



Business Architecture Implementation

Differences between TOGAF's view of Business
Architecture and its Practical Implementation

Master's Thesis

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Abstract

The Enterprise Architecture (EA) discipline was initiated roughly two decades ago. During the same timeframe, Information Technology (IT) spending has generally increased year after year. As a result, organisations have started to consider implementing EA projects to better manage their IT spending. When implementing EA projects, Enterprise Architects may choose to use EA frameworks as a guide to help them manage the complexity within enterprises. These frameworks are generally strong in the descriptive sense, but weak in the actionable one. EA essentially entails the collaboration between the business and IT elements, which are intertwined in any given EA project implementation. Despite the extensive details pertaining to EA frameworks, and the use of these frameworks in aiding EA project implementations, Enterprise Architects may find themselves having to deviate from a framework's prescribed guidelines when implementing an EA project. As such, this thesis conducts an in depth comparison between the Business Architecture (BA) element's theoretically prescribed implementation steps, and its practical implementation guidelines that are commonly applied by Enterprise Architects. The Open Group's Architecture Framework (TOGAF) was selected within this study, enabling the comparison to be performed. Interviews with Enterprise Architects across Sweden and Denmark were carried out in order to determine the steps that they put into practice during the actual implementation of the BA phase within an EA project. The empirical findings obtained as a result of these interviews illustrate that a number of differences exist between TOGAF's prescribed steps for implementing the BA phase and the steps practically implemented by the experienced Enterprise Architects. In overall terms, TOGAF was found to provide fairly comprehensive guidelines regarding BA's implementation. However, certain steps could be further enhanced by making a number of small, but significantly important modifications to them, ensuring that their practical implementation is achievable to a higher degree. Consequently, this study aims to provide Architects with more comprehensive guidelines that will aid them when implementing the BA phase within EA projects. Additionally, by raising awareness of the existing differences, this study should enable Architects to take actionable steps in order to bridge this existing gap when implementing EA projects.

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1 Introduction

This chapter provides a high level overview of the conducted study, providing a general background to the Enterprise Architecture domain. The study's overriding structure is also provided, before its root problem is identified. Next, the chapter moves on to clarifying the study's core purpose, which is followed by a specific research question that forms the focus of this study. Finally, the chapter concludes with the study's limitations that were noted in order to ensure that the study was highly focussed in its nature.

1.1 Background

Worldwide Information Technology (IT) spending has been gradually increasing recently, with the latest studies forecasting that the figure will slightly increase again in 2012 (Gartner Newsroom, 2012). As a result of this increase, organisations may turn to Enterprise Architecture (EA) in order to better manage their IT spending, seeing as one of EA's major benefits is its ability to help enterprises to reduce their IT costs, whilst also providing them with greater value (Ross, 2006). Having said this, two thirds of EA projects were classed as failures back in 2009 (ARIS, 2009). While it may be true that the majority of EA frameworks and processes have the ability to produce decent descriptive architecture models, it is also fair to say that they don't really create actionable or extended architectures (Schekkerman, 2003).

Enterprise Architecture (EA) is a relatively new concept that was established approximately 20 years ago (Sessions, 2007). Within this study, EA is defined in terms of its constituent elements, 'enterprises' and 'architectures'. There are a number of varying definitions that exist for both of these elements, along with the EA concept itself. Zachman's definition of architecture is utilised within this study as it provides a detailed, yet concise enough description of the term. Once the definition of EA's constituent elements is established, it is then possible to cover the overall concept itself. This concept essentially describes the business and IT domains before also describing the link that exists between them (Hanschke, 2009).

Enterprise Architecture has numerous frameworks associated with it (Minoli, 2008). These frameworks have been established in order to manage the complexity that is present within today's enterprises by providing a methodology that enables the design and description of architectures to take place (Ota & Gerz, 2011). EA frameworks aim to map all of the essential software development processes, along with their links required to fulfil the

business mission in a simplified manner for the enterprise architects (Urbaczewski & Mrdalj, 2006). Frameworks are selected for use within this study in order to pinpoint the existing differences between a framework's prescribed implementation guidelines and those actually implemented by Enterprise Architects.

More specifically, The Open Group's Architecture Framework (TOGAF) is selected for use within this study, due to the fact that it is considered as one of the most commonly utilised standard frameworks (ARIS, 2009). Additionally, TOGAF provides a narrative of its implementation phases in terms of steps detailed as a part of its Architecture Development Model (ADM) (Wout et al., 2010). This is in contrast to other EA frameworks such as the Zachman framework, which doesn't provide a step-by-step process during the creation of a new architecture (Urbaczewski & Mrdalj, 2006). For the purpose of this study, TOGAF's latest version, 9.1 is utilised.

One of TOGAF's ADM phases is then selected, namely, Business Architecture (BA). Essentially, BA represents the fundamental organisation of the corporation from a business strategy viewpoint (Winter & Fischer, 2007). BA's prominence within EA projects is evident, given the fact that Enterprise Architecture should be applied in a top-down approach using business driven-methods (Finkelstein, 2006). EA requires business specialist experts, including IT, to work together in the same project team in a design partnership (Finkelstein, 2006). Business Architecture is also seen as the starting point from which subsequent functional, information, process and application architectures may be developed (Versteeg & Bouwman, 2006). Finally, after choosing to focus upon the Business Architecture element, TOGAF's prescribed steps for the implementation of this phase are compared with the phase's practical implementation guidelines.

1.2 Problem Area

Worldwide IT spending has been forecast to grow by a further 3.7 percent in 2012, taking it up to a total of 3.8 trillion dollars (Gartner Newsroom, 2012). As this figure increases, the organisations that are making this IT investment will undoubtedly want to maximise their Return on Investments (ROI). Having said this, it is debatable as to how much of this investment is fruitful. Gartner conducted a study on IT spending in 2006, which found that 8 out of every 10 dollars spent on IT was ‘dead money’, with too much of the IT spending not directly contributing to business growth (Gartner Newsroom, 2006). Another study conducted by PriceWaterhouseCoopers found that Information Technology’s contribution to productivity growth has been steadily declining (PricewaterhouseCoopers, 2008).

Organisations may turn to Enterprise Architecture with the hope of driving down their IT costs. One of EA’s major benefits is that it can help enterprises reduce their IT costs, whilst also providing them with greater value (Ross, 2006). In this regard, Conrad Thompson, an EA expert at the PA Consulting group states that “If implemented effectively, EA has the potential to lower IT costs, provide more confident delivery of IT projects and increase the speed at which an organisation can deliver change” (Thompson, 2012). Enterprise Architecture, then, is a tool for leveraging technology to make things happen faster and at less cost (Orr, et al., 2005).

Whilst EA may be seen as a silver bullet in terms of resolving the issue of driving the total cost of IT within enterprises down, it is important to note that a survey conducted by Jonathan Broer for Rotterdam University in 2008 found that the expected results are not achieved in 66% of the EA projects implemented (ARIS, 2009). This shows that even when organisations embark on EA projects with the hope of ensuring that they receive maximised ROI on IT expenditure, this hope is not fulfilled in the majority of cases.

The tools that are required in order to create and then subsequently employ Enterprise Architectures are still in their infancy (Jonkers et al., 2006). The most prominent tools are conceivably the various existent frameworks, which typically offer high level guidance regarding the business and technological elements that need to be addressed within any given EA project (Jonkers, et al., 2006). Despite the fact that most EA frameworks are able to generate good, descriptive architecture models, they do not create actionable, extended Enterprise Architectures that address today’s rapidly evolving complex collaborative environments (Schekkerman, 2003). The frameworks may be said to provide negligible aid with regards to creating the necessary architectural artefacts (Jonkers, et al., 2006).

This study addresses the problem that is represented by EA frameworks seemingly neglecting the practical implementation guidelines for the implementation of EA projects. As previously mentioned, these frameworks do not typically provide guidance on how to construct or implement a specific architecture (Minoli, 2008). As such, enterprise architects that are tasked with implementing EA projects simply are not able to rely upon the established EA frameworks for practical guidance.

1.3 Research Purpose

This study addresses the problem of a lack of guidance provided by EA frameworks with regards to the practical implementation of EA projects. This is achieved by comparing the Business Architecture element's steps detailed by TOGAF to its practical implementation guidelines put into practice by Enterprise Architects, in order to pinpoint the existing differences. In turn, this will provide more guidance to Enterprise Architects with regards to what implementing the Business Architecture phase within EA actually entails.

As such, the study focuses upon answering the following research question:

What are the differences between the Business Architecture element's steps within TOGAF and its practical implementation?

1.4 Limitations

This study does not cover an in-depth investigation about the technical aspects related to EA. These aspects are at a lower level of abstraction and are not deterministic factors when it comes to the focus of the study's research question, which relates to the practical implementation of the Business Architecture phase within EA. Another limitation is that the study does not encompass an analysis of the other phases within TOGAF's Architecture Development Method (ADM). Addressing all of the ADM's phases would mean that the study's scope would be too large for a single thesis dissertation.

Additionally, the thesis does not look into the architecture repository element, the inputs for the Business Architecture phase, or the outputs for this phase as detailed within TOGAF. These elements have been excluded from the study, as it is not necessary to analyse them in order to conduct the required comparison. Finally, the study focuses on TOGAF version 9.1 (TOGAF's latest version), which was released at the back end of 2011 (Josey, et al., 2011).

2 Enterprise Architecture Review

This chapter details the thesis' theoretical aspects, as shown in Figure 2:1 below. It commences by introducing Enterprise Architecture as a concept by taking a look at its background, before defining this concept in terms of its components, namely: 'Architecture' and 'Enterprise'. The next segment provides an introduction to the concept of Enterprise Architecture frameworks, detailing their nature and how they interact in order to fulfil the Enterprise Architect's mission. A history of the various Enterprise Architecture frameworks is also provided, along with the details of how these frameworks have evolved over time. A justification of why frameworks were utilised within this thesis is then provided, before the framework theory segment is concluded.

