ABSTRACT

Enterprise Architecture is an active, strategic database which defines a business, what is necessary to operate a business, including the technologies that are needed to support its operations, and the transition processes necessary for implementing new technologies in response to changes in the needs of the business (Hite, 2002). The strategic importance of Enterprise Architecture (EA) is recognised by a growing number of global enterprises all over the world (Durst & Daum, 2007; Ross, Weill, & Robertson, 2006) and investment in Enterprise Architecture programmes raises the expectations of them being beneficial. Through case study methodology, using questionnaire and/or interviews, data from five Portuguese enterprises were collected and analysed, determining the top management vision about the different stages of the development EA programme, determining the level of maturity with regard to the implementation of EA in these enterprises. The authors found that, despite the limitations of this study, the top management of the 5 enterprises consulted see EA as a business asset since it contains all the information necessary to make decisions in the business, and allows the ITs to be aligned with the business’s strategy; that management structure is important for its development, that most of the enterprises consulted do not use assessment models for investment decisions in EA, and that the AE Balanced Scorecard is considered a suitable model for business management and EA, although most do not use it.

Keywords: Business Management, Enterprise Architecture Frameworks, Enterprise Architecture Program, Enterprise Architecture Value, Portuguese Enterprises
1. INTRODUCTION

1.1. Definition of Enterprise Architecture

The US government defines Enterprise Architecture (EA) as “an active, strategic data base which defines a business, what is necessary to operate a business, including the technologies that are needed to support its operations, and the transition processes necessary for implementing new technologies in response to changes in the needs of the business” (Hite, 2002).

Several recent proposals have been put forward for tools that can help to apply the descriptive practices of EA(s). Among these tools are frameworks, methods and modelling languages. These tools have characteristics which differentiate one from the other.

Zachman (1987) define an Enterprise Architecture framework as: “a taxonomy for organising architectural artefacts, such as: documents, specifications and project models, which take into account who the artefact is for (for example, a business owner or builder) and what the specific problem is (for example, data and functionality)”. With regard to the current frameworks of EA, (Zachman, 1987; Sowa & Zachman, 1992; CIO, 1999; CIO, 2001; The Open Group, 2006; Schekkerman, 2006; OMB, 2009) describe a consistent vision and approach, as well as sharing a common concern about the various components of a business that must be considered and analysed. An EA framework supports a way of globally integrating Business, Information, IT Systems, Technology and Technological Infrastructures, aligning the support to the business strategy, principles, goals and objectives, and bearing in mind points of view on governance, security and privacy.

A complete set of EA models, objects and artefacts would include the following components:

- **Business Architecture**: This describes the present, and the target, business environments, focusing on the business’s activities and operations;
- **Information Architecture**: This details the present, and the target, business environments, focusing on the business process, the information flows and the business’s interactions;
- **Information System Architecture**: This defines the types of application systems that are relevant to the business, and also describes the applications as logical groups of resources that make up the management of information and support for the business processes defined in the Business and Information Architecture’s;
- **Technological Architecture**: This describes the logical software and hardware capabilities that are required to support the deployment of business, data, and application services. This includes IT infrastructure, middleware, networks, communications, processing, standards, etc.

Figure 1 shows brief details of the evolution of EA frameworks.

1.2. Enterprise Architecture Programmes

The development of EA is fundamental because it provide the rules and necessary definition for the integration of information and services at the operational level by considering the limits of the organisation. In addition to the EA process, the models, definitions, principles and other artefacts which make it up, are important for assessing the EA Programme (OMB, 2009; Schekkerman, 2008a) and other aspects related to its use within an organisation.

Maturity models provide a path towards EA and how to improve processes in an organisation. These models promote the maturity of EA by increasing predictability, process controls and efficiency. Most EA maturity models identify five stages in the approach to identify the level of maturity in a given organisation (Szyszka,
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