

Chapter VI

Enterprise and Technology Architectures

INTRODUCTION

The role of integrated enterprise architecture in IT strategy and strategic alignment is explained in Chapter V. This chapter describes in detail the principles and methods for developing a business-aligned enterprise architecture that will define the roadmap to attain the future state of the enterprise envisioned by the business strategy and guide the IT investment portfolio necessary for the state change.

Enterprise architecture can be understood from the terms enterprise, architecture, and architecture framework defined by the Open Group Architecture Framework (TOGAF, 2007):

Enterprise is defined as any collection of organizations that has a common set of goals and/or a single bottom line.

Architecture is defined as a formal description of an information system, organized in a way that supports reasoning about the structural properties of the system. It defines the components or building blocks that make up the overall information system and provides a plan from which products can be procured, and systems developed, that will work together to implement the overall system.

Architecture framework is a tool for assisting in the production of organization-specific architectures. An architecture framework consists of a Technical Reference Model, a method for architecture development, and a list of component standards, specifications, products, and

their interrelationships, which can be used to build up architectures. Architecture framework will speed up and simplify architecture development.

Enterprise architecture is a formal description of the enterprise business context, including the business strategy and the supporting information system architecture which aligns with the business context. Enterprise architecture therefore defines a model of the fundamental technology and process structure of a business-aligned IT strategy. Enterprise architecture allows business to devise solutions to achieve cost efficiency and business innovation. It provides the strategic context for the evolution of the information system in response to changing market and business needs (TOGAF, 2007).

A generic architecture framework is needed to help firms define the firm-specific enterprise architecture. An architecture framework is critical to the definition of business and IT strategies. This is because it provides structure and discipline and provides a vehicle for communication of the strategic imperatives in an integrative and holistic manner, functionally analogous to the working of a real-life enterprise. It serves as a *translator and integrator* of critical business and IT concepts by which business and IT executives will be able to articulate the congruence of business and IT strategies¹ and how, at a high level, IT will implement that strategy. This is one of the first tasks of strategic alignment. In particular, as a communication tool, the architecture framework enables the enterprise business and IT executives to exchange their understanding of the respective strategies in a high level graphically and multidimensionally integrative way, combining business and technology concepts fundamental to defining the unique way in which the enterprise seeks to operate in the crowded marketplace. It will remove any potential misunderstanding that could occur if each executive were to simply use the one-dimensional English language descriptions of business and IT strategies. This business-IT dialog using the architecture framework will lead to an agreement on the value and benefits of the enterprise architecture (EA) because the EA is a manifestation of the business/IT strategies (eTOM, 2005; James, Handler, Lapkin, & Gall, 2005; OMG, 2003; POSIX, 2000; RM-ODP, 1997; Ross et al., 2006; Spewak, 1992; TOGAF, 2007; Zachman, 1987).

The task of specifying enterprise architecture can often be complex and confusing. This is because it must take into account a wide range of perspectives from the business consideration for customers, suppliers, partners, organizational, regulatory, and geographical requirements, on one hand, to the IT consideration for the multiplicity of rapidly evolving technology options available for the architecture solution, on the other hand. The architecture framework, which defines the representations of important business and IT terms into basic architecture concepts, is helpful in ensuring that the stakeholders have a common definition of the purpose, scope, content, and *shape* of the architecture in line with the business/IT strategies (James et al., 2005; Spewak, 1992; TOGAF, 2007). By using a common architecture framework tool, the business and IT executives together can position the business scope and technology solution options conceptually relative to one another. The framework also allows architecture complexity to be decomposed and simplified into manageable and easy-to-understand domains and perspectives (James et al., 2005; Spewak, 1992; TOGAF, 2007). Also, by using a common conceptual tool, business and IT will improve the communication competency, a key success factor of strategic alignment (Luftman, 2004). It also enforces professional discipline (in business and IT) in architecture specification and implementation as they must be done in a systematic methodical way in accordance with technically consistent sets of architecture principles and guidance.

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