Next, focus is placed upon The Open Group's Architecture Framework (TOGAF), which was the chosen EA framework for this particular thesis. A history of TOGAF's development is provided, in addition to the justification of why this particular framework is utilised within this thesis. TOGAF's concept is then detailed further, with one of its key processes for developing EA, the Architecture Development Method (ADM) expanded upon. Within the ADM, the Business Architecture phase was chosen as the focal point of this thesis. Business Architecture as a concept is defined, with an insight into the subject matter also provided, before all of this is linked back to EA and the problem area that this thesis tackles. The reasons behind selecting Business Architecture are then detailed, before its steps, as detailed by TOGAF, are summarised, allowing these steps to be subsequently compared to the practical implementation guidelines that were obtained as a result of the interviews conducted with experienced Enterprise Architects.

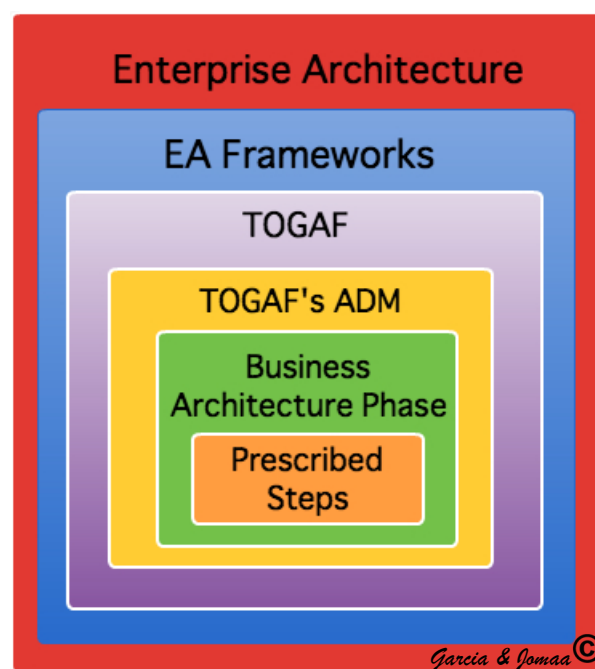


Figure 2:1 Review Overview

2.1 The concept of Enterprise Architecture

This sub-section commences by providing a background of the Enterprise Architecture concept, with the inclusion of details pertaining to its evolution. Next, the section clearly defines Enterprise Architecture's constituent elements, before concluding with an overall description of the concept itself.

2.1.1 Enterprise Architecture Background

John Zachman is considered as one of Enterprise Architecture's main pioneers, having introduced the concept in the 1980's (Finkelstein, 2006). In 1972, Zachman moved to the Los Angeles area, where he was undertaking Information Strategy work with airframe manufacturing companies (Zachman, 1996). Zachman saw similarities between the construction process of buildings, airplanes and Information Systems that were all used by an enterprise (Finkelstein, 2006). He noticed that all of these industries manage the design, construction and maintenance of complex products by considering the various needs of different people within them (Finkelstein, 2006). For instance, when looking at airplane manufacture, the owner typically uses a model of the business to determine the enterprise needs for Information Systems (Finkelstein, 2006). The designer needs a different set of diagrams, which may include an Information Systems model. The builder relies on yet another different type of diagrams, such as technology models for Information System development (Finkelstein, 2006). As time progressed, Zachman and his fellow professionals acquired more information regarding airplane manufacturing, which led them to the conviction that Information Systems was a different instance of the same generic product development and manufacturing process (Zachman, 1996).

Zachman's publication, entitled 'A framework for Information Systems Architecture', which was published in the IBM systems journal, addressed the challenge and vision of Enterprise Architecture (Zachman, 1987). According to Zachman, the challenge was to manage the complexity of increasingly distributed systems. Zachman said: "The cost involved and the success of the business depending increasingly on its Information Systems require a disciplined approach to the management of those systems" (Zachman, 1987, p. 276). Zachman's vision encompassed both, the business value and agility elements (Sessions, 2007). He stated that the best way to realise both of these elements was through a holistic, multi-perspective approach to system architecture, which explicitly views every important issue from every important perspective (Sessions, 2007).

2.1.2 Architecture

Zachman defines architecture as the “set of design artefacts, or descriptive representations, that are relevant for describing an object such that it can be produced to requirements (quality) as well as maintained over the period of its useful life (change)” (Zachman, 1996, p. 5). Architecture is often required in order to manage the complexity of any large organisation or system (Lankhorst et al., 2005).

The concept of architecture may be portrayed in a simple manner by visualising it from a building and construction perspective. Within this perspective, the architect is the person responsible for the design of a building’s various elements from its rooms to its roof (Lankhorst et al., 2005). In this regard, the IEEE standard 1471/2000 defines architecture as: “the fundamental organisation of a system embodied in its components, their relationship to each other, and to the environment, and the principles guiding its design and evolution” (Lankhorst et al., 2005, p.2). From this definition, it is visible that the term encompasses both, the blueprints for a building, along with its more general principles such as style (Lankhorst et al., 2005).

Another important concept within this domain that relates to an architect and their associated tasks is that of a stakeholder. The IEEE defines a stakeholder as: “An individual, team, or organisation (or class thereof) with interests in or concerns relative to, a system” (Lankhorst et al., 2005, p. 2). The stakeholder relation to architects arises as a result of the fact that architects will be required to identify and discuss the views and concerns that stakeholders have regarding any given system that is to be implemented (Lankhorst et al., 2005). Stakeholders are able to use Enterprise Architecture as a ‘tool’ to manage system engineering and changes (Chen, Doumeingts and Vernadat, 2008).

2.1.3 Enterprise Architecture

The Enterprise Architecture concept is comprised of two main elements, namely ‘enterprises’ and their ‘architectures’. Building upon Zachman’s definition of an architecture, which is detailed above (in section [2.1.2](#)), the architectural element from an enterprise’s perspective is slightly adapted, placing more emphasis on the enterprise itself (Zachman, 1996). EA’s second element, ‘enterprise’, is concisely defined by ISO 15704 as: “one or more organisations sharing a definite mission, goals and objectives to offer an output such as a product or a service” (Chen, et al., 2008, p. 647).

As such, these two elements, ‘enterprises’ and ‘architectures’ are both combined in order to construct the Enterprise Architecture concept, which describes the structures in business and IT, along with the links that exist between them. The business side of the company is fashioned by its business model, which encompasses the products, business processes and the organisation. When Enterprise Architecture projects are successfully developed, they have the ability to enable quick and effective responses to the dynamic market and technology environments. Enterprise Architectures enable the arrangement of the connections that exists between business and IT structures within an enterprise; once these connections are clearly

shown, it becomes possible to know which contribution was made by which application. (Hanschke, 2009)

It is vital to appreciate that architecture, as a concept, closely relates to the engineering discipline. The use of architecture enables the management of complexity and risks, which arise due to a number of factors, including: technology, context and stakeholders. When designing large-scale systems such as an enterprise, the requirement is that the study is conducted from a high level of abstraction in order to ensure global consistency. (Chen, et al., 2008)

In practical terms, Enterprise Architecture covers several views that merge together in order to create the EA concept (Land et al., 2009). These views include:

- The business view, which consists of a definition of the overall business (in terms of organisation, people and processes). Business Architecture supports business change through a more holistic perspective (Land, et al., 2009).
- The IT view, which incorporates the definition and description of an IT system's structure and relationships (Land, et al., 2009). An Information Technology view will also naturally cover the ways in which IT supports the enterprise, enabling it to achieve the enterprise's goals (Land, et al., 2009).

Overall, the Enterprise Architecture discipline deals with organising an enterprise's resources (Wegmann, 2003). As time progresses, the organisation evolves as a result of numerous forces, which are exerted in and on the enterprise (Wegmann, 2003). The general goal of an EA project is to define and implement strategies that will guide the enterprise in its evolution (Wegmann, 2003). These strategies are both, the plans to be realised by the enterprise, along with the patterns, which state how the enterprise operates (Mintzberg et al., 1998).

2.2 Enterprise Architecture Frameworks

This sub-section commences by introducing Enterprise Architecture Frameworks. Next, the section takes a brief look into the history of EA frameworks, before concluding with the choice of framework for this particular study, with details on the motivational reasons behind this choice.

2.2.1 Introduction to EA Frameworks

The Enterprise Architecture concept has a large number of frameworks associated with it. These include The Zachman framework, The Open Group's Architecture Framework (TOGAF), The Department of Defence's Architectural Framework (DODAF) as well as many more. The business driver behind having a common architecture framework throughout an organisation stems from the fact that these organisations may consist of multiple enterprises. Having said this, there is often a lot in common regarding the overall organisational mission, consequently giving rise to the need for interoperable Information Systems and consistent data extracts throughout the whole organisation. (Minoli, 2008)

An Enterprise Architecture Framework (EAF) maps all of the software development processes within the enterprise and shows how they relate and interact in order to fulfil the enterprise's mission (Urbaczewski & Mrdalj, 2006). The overall aim of these frameworks is to simplify the architecture's development, whilst ensuring complete coverage of the architectural dimensions of the designed solutions through a common terminology (Shah & Kourdi, 2007). In practical terms, Enterprise Architecture frameworks play dual roles: serving as documentation and component-specification tools whilst also facilitating enterprise planning and problem solving (Shah & Kourdi, 2007). Overall, architecture frameworks have become a popular means to manage the complexity that is present within today's enterprises, as they provide a method for designing and describing architectures (Ota & Gerz, 2011).

2.2.2 History of EA Frameworks

John Zachman's framework was published in 1987, and is considered as one of the first recognised Enterprise Architecture frameworks (Zachman, 1987). Zachman emphasises the different perspectives that must be contemplated in order to set up the IT architecture of an enterprise (Ota & Gerz, 2011). In 1994, after the publication of Zachman's article entitled 'A Framework for Information Systems Architecture', the Technical Architecture Framework for Information Management (TAFIM) was introduced, under the influence of Zachman's framework (Sessions, 2007). By 1998, the Chief Information Officer's (CIO) Council was already working on one of its major projects called the Federal Enterprise Architecture Framework (FEAF), which was then renamed as Federal Enterprise Architecture (FEA) in 2002 (Sessions, 2007).

