Chapter 7

A Systemic View on Enterprise Architecture Management:
State-of-the-Art and Outline of a Building Block-Based Approach to Design Organization-Specific Enterprise Architecture Management Functions

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ABSTRACT

Multiple approaches for Enterprise Architecture (EA) management are discussed in literature, many of them differing regarding the understanding of the EA as well as of the performed management activities. Applying a cybernetic point of view, the differences between these approaches can be mitigated, a more embracing perspective can be established, and fields for future research that lack support in current EA management approaches can be identified. In this work, the authors apply the Viable System Model (VSM) as reference for elaborating an overarching conceptualization of the EA management function. In comparison to the VSM reference, they discover that system five of the VSM—the identity system—is underrepresented in prevalent EA management approaches. Using a building block-based approach that makes reuse of existing best practices for EA management, the authors outline a development method that addresses the challenge of identity of an EA management function by enabling an organization-specific design thereof. The development method can be used to govern the EA management function by providing means and techniques to configure and adapt, that is, to design and to re-design an EA management function tailored to the specific situation of an organization.

1. MOTIVATION

Enterprise Architecture (EA) management forms a research subject, which has been approached from various directions and groups of differing origin over more than two decades (cf. Langenberg and Wegman 2004; Mykhashchuk et al. 2011). These prescriptions differ regarding the pursued EA-relevant goals and taken foci. Against this background many researchers in this field doubt that a one-size-fits-it-all EA management process or function exists, but expect these processes to be company-specific (Buckl et al. 2010a). In general, enterprises form complex systems consisting of various elements with a large number of inter-dependencies. In special, each enterprise differs regarding the industry branch, internal culture, situation, or strategy. Aside all these difficulties enterprises have to adapt to changes in the environ-ment, e.g. changing markets or legal regulations, in order to survive. The VSM, developed by Beer (cf. Beer 1979, Beer 1981, Beer 1985) provides a framework to describe such complex systems that have to survive in a changing environment. According to Beer such systems consist of five interacting subsystems—*operation, coordination, control, planning, and identity*. The VSM has been beneficially applied in various contexts, e.g. project management (Britton and Parker 1993) or organizational modeling (cf. Espejo and Harnden 1989 and Brocklesby and Cummings 1996). The VSM can be used according to Brocklesby and Cummings (1996) as a tool to support an enter-prise during the implementation of large scale organizational change. Whereas, a definition and description for each of the systems of the VSM is given in e.g. Beer (1979) no such common understanding about the constituents of the EA management function exists.

In this work, we seek to understand the consti-tuting activities of EA management functions as the management subsystems of the Viable System Model (VSM). Building on this understanding, we review existing EA management approaches and

identify the coverage of the different management subsystems, which they provide. As a key result of the analysis, we identify that the approaches do only partially cover system five of the VSM. This system, called *identity system*, is responsible for keeping the management system serving the purpose that it is intended for. In order to promote the discussion on this weakness we outline a de-velopment method for organization-specific EAM functions. This method is based on an organized collection of best-practice building blocks as found in literature and practice.

2. A VSM PERSPECTIVE ON EAM

EA management itself is concerned with the management of the EA, i.e. the documentation, analysis, and transformation planning pertaining to the architecture of the enterprise. We apply the generic understanding of architecture, as pre-sented in Ernst (2008), to the entire enterprise on an abstract level in order to derive the following definition of EA:

The enterprise architecture is the fundamental organization of an enterprise, embodied in its components ranging from business to IT infra-structure, their relationships to each other, and to the environment. The enterprise architecture exists at any point in time and is planned as well as changed via projects in the boundaries given by principles. The change heads towards a target state, outlined by goals, which are measured via metrics.

Different enterprise-level management func-tions, e.g. project portfolio management, or de-mand management, transform the organization of an enterprise, more precisely relevant parts thereof. These transforming management functions can be identified with *system one—operation—*of the VSM. This system contains the primary activities of the system under consideration, which directly

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