Chapter V
Measuring the Benefits of Enterprise Architecture: Knowledge Management Maturity

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ABSTRACT

Enterprise Architecture is the organising logic for business processes and Information Technology infrastructure, the purpose of which is to create a more effective organisation in the context of the business's strategy and goals. However, the ability to measure the effectiveness of any activities initiated under the guise of Enterprise Architecture is limited, even more so in those organisations, such as government agencies, that do not recognise financial return on investment. In this chapter the author introduces the concept of Knowledge Management, linked to the strategic outcomes of Enterprise Architecture and proposes a maturity model framework for the measurement of Enterprise Architecture implementation. The aim of this chapter is to provide a basis for discussion of a wider Capability Maturity Profile with architectural frameworks to help develop and measure the benefits of implementing frameworks and architectures.

INTRODUCTION

Enterprise Architecture is a business strategy tool; one that should be used in the operation of the enterprise as well as the initial design. In the commercial environment, where success is easily measured in financial terms, enterprises must "grow" and improve (remain competitive).

But Enterprise Architecture is not just a tool for use in a financially competitive world; it is a tool that can help improve the efficiency of organisations that do not measure success by the financial "bottom line". Government agencies represent just that environment and those who make the critical, strategic, decisions within the enterprise must understand the level of improvement; they must be able to measure such changes in their enterprise.

During this chapter I will provide some background by briefly discussing the concept of Enterprise Architecture and its link to decision-making. One aspect of decision-making is Knowledge Management, a concept that I will then explore and briefly discuss the measurement of such. This discussion is not intended to be an authoritative tome on Knowledge Management, the discipline is still too young for such a case to be presented; however, the introduction and linkage of the concept will allow for future research into the ideas presented.

A previous concept for evaluating Knowledge Management Projects exists, and I will use this to develop a Knowledge Management Maturity Model such that it can be used as part of an architectural view – enhancing the design and operation of the enterprise. Finally, I will discuss how a maturity model can be used in the context of an architecture.

These discussions are intended to show how the strategic audience (Chief Information Officers, Business Analysts, Managers, etc.) can use maturity models to determine if new approaches are achieving the desired aims. But, such discussions are not the sole purview of the strategic decision-makers. Academics and professionals can use maturity models for insights into processes and knowledge transfer. Technologists will be more interested in some of the maturity offshoots, but will still benefit from the strategic understanding of what their tools should support.

Ultimately, this chapter is intended to engender further discussion on the evolution of enterprise architecture as a business strategy tool and how the architecture extends beyond "design" to the "operation" of the enterprise.

EA FRAMEWORKS

What is Enterprise Architecture?

The seed for enterprise architecture can be traced as far back as 1987, when Zachman (1987) provided a framework for information systems architecture (ISA). The first shoots, however, didn't really appear until Sowa and Zachman's paper (1992) which extended the 1987 framework.

The extended Zachman framework is based on a matrix of entities which can be used to describe particular perspectives and relationships. The columns represent the "what", "how", "where", "who", "when" and "why", and the rows represent models such as "scope", "enterprise model", "system model", "technology model", "components", and "functioning systems". Even at that early stage, the ISA was not seen as "the enterprise" architecture, but as an "information systems" architecture.

The identification of such architectures with enterprise was not seen until Barnett et al (1994) used the term "Enterprise Architectures" in their paper on architecture for the virtual enterprise. In there, the authors described enterprise architecture as a "blueprint" or "picture" which assists in the design of an enterprise; a blueprint that considers three issues: what activities are performed, how activities are performed and how the enterprise should be constructed. However, the authors took a business modelling approach and did not appear to have the full range of perspectives that Zachman (with Sowa) had suggested.

Study into this new field continued and Bernus and Nemes (1996) identified the emergence of a number of enterprise reference frameworks, including the Purdue enterprise reference architecture, the GRAI integrated methodology, Com-