In 1998, TAFIM was officially retired by the Department of Defence, with its work passed over to The Open Group (Sessions, 2007). This formed the basis for the development of The Open Group's Architecture Framework (TOGAF), which was released in its 8th version as an 'Enterprise Edition' in 2003 (Sessions, 2007). By 2005, Gartner was starting to become a dominant force in Enterprise Architecture's private sector (Sessions, 2007). They soon realised that they couldn't compete with their powerful rivals, Meta Group (Sessions, 2007). Owing to this, Gartner decided to buy Meta Group (Sessions, 2007). In addition, other recognised military architectures were developed, such as the NATO Architecture Framework (NAF), which is used in several countries (Ota & Gerz, 2011).

Although this section has detailed the main developments in EA's evolution, it is important to note that EA frameworks have been continuously developing to date, with new frameworks constantly emerging (Minoli, 2008).

2.2.3 Selection of EA Frameworks

As previously mentioned, there are a number of established EA frameworks (Minoli, 2008). Although these frameworks may overlap or address similar views, some have also been designed to address specific needs or concerns (Urbaczewski & Mrdalj, 2006). EA frameworks typically differ as a result of the stakeholders that they address and the issues that concern their 'world' (Urbaczewski & Mrdalj, 2006). They also tend to differ in terms of their approach and level of detail, with some including proposed guidelines, whilst others have specific methodologies to follow (Urbaczewski & Mrdalj, 2006). Some of the benefits obtained by using an architecture framework are the following: it increases the speed and simplifies the development of the architecture, it guarantees a more complete coverage of the designed solution, and finally, it ensures that the selected architecture enables future growth in response to the business needs (Minoli, 2008).

EA Frameworks provide guidance on how to describe architectures; they typically do not provide guidance on how to construct or implement a specific architecture or how to develop and acquire systems (Minoli, 2008). In essence, the problem arises when Enterprise Architects turn to EA frameworks in order to aid them in implementing Enterprise Architecture projects. This problem is due to the fact that EA frameworks don't typically create actionable, extended Enterprise Architectures (Schekkerman, 2003). Additionally, the frameworks provide minimal aid with regards to creating the necessary architectural artefacts (Jonkers, et al., 2006). This thesis incorporates EA frameworks in order to enable the Business Architecture's theoretical implementation steps to be compared to its practical implementation.

2.3 TOGAF

This sub-section commences by providing a historically oriented background of the EA framework selected within this study, namely, TOGAF. Next, the sub-section presents one of TOGAF's key elements, the Architecture Development Method (ADM), which includes the nine architectural phases, before concluding with the reasons behind TOGAF's selection for this particular study.

2.3.1 TOGAF Overview

The Open Group's Architectural Framework is currently considered as one of the most widely used EA frameworks (ARIS, 2009). This framework allows corporate architects and stakeholders alike, to design, build and evaluate a flexible EA for the enterprise (Minoli, 2008). TOGAF is designed to support the following architectures: Business, Application, Data and Technology (Minoli, 2008).

TOGAF describes itself as a 'framework', but it is crucial to note that the framework's most prominent segment is its recipe for creating an architecture, namely, the Architecture Development Method (ADM) (further detailed in section [2.3.3](#)) (Sessions, 2007). Boyce Raynard (2008) defines TOGAF as the complete approach to the plan, design and implementation of several stages of a company's business processes and Information Technology infrastructure. TOGAF is considered as an outstanding tool for business because of its comprehensive approach, depth and simplicity (Raynard, 2008). In comparison to other EA frameworks, TOGAF focuses on presenting a methodology that enables the creation of architecture, while it "provides less detailed information concerning the result of the architecture products" (Ota & Gerz, 2011, p. 3).

2.3.2 History of TOGAF

The Technical Architecture Framework for Information Management (TAFIM) was the end product of the research conducted by the Department of Defence in the United States (US), which cost millions of dollars (Raynard, 2008). The US Department of Defence later donated TAFIM to The Open Group (Johnson & Ekstedt, 2008). As a result of this, TAFIM became the base upon which The Open Group's Architectural Framework (TOGAF) was subsequently developed in 1995 (Raynard, 2008). As is the case with a number of established EA frameworks, TOGAF's development was influenced by Zachman's EA Framework (Mary & Rodrigues, 2011). Since its establishment, The Open Group has published a number of improved versions to the originally announced framework (Johnson & Ekstedt, 2008).

Although The Open Group's Architectural Framework (TOGAF) is entrenched in the US Department of Defence, The Open Group has succeeded in eliminating the military specificities that were present in TAFIM (Johnson & Ekstedt, 2008). Consequently, while reading the documentation published by The Open Group, it is difficult to detect TOGAF's heritage (Johnson & Ekstedt, 2008). TOGAF is a general-domain framework, which is

applied in all types of industries (Johnson & Ekstedt, 2008). The Open Group published TOGAF's version 9 in 2009, with minimal changes made from TOGAF's previously released version 8 (Wout, et al., 2010). More recently, TOGAF released version 9.1 in December 2011, with over four hundred and fifty changes made to this version (The Open Group, 2011a).

2.3.3 TOGAF's ADM

As previously mentioned, one of TOGAF's key elements is the Architecture Development Method (ADM), which states the process for developing an EA project (Tang, Han and Chen, 2004). TOGAF's ADM focuses on developing an organisation-specific Enterprise Architecture that addresses business requirements (Minoli, 2008). This ADM provides a reliable, proven way of developing the architecture and architectural views that enable the architect to ensure that a complex set of requirements are adequately addressed (Minoli, 2008).

The ADM specifies numerous architectural phases (as shown in Figure 2:2), namely: Preliminary framework and principles: A: Architecture Vision, B: Business Architecture, C: Information Systems Architecture, D: Technology Architecture, E: Opportunities and Solutions, F: Migration Planning, G: Implementation Governance, H: Architecture Change Management, whilst also providing cross-phase summaries on Requirements Management, which is linked to phases A to H (Josey et al., 2011). During the first phase, the organisational issues, administrative issues and the scoping issues are set up (Johnson & Ekstedt, 2008). Subsequently, the vision of the architectural activity is presented during the second phase (Johnson & Ekstedt, 2008). During the third, fourth and the fifth phases, the target Business, IS and Technology Architectures are modelled respectively (Johnson & Ekstedt, 2008). A plan for migrating to the Target Architecture is created during the sixth and the seventh phases, while the execution of this plan is supervised during the eighth phase (Johnson & Ekstedt, 2008). Finally a process for carrying the changes over to the architecture is put in place during the execution of the ninth phase (Johnson & Ekstedt, 2008).

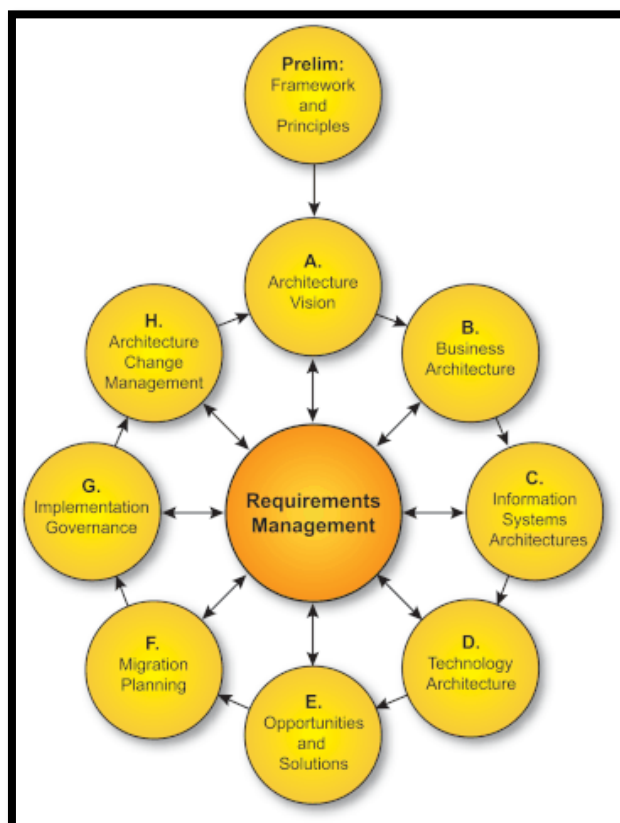


Figure 2:2 TOGAF's ADM
(The Open Group, 2006)

The ADM also provides a narrative of each of the phases mentioned above, in terms of objectives, approach, inputs, steps and outputs (Wout, et al., 2010). In addition, the framework includes the Enterprise Continuum, which is a virtual repository of all architectural assets (Tang, et al., 2004). The TOGAF Resource Base is another component present within TOGAF (Tang, et al., 2004). This base essentially consists of resources, templates, guidelines and background information to assist TOGAF's use (Tang, et al., 2004).

2.3.4 TOGAF's Selection

TOGAF was selected for use within this thesis due to a number of reasons: As previously mentioned in section 2.3.1, The Open Group's Architecture Framework (TOGAF) is considered as one of the most commonly utilised standard EA frameworks (ARIS, 2009).

Secondly, The Open Group's Architecture Framework was developed by a vendor and technology neutral organisation (Johnson & Ekstedt, 2008). The fact that it is vendor neutral means that it is open to incorporating open systems as part of its solution. This is in accordance with the implication that only systems, which follow common vendor neutral conventions, can be described as open systems (Pritschow et al., 1993). TOGAF is also currently published on The Open Group's public Website, and is freely available to enterprises for use and reproduction (Minoli, 2008).

