Chapter XI
Managing Enterprise Architecture Change

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ABSTRACT

Enterprise architecture (EA) is the recognised place where the engineering practice of systems architecture meets real-world enterprise needs. The enterprise computer-based systems employed by organisations today can be extremely complex. These systems are essential for undertaking business and general operations in the modern environment, and yet the ability of organisations to control their evolution is questionable. The emerging practice of enterprise architecture seeks to control that complexity through the use of a holistic and top-down perspective. However, the methodologies and toolsets already in use are very much bottom-up by nature. An architecture-based approach is herein proposed; one that has at its base a complete and formal architectural description (or model). This allows enterprise architects, strategists, and designers to confidently model, predict, and control the emergent properties of their respective systems from an architectural point of view. The authors conclude that by using an approach founded upon an architectural model to analyse software and enterprise systems, architects can guide the design and evolution of architectures based on quantifiable non-functional requirements. Furthermore, hierarchical 3D visualisation provides a meaningful and intuitive means for conceiving and communicating complex architectures.

ENTERPRISE ARCHITECTURE: NOUN OR VERB?

Enterprise architecture (EA) is the recognised place where the engineering practice of systems architecture meets real-world enterprise needs. The notion of EA is certainly still evolving, but can be defined broadly as:

The system of applications, infrastructure, and information that support the business functions of an organisation, as well as the processes and standards that dictate and guide their evolution.

Specifically, EA is not just a representation of an organisation's technical architecture, but also abstract business processes and the human organisation itself (Bernus, Nemes, & Schmidt, 2003; James, 2004; TOGAF, 2003). These three distinct elements form a "triad" of EA—focussed around the customer and governed by EA processes. Logically, any one element affects the others, and they cannot be properly understood without considering the relationships between them.

The open group specification for architectural frameworks (TOGAF) asserts the following:

The primary need for developing an enterprise architecture is to support the business by providing the fundamental technology and process structure for an IT strategy. (TOGAF, 2003)

The key word to focus on in that passage is "strategy." In the context of EA, we might define "IT strategy" as:

The practice of foreseeing the architectures most capable of satisfying the evolving business capabilities, and identifying and implementing procedures to ensure they are realised.

It follows then, that a core practice of an enterprise architect is to create architectures aligned to fit a pre-determined vision. The question is how does an architect guide that evolution? Architects are not, presumably, expected to stumble blindly toward a distant architectural target. To the contrary, they are expected to make incremental steps and each step should be fully justified not just in

Figure 1. The triad of enterprise architecture