

# Architectural Framework for the Implementation of Information Technology Governance in Organisations

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## INTRODUCTION

For many organisations, it is not just about information technology (IT), but about governance of systems and technologies, which is inseparable from people and processes. In a similar manner, as business management is governed by generally accepted principled practices, IT must be governed by practices that facilitate and make sure an organisation's IT resources are used responsibly and that its risks are managed appropriately. According to Van Grembergen and De Haes (2007), the widespread application of technology has generated a critical reliance on IT, necessitating a special focus on IT governance. The past decade has seen the term 'governance' moved to the forefront of business thinking in response to instances indicating the importance of good governance of IT. Governance is not an approach by itself, it is guided by architecture.

Enterprise architecture (EA) consists of four main domains, business, information, technical and application (Iyamu, 2014). Technical architecture means IT architecture in the context of this paper. This paper focuses on the technical architecture in the context IT governance. Technical architecture involves the design of systems or sets of systems. Iyamu (2011) defined technical architecture as a logically constant array of prin-

ciples, standards and models that are originating from business requirements. It guides the engineering of an organisation's information systems and technology infrastructure across. According to The Open Group Architecture Forum's (TOGAF) document of 2009, IT architecture provides some governance aspects, such as change management and quality assurance. In other words, it is the grouping of systems, represented in components, their relationships to each other and the environment, and the principles governing design and development.

IT architecture is driven by the need to bridge the gap between IT and business people and process towards a common goal of the organisation. Klein and Gagliardi (2010) describe IT architecture as "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 and standards". Along the same vein, in 2009, TOGAF described IT architecture as the hardware, software and network infrastructure needed to support the deployment of core, mission critical applications of an organisation. These activities require management and governance in achieving the objectives as well as a return on investment (ROI) for the organisational purposes.

## BACKGROUND: IT GOVERNANCE AND ARCHITECTURE

Some organisations view both IT governance and architecture from two different perspectives, in implementation and operationalisation. The main and most commonly adopted IT governance frameworks include COBIT, ITIL, ISO/IEC 17799/27002 and TOGAF (Simonsson & Johnson, 2006; Niemann, Eckert, Repp & Steinmetz, 2008). Enterprise architecture (EA) is the focal point, though some organisations do sometimes focus on one or two domains of EA.

Mårten, Lagerström and Johnson (2008) asserted that the aim of IT governance is to support IT's function as a business enabler in order to realise the internal effectiveness in an organisation. IT governance enables and improves IT and business strategies gain alignment, including management of risks. Brown (2006) argued that IT governance governs the crafting and execution of the IT strategy, and also help to aligns both IT and business strategies.

The IT Governance Institute (2007) defined IT governance as the “responsibility of executives and the board of directors, and consists of the leadership, organisational structures and processes that ensure that the organisation's IT sustains and extends its strategies and objectives”. Concurring, Ross, Weill and Robertson (2006) refer to IT governance as “the decision rights and accountability framework for encouraging desirable behaviour in the use of IT”. IT governance focuses on managing and employing IT to realise corporate performance objectives whilst reflecting the wider corporate governance principles.

Enterprise architecture (EA) is intended to govern and manage both technical and nontechnical activities of an organisation. According to Anaya and Ortiz (2005), “an Enterprise Architecture provides a common view of the primary resources of any enterprise (people, processes and technology) and how they integrate to provide the primary drivers of the enterprise (that is, the strategy)”. Enterprise Architecture can be used to guide

against business-IT misalignments. This includes coordination of technology investments, to suite business needs, improve the integration between services, and eliminate redundant investments while replacing them with standardised and cost effective IT services. Becker, Antunes, Barateiro, Vieira and Borbinha (2011) stated the purpose of EA is to provide a comprehensive coverage of the organisation.

Weill and Woodman (2002) asserted that IT architecture offers an interrelated set of technical choices to direct the organisation in sustaining business needs. According to Hafner and Winter (2008), IT architecture is the sphere of architecture which signifies a combined, enterprise wide model of hardware and communications elements in addition provides support among the technology artefacts. While Iyamu (2011) maintained that it guides the initiation of new technology. IT architecture as defined by Weill and Woodman (2002) is a set of procedures and guidelines that govern the use of IT and design a migration path to the way business will be done. IT architecture consists of standards and guidelines for technology, utilisation of data, design of applications and change management processes necessary to use new technologies.

## RESEARCH APPROACH

The qualitative, case study and interpretive methods and approach were followed in conducting this research, which was to develop an architectural framework for the implementation of IT governance in the organisations. Qualitative research methods assist researchers to understand people and the social and cultural contexts within which they live. Concurring, Denzin and Lincoln (2011) asserted that qualitative research is often based upon interpretivism, constructivism and inductivism. It is about exploring the subjective meanings through which people interpret the world and the diverse ways in which life is constructed in particular settings. Social events and phenomena

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