Thirdly, TOGAF's ADM provides a narrative of each of its phases, in terms of steps for the enterprise architects to implement (Wout, et al., 2010). These specified steps enable a simple, yet effective comparison to be made between them, and the steps implemented within the Business Architecture phase's practical implementation, which is the core purpose of this study. The ADM's narrative is in contrast to other EA frameworks, like Zachman's, which doesn't provide a step-by-step process during the creation of a new architecture (Sessions, 2007). Additionally, Zachman's framework does not provide guidance on the sequence, process or implementation (Urbaczewski & Mrdalj, 2006). TOGAF is rather flexible in this regard by allowing the different phases to be combined, re-ordered, skipped or re-shaped in order to fit the situation at hand (Sessions, 2007).

Finally, TOGAF is strong on the business and technical architecture aspects (Urbaczewski & Mrdalj, 2006). TOGAF is designed in a manner that enables it to support Business Architecture, which defines the business strategy, governance, organisation and key business processes (Minoli, 2008; Josey, et al., 2011). TOGAF's strengths, in relation to the Business Architecture phase make it an increasingly suitable framework for the ensuing comparison within this study.

2.4 Business Architecture

This sub-section of the report commences by defining the Business Architecture concept in the general sense, before differentiating it from Enterprise Architecture and detailing the perspective from which Business Architecture is viewed within this study. A more detailed insight into the Business Architecture concept is then provided, entailing a look into its history and evolution. Finally, the reasoning behind Business Architecture's selection is provided, with this concept related back to the study's purpose.

2.4.1 Business Architecture Definition

In general terms, the concept of Business Architecture is said to represent the fundamental organisation of the corporation (or government agency) from a business strategy viewpoint (Winter & Fischer, 2007). In essence, it is an “architectural formulation of the business function” (Minoli, 2008, p. 36). A more detailed definition of the concept is provided by The Open Group, who state that Business Architecture is “The business strategy, governance, organization, and key business processes information, as well as the interaction between these concepts” (Josey, et al., 2011, p. 152). The concept of Business Architecture may be differentiated from that of Enterprise Architecture by viewing Enterprise Architectures as: any architecture which is viewed within the enterprise level (McGovern, et al., 2004), with the term ‘enterprise’ used to indicate the scope of the architecture being developed (Versteeg & Bouwman, 2006). Meanwhile, Business Architecture is a type of architecture that specifically focuses upon overseeing the economic activities carried out by multiple organisations (supply chain level), one organisation (enterprise level) or by a part of an organisation (unit level) (Versteeg & Bouwman, 2006).

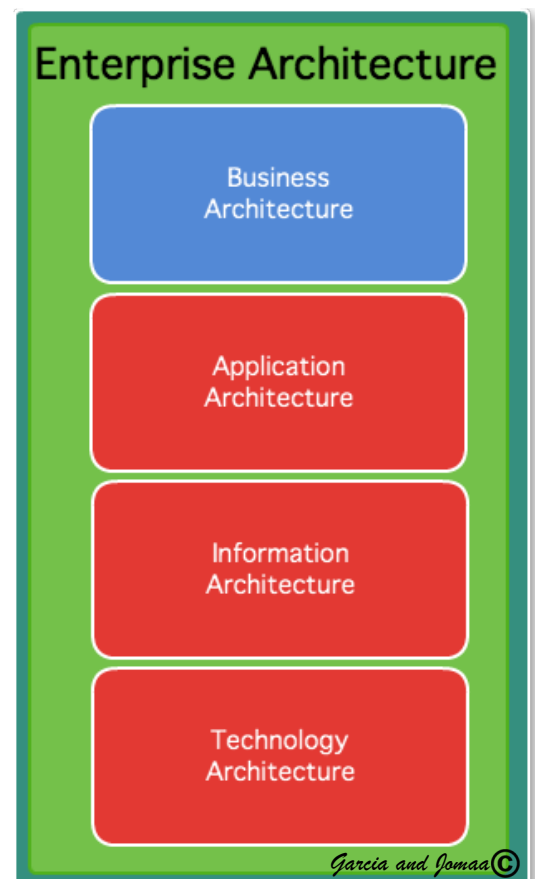


Figure 2:3 Business Architecture
(Mitra, 2008, p. 4)

Within the context of this thesis, the concept of Business Architecture will be viewed from a single organisation perspective, at enterprise level, as detailed above (Versteeg & Bouwman, 2006). As such, Business Architecture will also be viewed as being a part of Enterprise Architecture (as shown in Figure 2:3). This is in accordance with the stance taken by the majority of EA frameworks that have incorporated Business Architecture as one of the architectures addressed within their frameworks (Minoli, 2008; Mitra, 2008; Winter & Fischer, 2007).

2.4.2 Insight into Business Architecture

Following on from the definitions of Business Architecture provided above (section 2.4.1), it is evident that the Business Architecture concept is focussed upon the various elements required to organise an enterprise from a strategic management perspective (Versteeg & Bouwman, 2006). As previously mentioned, these elements may be said to include: business strategy, governance, organization, and key business processes information, as well as the interaction between these elements (Josey, et al., 2011). The elements and their inter-relationships to one another are portrayed in figure 2:4 below:

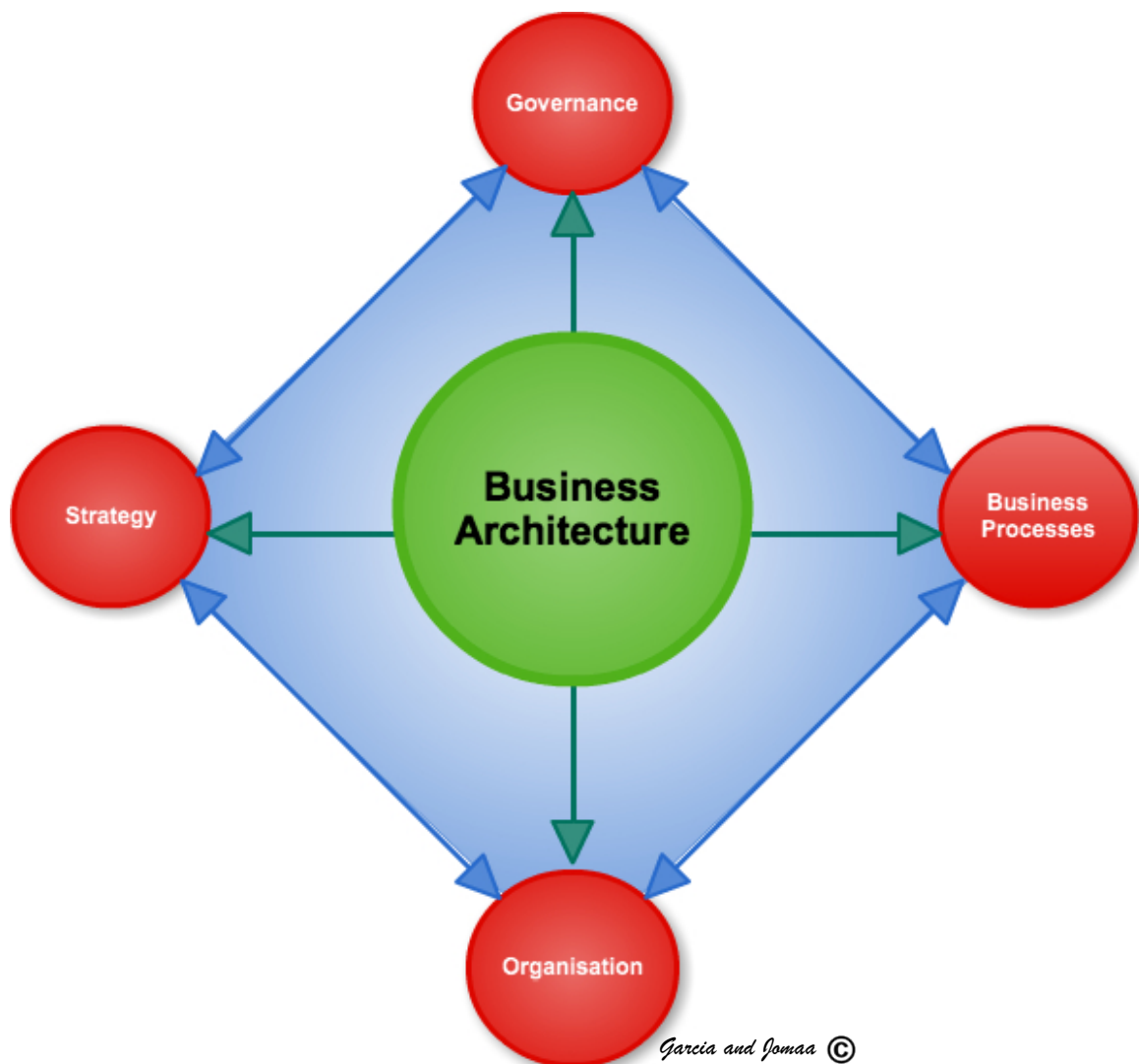


Figure 2:4 Business Architecture and its associated Elements

Fully covering the concept of Business Architecture and its associated elements would require a thesis of its own. However, this section aims to provide a high level overview of BA and each of its associated elements from an EA perspective.

Business processes form a part of the more detailed description of Business Architecture provided by The Open Group in section 2.4.1. From a business' perspective, a business process may be defined as "a collection of activities that takes one or more kinds of input and creates an output that is of value to the customer" (Hammer & Champy, 1993, p. 53).

Viewing the concept from this perspective results in a business process placing its emphasis on how work is performed, rather than focusing upon the description of the products or services that arise as a result of a process's completion (Lindsay, et al., 2003). The business processes represent the activities and the value that is generated within the business (Eriksson & Penker, 2000). As such, the business perspective tends to focus more on the interaction between the processes and resources, aiming to achieve the goal of each process, in addition to the interaction between different processes (Eriksson & Penker, 2000). Melony Rood goes on to state: "the processes are the flow of activities that enable the enterprise to carry out its work and produce its products and services" (Rood, 1994, p. 108). These processes determine how decision-making, performance monitoring, and co-ordination activities are carried out within an enterprise (Rood, 1994).

