Chapter VIII
Design Integrity and Enterprise Architecture Governance

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ABSTRACT

This chapter describes a design integrity framework for developing models of any entity of interest at various levels of abstraction. The design integrity framework presented describes and defines contextual, conceptual, logical and physical model types. The framework also defines a set of alignment attributes for each model type and explains how these are to be used to demonstrate alignment from initial concept and requirements through to actual physical implementation. These concepts are then applied in an organisational context to identify the roles necessary to support an EA governance framework and strong alignment from idea to implementation.

INTRODUCTION

Operational agility is a hallmark of contemporary enterprise management in both the private and public sectors. Agility in the marketplace implies an ability to quickly and effectively undertake significant controlled change at all levels within an enterprise. Change is increasingly a characteristic of modern government agencies. The requirement for change and flexibility is driven by changing public expectations of government provided services, budget constraints and rationalisation of government resources. Furthermore, machinery of government changes and whole-of-government consolidation frequently require agencies to merge, split or re-align to better meet government objectives and service requirements. The impact on individual agencies may range from relatively

minor technology-based modifications through to wholesale changes where the enterprise is transitioned to become something entirely new.

The requirement for change inevitably means that consideration has to be given to design integrity. Whenever we are concerned with the alignment between an initial idea and the way in which it is implemented we are dealing with the issue of design integrity. In a change driven environment, design integrity assists us to understand whether the changes undertaken are required and whether they have been implemented as intended. Furthermore, such an approach reinforces modularity of design allowing incremental change or partitioning of change initiatives in a manner that is more likely to achieve the overall objective or outcomes. Clearly, design integrity is closely related to the concept of governance. Governance is the ability to control change within an enterprise. In this respect design integrity is a key enabler of governance. Within the day-to-day practice of enterprise architecture this relationship between governance and design integrity is arguably even closer. This is particularly true in environments which employ agile system development methodologies (Ambler 2002, Beck 1999). Such methodologies involve short iterative cycles of development and modelling, and are more likely to be successful where there is attention to maintaining design integrity. A common misconception is that such approaches to system development do not require high levels of rigor in modelling. This chapter will argue that in fact upfront effort in developing a set of well referenced models greatly assists rapid development methodologies.

This chapter describes a framework for design and modelling integrity. Although the framework is generic enough to be applied to the design of any entity of interest, throughout this chapter the framework will be applied in the context of government agencies. The framework provides a means for describing the measures for ensuring design integrity from an initial idea through to its actual physical implementation. In order for the enterprise architect to be confident that the transition from current to future states occurs as intended, within any system development methodology (eg. Agile, XP, Waterfall) he or she must be sure that the necessary governance roles and responsibilities within the enterprise have been identified and exercised. The second half of the chapter applies the framework in an organisational context, identifies governance roles and illustrates why and at what point they are required in the process of enterprise architecture.

DESIGN INTEGRITY

Design integrity needs to be understood at both the level of individual enterprise components as well as at the broader level of the enterprise transition from current to future state. Enterprise architectural design integrity addresses the following questions:

- Does the design of an entity satisfy a set of initial requirements?

This question relates to whether the design is the right one given the context, constraints and requirements of the entity in question. It is possible to design a solution that delivers a desired outcome but does not do so in a way that is consistent with the restrictions in which the component must be operated. For example, an application that provides the desired output but does so in a way that does not comply with legislative requirements. Therefore, design integrity must assess the alignment between the requirements of the broader context and the characteristics of a given design.

- Does a given design contain all the relevant elements of an entity?

This question highlights the need to ensure that a design is complete. The design must adequately represent all the specified aspects of

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