

# Chapter 77

## Enterprise Architecture's Identity Crisis: New Approaches to Complexity for a Maturing Discipline

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### **ABSTRACT**

*This chapter outlines the rational foundations of the enterprise architecture discipline to date and describes ways and situations in which the traditional approaches of enterprise architecture fail to account for a number of contemporary market and economic situations and organizational behaviors. It characterizes new methods and approaches loosely based on systems thinking, with examples from the Australian e-government experience, and argues that the discipline must re-invent itself to incorporate a post-rational perspective to stay relevant. The chapter concludes with narratives of how the new enterprise architecture must engage with business to stay relevant over the next decade and beyond.*

### **ENTERPRISE ARCHITECTURE AS A MATURING DISCIPLINE**

Enterprise architecture has an identity crisis. Borne of an era of escalating software development and maintenance expenditure of U.S. military and government agencies, enterprise architecture has grown over three decades to encompass a discipline of methods, tools and practices to manage information system complexity. The success of some of enterprise architecture's methods can be attributed to rational and objective analysis, classification and abstraction of selected features of

complex and large-scale problems and systems. But over the last decade, paradigmatic market and business shifts such as the emergence of the information and knowledge economies bought on by the Internet, personal and pervasive computing, and the digitisation of just about everything has put pressure on enterprise architecture's foundations. It is no longer enough to apply structural tools and problem decomposition to every kind of business problem, as may have been done successfully in the past – the complexity of today's business challenges is not always amenable to a 'divide-and conquer' approach.

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As a consequence of this and other factors, enterprise architects need to look beyond its traditional foundations in a search for a new and more relevant identity. Like a teenager realising that the black and white world of childhood is in fact rendered in a thousand shades of grey, enterprise architecture must re-establish its identity before it can reach a new level of maturity for its next three decades. The discipline must re-evaluate its purpose, relationships, obligations and responsibilities to the organisations it serves. It must infuse new approaches and methods from outside its traditional domain of engineering to tackle the sorts of dynamic and ill-defined problems and systems rational analysis cannot solve.

To do this, enterprise architecture must embrace design as much as analysis, synthesis as much as simplification, with methods and tools drawn from systems thinking (Senge 1992), design and 'design thinking' (Brown 2008), perspective and problem negotiation, and facilitation. Enterprise architects must move closer to the business, and engage in the design of new businesses by brokering technology, vendor and product capabilities and services to meet rapidly changing business objectives. The new enterprise architecture will sit amidst the complexity and contradiction of the increasingly dynamic architecture of the organisation, serving the business' needs and being prepared to change, reconfigure or jettison established technologies and platforms without being bound by the chains of legacy or sunk cost. Not that the old methods will be abandoned – on the contrary, they continue to provide the foundation of the discipline and the main levers to understand and manage complexity. But the new enterprise architecture will be integrative – able to hold rational *and* post-rational perspectives on problems and systems in creative tension (Martin 2007), drawing on both to design technology interventions that will be effective for today's dynamic, hyper-connected and loosely-coupled enterprises.

This chapter outlines the rational foundations of the enterprise architecture discipline and describes

ways and situations in which the traditional approaches of enterprise architecture fail to account for a number of contemporary market and economic situations and organisational behaviours. It characterises new methods and approaches loosely based on design and systems thinking, with examples from e-government experience, and argues that the discipline must re-invent itself to incorporate a post-rational perspective to stay relevant. The chapter concludes with narratives of how the new enterprise architecture must engage with business to stay relevant over the next decade and beyond.

## **FORMATIVE YEARS**

Enterprise architecture's formative years are well documented. The term 'enterprise architecture' was apparently coined by Steven H. Spewak, the Chief Architect at global logistics company DHL Systems (Spewak 1992). Spewak drew on the Zachman (1987) framework to propose an Enterprise Architecture Planning methodology (Spewak 1992). (Zachman originally referred to his framework as 'a framework for information system architecture'). Enterprise architecture gained legitimacy with the 1996 Clinger-Cohen Act which required US federal departments and agencies to establish and maintain enterprise architecture programs. Shortly after, a Chief Information Officer's Council was formed, which in 1998 established the Federal Enterprise Architecture Framework as a uniform planning and design structure. Under the Office of Management and Budget, compliance with agency Information Technology Architectures (based in turn on the Federal Enterprise Architecture Framework) became mandatory for all significant IT investments. In 2002, the Office of Management and Budget initiated the development of a Federal Enterprise Architecture with the objective of technology standardisation, unified planning, identification of opportunities to simplify business

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