A second associated element that is directly associated with the concept of Business Architecture is 'Strategy'. As previously stated in section [2.4.1](#), Business Architecture is viewed from the strategic viewpoint. Additionally, strategy is one of the key elements that enterprises need to establish and then subsequently manage as part of their Business Architecture (as detailed in section [2.4.2](#)). In this regard, Rumelt, Schendel and Teece (1994) concisely state that the concept of a firm's strategy is about 'the direction of organisations', proposing that the strategy's theory "includes those subjects of primary concern to senior management, or to anyone seeking reasons for success or failure among organisations" (Rumelt, et al., 1994, p. 9). Strategy's underlying theme is competition (Hedman & Kalling, 2002). Firms and organisations alike are in competition when it comes to a number of various elements, which include: factor inputs, customers and most importantly, revenues (Rumelt, et al., 1994). Consequently, organisations will have a range of strategic theories that they are able to pursue in order to form their business strategy (Hedman & Kalling, 2002).

From a theoretical perspective, there have been a number of different strategic theorists that have contributed to this field of study. Some of the more prominent theorists within this domain include Chandler (1962), Ansoff (1965), Andrews (1971), Porter (1980; 1985) and Barney (1991) (Hedman & Kalling, 2002). As previously mentioned, fully covering the Business Architecture concept along with its associated elements would most likely require a thesis of its own; however, this thesis will only cover the concept from a high level perspective. As such, the main authors within strategic theory and their theories will only be detailed in a very brief manner in order to state their core characteristics, whilst also noting their existence within the field of strategic theory, an element associated to Business Architecture.

In 1962, Chandler wrote 'Strategy and Structure: Chapters in the History of the American Industrial Enterprise' (Chandler, 1962). Chandler (1962) concluded that 'structure should follow strategy', a statement that has been widely criticised since (Hedman & Kalling, 2002). In 1965, Ansoff (1965) wrote the book, 'Corporate Strategy: An analytical approach to business policy for growth and expansion', focussing more on the corporate strategy, as opposed to business strategy. Ansoff was of the opinion that strategy acts as a 'common thread' allowing choices to be unified for: product-market scope, growth vector, competitive advantage, synergy and the make-or-buy decision (Ansoff, 1965). Later on in the same year

that Ansoff wrote his Corporate Strategy book, 'Business Policy: Text and Cases' was also introduced, with Andrews contributing to this book (Hedman & Kalling, 2002). Andrews essentially claimed that changes to the industrial environment that an organisation operated in had to correspond to internal changes made by using resources and competencies (Hedman & Kalling, 2002). Andrews also proposed analysing the internal strengths and weaknesses of an organisation, before matching these factors in order to form a strategy, meaning that his work played a part in establishing the widely quoted and used SWOT analysis (Andrews, 1971; Hedman & Kalling, 2002).

Slightly more recently, in 1980, Michael Porter established two well-known models within the competitive strategy domain, namely: The five forces model and The Generic Strategies model (Porter, 1980). Porter commences by stating, "the essence of formulating competitive strategy is relating a company to its environment" (Porter, 1980, p. 3). The five forces model looks into how competitive a firm's environment is by focussing on the following factors: the threat of entry, the intensity of rivalry among existing competitors, the pressure from substitute products, the bargaining power of buyers and the bargaining power of suppliers, stating that the stronger these forces are, the more competitive a firm's environment is likely to be (Porter, 1980). On the other hand, the three generic strategies model gives businesses the choice between three generic strategies that they may choose to pursue. These are: overall cost leadership, differentiation and focus, with firms rarely able to pursue more than one of these strategies (Porter, 1980). In 1985, Porter also introduced the value chain as a metaphor for firms by which they create low-cost or differentiation strategies (Hedman & Kalling, 2002; Porter, 1985).

Finally within the strategic theory domain, Barney wrote 'Firm Resources and Sustained Competitive Advantage', which detailed the resource-based view (Barney, 1991). This view is based around the assumption that "strategic resources are heterogeneously distributed across firms and that these differences are stable over time" (Barney, 1991, p. 99). Barney's view is that the value, rareness, imperfect imitability and substitutability of resources allow firms to attain a sustained competitive advantage, with firms only achieving competitive advantage when they implement a value creating strategy which is not simultaneously being implemented by any current or potential competitors (Barney, 1991; Hedman & Kalling, 2002). Prahalad and Hamel (1990) have also contributed to the resource-based view. They go along with Barney and state their belief that firms must develop a strategic architecture (Hedman & Kalling, 2002), which essentially acts as a "road map for the future that identifies which core competencies to build and their constituent technologies" (Prahalad & Hamel, 1990, p. 11). This strategic architecture provides the logic, which is the basis for which strategic moves a firm may make (Prahalad & Hamel, 1990).

Enterprises implementing Business Architecture will have the choice as to how they construct their business strategy, and what they base it on. The business strategy that is constructed will form the perspective through which the organisation is viewed (Winter & Fischer, 2007). It will also form a key part of this Business Architecture (Josey, et al., 2011), whilst affecting other elements within this architecture. The enterprise's design and evolution principles for Business Architecture are elements that will be affected by the enterprise's business strategy.

They can be derived according to Porter's market based approach (Porter, 1980), or the resource based approach to strategic management (Winter & Fischer, 2007; Barney, 1991; Prahalad & Hamel, 1990).

A third element that is covered by Business Architecture's utilised definition in section [2.4.1](#) is that of an 'organization'. The organisation should provide "the actual mapping of activities, roles and responsibilities to people and organisational structures" (van der Linden et al., 2007, p.59). Organisations typically include a reflection of the business processes that are present within an enterprise, with the personnel or structural units within the enterprise able to play a number of differing roles (van der Linden, et al., 2007). These roles also have the possibility of being performed by a number of people or units (van der Linden, et al., 2007). As such, an enterprise's BA should include the business organisation that is present within the enterprise, essentially detailing the enterprise's key constituent elements that are structurally mapped to one another, enabling the enterprise to be portrayed in an organised manner.

The fourth and final element associated with Business Architecture is governance. The term 'governance' may be defined as being "The discipline of monitoring, managing, and steering a business (or IS/IT landscape) to deliver the business outcome required" (Josey, et al., 2011, p. 153). At enterprise level, governance is defined as being "the organisational competence for continuously exercising guiding authority over enterprise strategy and architecture development, and the subsequent design, implementation, and operation of the enterprise" (Hoogervorst, 2009, p. 265). In essence, any Business Architecture will need to cover governance strategies that apply to the whole enterprise. By encompassing the whole enterprise, the Business Architecture will consequently also have the ability to contribute to more specific forms of governance that are required within the enterprise, such as Information Communication Technology (ICT) governance (Versteeg & Bouwman, 2006). BA is able to positively contribute to satisfactory ICT governance, allowing enterprises to determine the required resources for business critical activities, whilst also specifying how e-business development and support will be efficiently managed (Versteeg & Bouwman, 2006).

In conclusion, an enterprise's Business Architecture encompasses all four of the aforementioned elements and the inter-relationships that exist between them (Josey, et al., 2011).

2.4.3 Selecting Business Architecture

Although Business Architecture is acknowledged as being one of the elements that forms the concept of Enterprise Architecture, it is important to note that there are a number of additional views that incorporate additional elements, which also form the EA concept, along with Business Architecture. The Business Architecture concept is highlighted when Enterprise Architecture is viewed from a business perspective. Having said this, there are also other views that may be used in order to identify further elements that play a part in defining the concept of EA. These additional views include the IT one, which would typically focus on defining and describing the structure of IT systems, the relationships between them and the ways in which they support the business in achieving its overall objectives and goals. The governance view is another one, which would usually address governance in full, encompassing business, organisational and systems governance. Finally, the fourth main view that is typically utilised to define the concept of EA and its related elements is the security view. This addresses business, information, IT, organisational and business service related security. (Land, et al., 2009)

EA's frameworks also include a number of other architectures, which are addressed within them (Minoli, 2008; Mitra, 2008; Winter & Fischer, 2007). These additional architectures are the Information Architecture which details where information is stored and how it is accessed, Application Systems Architecture which maps the relationship of software applications to one another and the Technology Architecture, which encompasses the hardware and networks within an enterprise (as shown in Figure 2:3) (Minoli, 2008; Mitra, 2008). Process and Integration Architectures may also be incorporated within an EA project's implementation (Winter & Fischer, 2007). The Process Architecture is focussed upon the organisation of service development, creation and distribution within an enterprise, while the Integration Architecture details the organisation of Information System components within the relevant EA context (Winter & Fischer, 2007).

All of this leads us to the following question: Why was Business Architecture chosen as the focus of this thesis? In order to answer this question, a good starting point would be to go back to the root of the thesis and establish whose problem Enterprise Architecture really is. In this regard, Enterprise Architecture is not solely seen as an IT issue, but first of all it is seen as a strategic and organisational challenge (Chen, et al., 2008). In concise terms, EA is not an IT issue, but rather a business issue (Ross, et al., 2006). Consequently, the concept of Enterprise Architecture is seen as being a business issue before being an IT issue, with Business Architecture forming the main element in the business view of Enterprise Architecture (Land, et al., 2009).

In addition to Enterprise Architecture primarily being a business issue, there is also the problem of 66% of EA projects resulting in failure (ARIS, 2009), with a Gartner report that was conducted in 2011 finding that only 9% of EA projects were supported as a collaboration between business and IT (Gartner, 2011). The theory on the matter also states that "EA requires business specialist experts, including IT, to work together in the same project team in a design partnership" (Finkelstein, 2006, p. 95).

Also in this regard, a case study of two Finnish government agencies concluded that, if the architecture is created from the bottom up with no control exercised from a business viewpoint, it may be difficult to justify the made architectural choices (Seppanen, et al., 2009). At the same time, the study also found that it would be hard to get time, capacity and funding for implementing the architecture in reality, and especially in alignment with the business or administrative objectives (Seppanen, et al., 2009). In essence, Enterprise Architecture should be applied in a top-down manner, using business driven-methods (Finkelstein, 2006). All of this shows that Business Architecture is an essential component within any Enterprise Architecture project that also typically contributes to forming a useful starting point from which subsequent functional, information, process and application architectures may be developed (Versteeg & Bouwman, 2006).

