In this work, we first motivated the concepts of Enterprise Architecture Capability Navigator (EACN), which serves as an instrument to assess and improve the capabilities of Enterprise Architecture Management, as well as Maturity Model Development Process (MMDP), which was used to develop EACN. Following that, the initial outputs of the EACN is detailed in in section 2.

Both MMDP and EACN are constructed

applying mainly the DSR paradigm. Their utility, quality and efficacy have to be demonstrated via rigorous research methods. For this purposes, section 3 presented the evaluation concepts in DSR and maturity model research. Moreover, our up-to-date research has been classified via the frameworks of (Venable, 2006, p. 185) and the guidelines of (Hevner et al., 2004, p. 83). To ensure the model accuracy for the problem at hand, we concluded on design of an evaluation concept.

Based on the criteria of (Venable et al., 2012, p. 432) and the framework of (Cleven et al., 2009, pp. 3–5), the research method for the evaluation process was chosen in section 4. To summarize, the evaluation approach is qualitative and it focuses on organizational levels since the evaluand is a model for capability development, identification and assessment. The reference point is the artifact itself against the real world and the object is the evaluation of the artifact from its deployment perspective. The evaluation should serve controlling and development functions, thus the evaluation time should expand from ex ante to ex post as the evaluation cycles grow. The most appropriate research method in this respective was action research, hence the AR spiral form was adapted (Hatten et al.). In this respective, we started our first evaluation cycle (ARC_1) with the ITMC of the University of Rostock. Therefore an appropriate project and corresponding participants were selected on which the evaluation has to be applied. The execution of the ARC_1 is an ongoing process and it will be finished with "observe" and "reflect" phase at the end of October 2013. Based on the ARC_1 results we will start with the next evaluation cycle (ARC_2) at the beginning of November. In context of a master class with scientific and industrial practitioners at the 6th IFIP WG 8.1 Working conference on the Practices of Enterprise Modeling (PoEM2013) in Riga, Latvia we plan to evaluate the capability identification process and selected parts of the capability solution matrix. The last ARC_3 in 2013 is going to be executed in cooperation with our project partner alfabet AG in Boston at the end of November. We are going to evaluate usability and feasibility of completed parts of the EACN. In 2014 we are going to apply the whole EACN in ACR4 with an industry partner that is yet to be defined.

As elaborated in this work and the subject of evaluation is actually the design product and not the design process itself. Therefore the development and implementation of an evaluation concept for the artifact Maturity Model Development Process (MMDP) remains as an attractive research topic. We invite all the scholars and practitioners who are interested in this research area for contribution.

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