As such, this study has chosen to focus upon the typical starting point or base for subsequent architectural development within EA (Versteeg & Bouwman, 2006). This base is also a key architectural element within any EA implementation project, as denoted within the majority of established EA frameworks (Minoli, 2008; Mitra, 2008; Winter & Fischer, 2007). Additionally, the Business Architecture element, along with its relation to IT architecture could arguably be one of the reasons behind the large number of EA project failures. It would have been additionally enlightening if all of the architectures detailed within EA were analysed further. However, given the timeframe and resources available for this study, analysing more than one of EA's architectures is not feasible. Consequently, the thesis solely focuses upon the Business Architecture concept, with all other architectures falling outside its scope. Furthermore, for the purpose of answering the thesis question of comparing Business Architecture's implementation guidelines, as detailed on paper to its practical implementation, as detailed by Enterprise Architects operating within the field, TOGAF's perspective of Business Architecture is used in order to allow this comparison to be conducted in a simple, yet effective manner.

2.5 Business Architecture in TOGAF's ADM

TOGAF's definition of the Business Architecture concept is detailed in section 2.4.1. It essentially states that Business Architecture encompasses a range of elements, namely: a business' strategy, governance, organisation (way in which a business is organised), and key business processes information, along with the interaction between these elements (Josey, et al., 2011).

TOGAF is designed to support the Business Architecture, along with three other architectures, namely: Data, Application and Technology architectures (Minoli, 2008; Raynard, 2008). TOGAF's phase C 'Information Systems Architectures' includes both the Data and Application Architectures as being a part of it (Josey, et al., 2011). In this regard, TOGAF treats Business Architecture as one of the architectures present within Enterprise Architecture. This treatment is in line with the methodology used by the majority of established EA frameworks when dealing with the concept of Business Architecture. (Minoli, 2008; Mitra, 2008; Winter & Fischer, 2007)

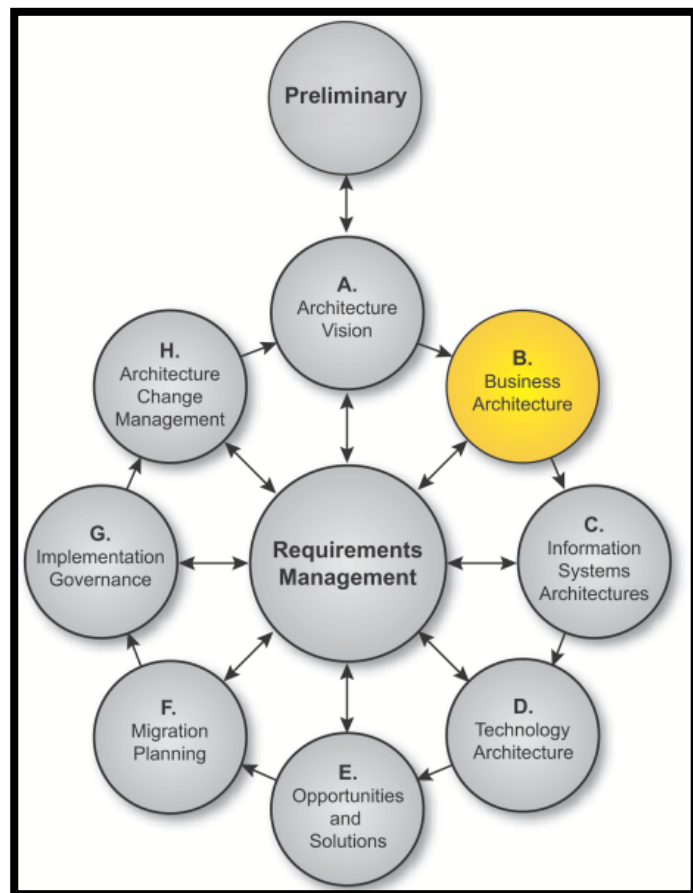


Figure 2:5 TOGAF Phase B: Business Architecture
(The Open Group, 2011b)

Since Business Architecture is one of the architectures covered by TOGAF, this architecture has its own dedicated phase in the ADM (as shown in Figure 2:5 above). Business Architecture is linked to the following phases: A: Architecture Vision and C: Information Systems Architectures. Additionally, this architecture is also related to the cross-phase summaries on Requirements Management, which is linked to the other phases (from A to H) within the ADM. (Josey, et al., 2011)

Having identified the concept of Business Architecture within TOGAF and its surroundings; this next segment of the report details the specific steps that TOGAF proposes for the implementation of phase B within its ADM: Business Architecture. The overriding objective of this phase is to describe how the enterprise needs to operate in order to achieve their business goals through the re-use of as much material as possible, whilst also responding to the strategic drivers that were identified in the phase A, the Architecture Vision. (The Open Group, 2011b). During the implementation process, having knowledge in the Business Architecture is a pre-requisite for any architectural work, including the data, application and technology domains (The Open Group, 2011b).

From a practical perspective, Business Architecture is a crucial concept in demonstrating the business value of the architectural work and the envisaged Return on Investment (ROI) to the relevant stakeholders. Scoping the work that needs to be done within this phase largely depends upon the environment of the enterprise in question, meaning that it will vary from one case of EA implementation to another. The role of the Business Architecture is to define how to achieve the goals, the drivers and the metrics for success, while the business strategy typically defines what to achieve and not how to get there. (The Open Group, 2011b)

Before detailing TOGAF's prescribed steps for the Business Architecture phase, it is important to note that any new business processes introduced into the enterprise, as part of the EA project that is being implemented will need to be fully defined during this phase. Additionally, all of the existing enterprise processes that are going to be carried over and supported in the target architecture (the architecture being developed) will need to be fully defined, if this has not already been done in previous architectural work (The Open Group, 2011b).

The order of the steps proposed by TOGAF in phase B, and their corresponding time (start and completion) must be adapted to the situation. The activities that have been started in this phase must be closed during the step entitled 'Finalise the Business Architecture', and with the documentation generated during the phase formally published in the step named 'Create Architecture Definition Document' (The Open Group, 2011b). TOGAF proposes a series of nine steps to be carried out within the Business Architecture phase, as shown in Figure 2:6 below:

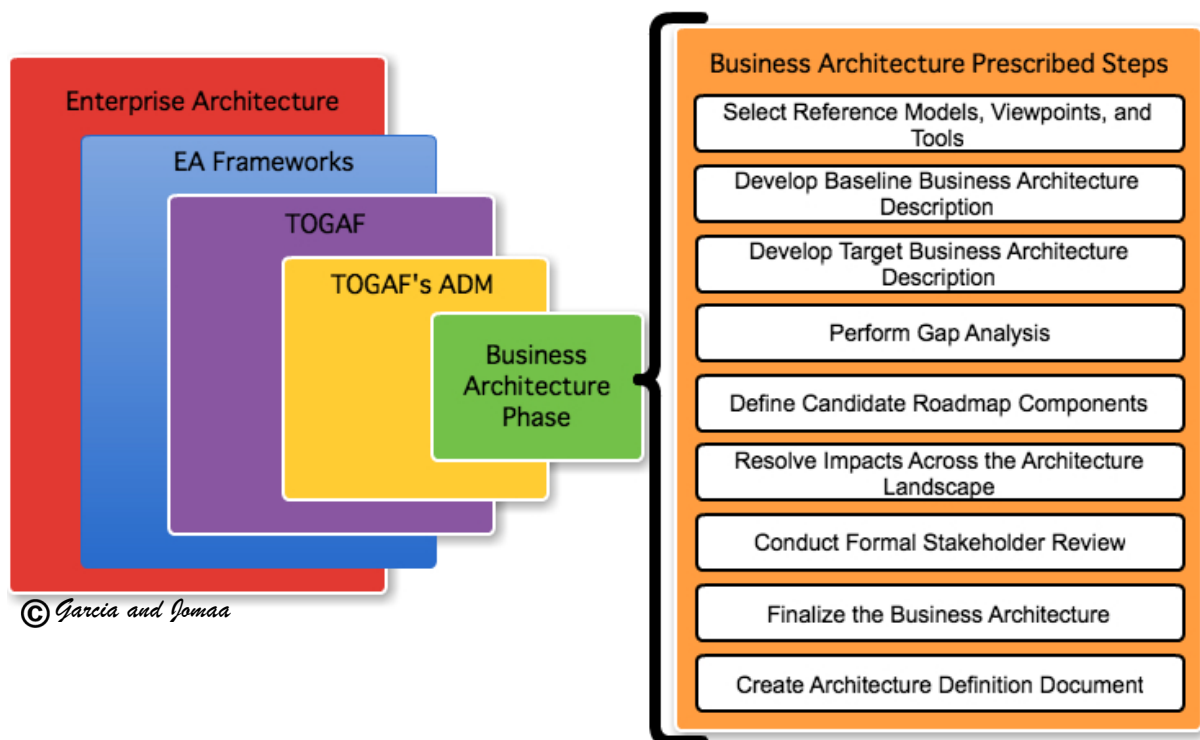


Figure 2:6 TOGAF's Business Architecture Steps

The BA phase's steps, as prescribed by TOGAF are detailed below (The Open Group, 2011b):

1. Select Reference Models, Viewpoints, and Tools

The first step in the Business Architecture is to 'Select Reference Models, Viewpoints, and Tools'. During this first step, the resources (reference models, patterns, etc.) must be selected from the Architecture Repository and based on the business drivers, the stakeholders and concerns. Additionally, the relevant Business Architecture viewpoints (e.g., operations, management, financial) must be selected during this stage in order to allow the determination of how the stakeholder concerns are addressed in the Business Architecture. Finally, the tools and techniques must be identified and used for capturing, modelling and analysis, in association with the selected viewpoints gathered in the previous steps. Depending on the degree of sophistication, the documentation within this step may encompass simple documents or more sophisticated modelling tools (e.g. activity models and use-case models).

Firstly, the overall modelling process for the architecture should be determined within this step. This entails selecting the models required to support specific views through the use of selected tools or methodologies for each and every viewpoint. In this context, a view is the representation of a related set of concerns, which is basically what is seen from a viewpoint. In contrast, a viewpoint defines the perspective from which a view is taken.

In essence, all stakeholder concerns must be covered within this step. If they are not fully covered, new models (or augmented existing models) will need to be created in order to address those concerns that are not covered. Business scenarios are stated as being a useful technique that should be used in order to discover and document the business requirements. This technique may be used in an iterative manner, at various levels of abstraction within Business Architecture. In this regard, a business scenario typically describes: a business process, application or applications that may be enabled by the architecture; the business and technology environments; people, and computing components that are responsible for the execution of a scenario and the desired outcomes of any proper execution.

Numerous models are cited as techniques, which enable the definition of an organisation's Business Architecture. These models include: activity, use-case and class models, with the opportunity of combining all three of these models existing in certain cases. The level of decomposition required will vary from one enterprise to another, as well as within enterprises. As such, Architects should consider the enterprise's goals, objectives, scope and purpose of the Enterprise Architecture in order to determine the level of decomposition.

2. Develop Baseline Business Architecture Description

The second step prescribes the development of the baseline description of the existing Business Architecture that is present within the enterprise in question. In essence, this step is a formalisation of the existing Business Architecture that an enterprise has at the time that it is being analysed for the purpose of implementing an EA project within it. As previously mentioned, the scope and level of detail involved here will largely depend upon the number of business elements that the architect envisages will be carried over for use in the target

architecture (the architecture being developed) in addition to whether or not business descriptions exist. If the number of business elements that the architect foresees carrying over to the target architecture is high and most Business Architecture descriptions exist, then the scope and level of detail will be less than if the number of business elements that are likely to be carried over is low, with the number of existing architecture descriptions also low.

In the cases where architecture model development is required in order to satisfy stakeholder concerns, the models identified in step one should be used as a guideline in order to create new architecture content for the purpose of describing the Baseline Architecture.

3. Develop Target Business Architecture Description

This step is one that entails developing the target Business Architecture in order for it to support the Architecture Vision. In this context, the target Business Architecture is the future state of Architecture that is being developed for the Enterprise. The scope and overall detail of this phase is largely dependent upon the relevance of the existing business elements to accomplish the target Business Architecture, along with the existence of architectural descriptions. Both, the level of detail and scope will increase if the existing business elements are not very relevant to the target Business Architecture, with a small number of existing architectural descriptions. This step also advocates identifying the relevant Business Architecture building blocks with regards to the Architecture repository. The models identified in step one are again used as a guideline for creating new architecture content in order to describe the target architecture that is being developed.

4. Perform Gap Analysis

During the fourth step, the architect must verify the architecture models for accuracy and internal consistency by performing the following tasks:

- A trade-off analysis with the purpose of resolving any existing conflicts between the different views.
- Validating that the architecture models support the objectives, principles and constraints.
- Noting the changes done to the viewpoint, as represented in the selected models that may be found within the Architecture Repository.
- Testing architecture models for completeness against the requirements.
- Conducting a Gap Analysis that identifies the existing gaps between the baseline and target states.

5. Define Candidate Roadmap Components

After developing the Baseline Architecture, the Target Architecture and obtaining the Gap Analysis Results, a business roadmap must be created in order to prioritise the activities of the upcoming phases.

The purpose of the initial Business Architecture roadmap is to support a more detailed definition of a cross-discipline roadmap within the Opportunities & Solutions phase (Phase E of TOGAF's ADM, as shown in Figure 2:2).

6. Resolve Impacts Across the Architecture Landscape

The Post-Business Architecture era requires an understanding of any wider implications of the EA project. The architecture landscape presents an architectural representation of assets in use, or planned, by the enterprise at particular points in time. This landscape plays a pivotal role within this step, with its artefacts further examined in order to identify:

- Whether the BA has an impact on any pre-existing architectures within the enterprise.
- Whether or not recent changes that have been made impact the Business Architecture
- Whether or not there are opportunities to leverage the work that has been done within the Business Architecture phase into other areas within the organisation.
- Whether BA impacts other projects within the enterprise (including planned ones).
- Whether the BA will be impacted by other projects (including planned ones).

7. Conduct Formal Stakeholder Review

This step proposes checking the original motivation for the actual architecture project and the Statement of Architecture Work in contrast to the proposed Business Architecture. At the end of this step, it is crucial to refine the proposed Business Architecture if needed.

8. Finalize the Business Architecture

This step closes all of the activities initiated in the BA phase. The step encompasses a formal review of the phase. Standards for each of the building blocks that are to be used within the architecture should be selected in this step, with re-use strongly recommended. The building blocks that are going to be used within the EA project should also be fully documented.

This step also calls for a final crosscheck of the overall architecture to be conducted against business goals, with the rationale for building block decisions documented in the architecture document. The documentation within this phase also encompasses the production of a final requirements traceability report, along with the final mapping of the architecture within the Architecture Repository. Finally, this step entails the finalisation of all the work products, such as the gap analysis that should have been previously conducted in step four.

9. Create Architecture Definition Document

During the last step of the BA phase, the rationale for building block decisions is documented in the Architecture Definition Document. This document should comprise some or all of the following sections: A business footprint describing a high-level overview of the people and locations related to the key business functions; A comprehensive description detailing the business functions and their information needs; A management footprint responsible for illustrating the span of control and accountability; The standards, rules and guidelines that portray working practices, legislation and financial measurements; And finally, a skill matrix.

In order to finalise this phase, reports or graphics that were generated by the modelling tools may be used to demonstrate the key views of the architecture. The architect should also aim to incorporate feedback from relevant stakeholders, as a result of their review of the Architecture Definition Document.

In conclusion, the BA phase's steps within TOGAF (presented above) will be utilised in chapter 4 of this report in order to establish the differences between them and the practical guidelines prescribed by Enterprise Architects.

3 Research Methods

This chapter commences by providing a detailed overview of the data collection mechanism that was utilised in order to obtain the study's findings. It then moves on to describe the data collection methodology that was put into practice when conducting the necessary interviews with the various interviewees. Next, the chapter provides a detailed outlook on the data analysis segment, entailing the obtained data's transcription and coding. Finally, the chapter concludes by asserting the procedures put in place in order to ensure that the study was of a sufficiently high quality, with the validity, reliability, bias and ethical elements all thoroughly addressed.

3.1 Research Procedure

We decided to investigate the existing differences between Enterprise Architecture's theory and practice; As a result of this, it was essential to acquire additional information within this domain in order to extend our pre-existing knowledge. Our first step was to analyse the concept of Enterprise Architecture. Once our analysis was under way, we soon found that Enterprise Architecture requires business and IT working together in the same project team (Finkelstein, 2006). We also came across a report, which stated that only 9% of Enterprise Architecture projects were supported as collaboration between business and IT (Gartner, 2011). Additionally, an Aris report found that the expected results are not achieved in two thirds of the EA projects implemented (ARIS, 2009).

After our in-depth analysis of EA, we decided to examine its implementation process. This led us to focus more upon the Enterprise Architecture frameworks, which were established in order to facilitate the implementation process of EA projects (Shah & Kourdi, 2007). We identified the existence of several frameworks in the Enterprise Architecture Domain. Out of these frameworks, we decided to utilise TOGAF. This enabled us to conduct a comparison between TOGAF's guidelines and the guidelines that are practically adhered to when implementing an EA project. TOGAF was selected for a number of reasons, the main one being that it is comprised of several components, which include the ADM. This ADM maps the various EA project phases in a simple and intuitive manner. More importantly for the purpose of our study, TOGAF consists of a detailed list of steps that need to be completed in order to implement each phase. These steps enabled us to conduct the sought comparison. Furthermore, we decided to analyse the BA element within TOGAF due to the fact that it is considered as the starting point from which subsequent functional, information, process and application architectures may be developed (Versteeg & Bouwman, 2006).

Finally, we decided to utilise TOGAF's detailed steps, which describe the practical implementation guidelines. These were then compared to the cited steps that were said to be carried out during the practical implementation of the Business Architecture phase. The comparison is required in order to achieve the study's main aim of highlighting and analysing the existing gaps between TOGAF's steps and what is actually done in practice. As such, these findings may be used to provide a more comprehensive outlook of the tasks that need to be carried out when implementing the BA element within an EA project. In turn, a more comprehensive overview of BA's implementation could help to ensure that less Business Architecture implementations fail. An overview of the study, which entails the various steps that were conducted, is provided in figure 3:1 below:

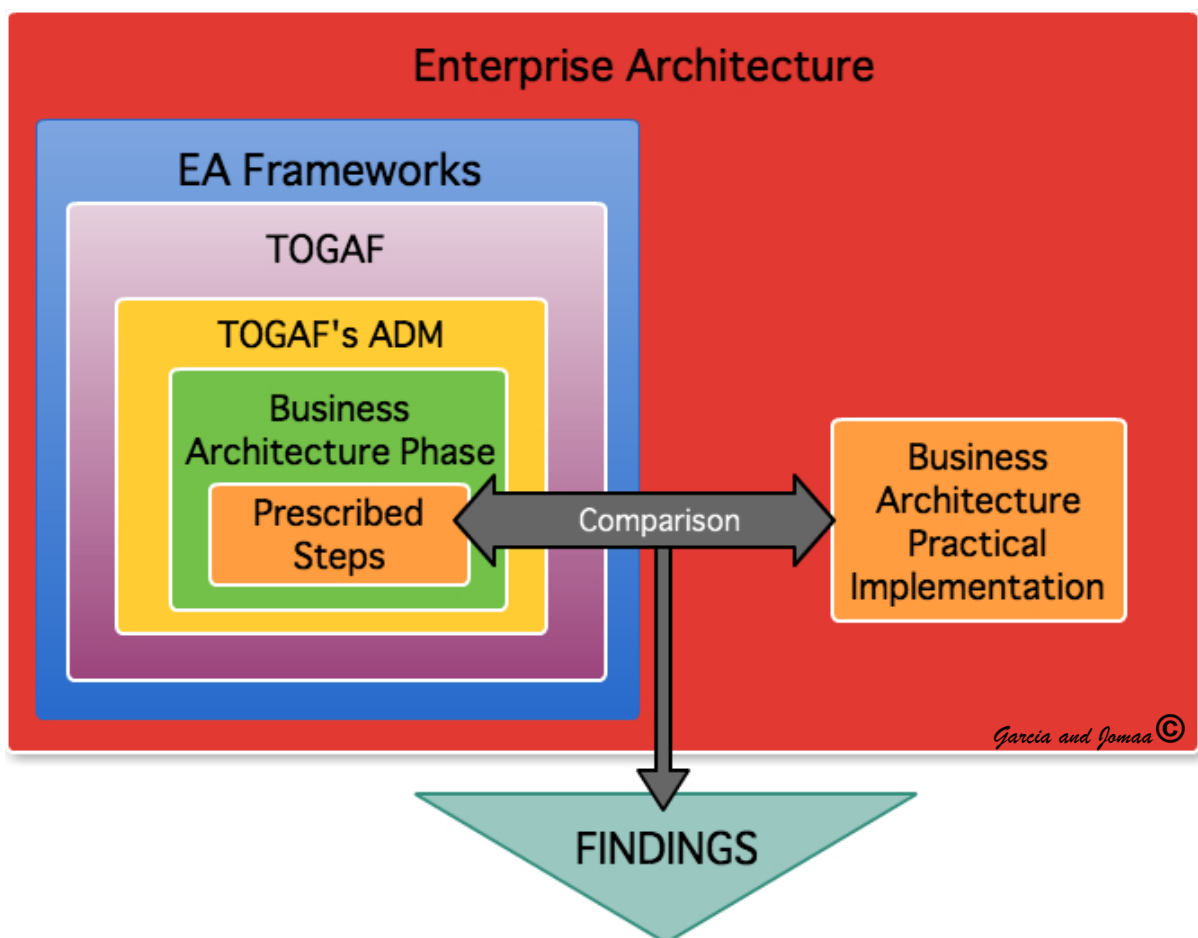


Figure 3:1 Study Overview

3.2 Data Collection

Interviewing was the means through which we collected the required data on practically implementing the BA phase. Interviews are defined as a conversation with a specified structure and a purpose (Kvale & Brinkmann, 2009). They were chosen in order to enable us to obtain the required information for conducting our comparison. Interviews are the only feasible way of obtaining detailed answers pertaining to TOGAF's specified steps for implementing Business Architecture.

In this regard, we decided to use the semi-structured type of interview, which entails the use of an incomplete interview script of questions, with the researchers required to improvise, as and when necessary (Myers & Newman, 2007). The reasons behind choosing to conduct semi-structured interviews in our research include the fact that these types of interviews are "neither an open everyday conversation nor a closed questionnaire" (Kvale & Brinkmann, 2009, p. 27). This allowed us to conduct the interviews in an open manner, whilst ensuring that they remained directly rooted to the study's overall objective (Kvale & Brinkmann, 2009). Semi-structured interviews are also flexible, which helped us to obtain the required detailed information regarding the BA phase's implementation (Kvale & Brinkmann, 2009).

3.2.1 Interview Guide

We developed an interview guide (as shown in Appendix 2) in order to ensure that we had the necessary guidance to conduct our interviews. We also ensured that the developed interview questions within the guide addressed knowledge production, whilst also creating a good interview interaction (Kvale & Brinkmann, 2009). The developed guide essentially acted as a template for the task of performing our interviews. The guide itself consisted of a series of questions that directly related back to our research objective of conducting a comparison between TOGAF's specified guidelines for implementing BA and the practical steps followed when implementing this phase within an Enterprise Architecture project. The guide's questions were sorted into three different categories; namely, introductory questions, questions relating to TOGAF's specified steps for BA implementation, and concluding with the ending questions that tied everything up and brought proceedings to a close. Additionally, we added a section before the introductory questions in order to set the scene and ensure that the interviewees were well aware of what the interview would encompass.

The purpose of the introductory questions was to make the interviewees feel more comfortable with the ensuing conversation. By starting the interview with questions that were straightforward for the interviewees to answer, this enabled the interviewees to ready themselves for the upcoming questions (Kvale & Brinkmann, 2009). These questions also enabled us to gain more of an insight into the background of each of the interviewees, allowing us to establish how they worked with the concept of EA. Each of the questions that were in the subsequent category of TOGAF's steps for implementing the BA phase, were directly linked to the steps provided by TOGAF. These questions formed the essence of our study as they enabled its comparison to be made. The ending questions were used in order to

tie everything up and ensure that we had all of the necessary information to progress with our research study (Kvale & Brinkmann, 2009). We also made a point of asking the interviewees whether or not they wanted to remain anonymous, as they may have had a change of heart in this regard as a result of what they said during the interview (Israel & Hay, 2006).

3.2.2 Selecting the Interviewees

We conducted a series of five interviews with experts operating within the Enterprise Architecture field in Sweden (Gothenburg and Lund) and Denmark (Copenhagen). This was done in order to obtain the necessary information for a comparison to be made regarding the practical implementation of the BA phase within EA. We established contact with a number of companies that had Enterprise Architects as employees within them, with the goal of securing interviews with these Architects. We ensured that we only targeted companies that had personnel with substantively significant experience within the EA domain, in addition to specific TOGAF related expertise. Personnel within five organisations were finally secured for interviews. An overview of the interviewee backgrounds and their associated organisations is detailed below:

Biner Consulting



Tobias Ivarsson currently operates as a Consultant at Biner Consulting. His past experiences include working as a Senior Enterprise Architect at a large, multinational company. Biner is a consultancy that specialises in Change Management and Enterprise Architecture. The company was started in the year 2000, and today has around 25 consultants based in Stockholm and Gothenburg. Biner's consultants use a number of well known methods and techniques in their work with Change Management and Enterprise Architecture. With their experience, relationships with clients and passion, they have developed their own methodology for how to drive effective change. This experience has enabled them to build their own standards and methods within Enterprise Architecture. (Biner, 2012)

Acando



Anders Arvidsson is currently an Enterprise Architect at Acando. In the past he has worked as an Enterprise Architect as well as a Project Manager at well renowned, global companies. Acando is a consultancy company that, in partnership with its clients, identifies and implements sustainable business improvements through information enabled by technology. Acando's task is to acquire a comprehensive view of the client's business and ensure that each project yields rapid and improved results. The client-base is broad, and includes small businesses, large corporations and public authorities. Acando's most important business partners are Microsoft and SAP. Annual turnover exceeds EUR 170 million and the Group employs approximately 1,000 professionals across five European countries. (Acando, 2011)

Nordea



Jesper Lippert currently operates as a Business IT Architect within Nordea's Danish offices in Copenhagen. Nordea is the largest financial services group in the Nordic and Baltic Sea region. Nordea is the player in the region which has made the most significant progress in terms of integrating banking and insurance activities across national boundaries. All activities are conducted under one single operating model, but with unique diversification. Nordea has 11 million customers and approximately 1,400 branch offices in nine home markets. Moreover, Nordea is one of very few European banks with an AA- rating, and is among the ten largest universal banks in Europe in terms of total market capitalisation. (Nordea, 2012)

BaneDanmark



Anders Lövberg currently works as a Chief Architect in Enterprise Architecture at BaneDanmark. He has an extensive past experience within the Swedish Armed Forces. BaneDanmark, Rail Net Denmark, provides the foundation that makes it possible for trains to run in Denmark. Bane ensures that the trains remain on track 24 hours a day, all year round. Rail Net Denmark is responsible for 2,323 km of railway tracks. Approximately 3,000 trains run on the rail network every day. That adds up to almost 1 million trains a year. On a daily basis, Bane is responsible for 40,000 arrivals and departures at stations all across Denmark. More than 170 million passengers and 15 million tons of freight are transported annually on their network. (BaneDanmark, 2012)

Symfoni



Morten Stender is the Director of Strategy and Enterprise Architecture at Symfoni. Symfoni is the leading collaboration and IT management specialist in Northern Europe. The company's motto is 'better – together'. This is delivered to the customers by combining Symfoni's own collaborative solutions and services with IT management and infrastructure expertise. Symfoni has offices in Norway (headquarters), Sweden, Denmark, Finland, Belgium and Holland, with approximately 200 employees. Additionally, Symfoni has a strong partner network across Scandinavia and Benelux with leading companies such as IBM, HP, ServiceNow and Troux. (Symfoni, 2012)

3.2.3 Interviewing

Once the personnel within the various companies were secured for interviews, we then scheduled meetings at a time of convenience for both parties. All of the interviews were conducted in the English language. A brief overview of our conducted interviews is presented in table 3:1 below:

Table 3:1 Interview Summary

Company	Position	Interviewee		
		Day	Type	Interview Location
Biner	Enterprise Architecture Consultant	March 12, 2012	Face-to-Face	Gothenburg
Acando	Enterprise Architect	March 12, 2012	Face-to-Face	Gothenburg
Nordea	Business IT Architect	March 29, 2012	Telephone Conference call	Lund University
BaneDanmark	Chief Enterprise Architect	April 4, 2012	Face-to-Face	Lund University
Symfoni	Director of Strategy and Enterprise Architecture	April 4, 2012	Face-to-Face	Copenhagen

As may be seen from the above table, all of the interviews were conducted in a face to face manner, with the only exception being the interview conducted with the Nordea representative, which was conducted via a telephone conference call. As previously noted, the interviews were of a semi-structured nature. Semi-structured interviews are said to obtain better results when conducting face-to-face interviews (Kvale & Brinkmann, 2009). With regards to the interview that was conducted via conference call, this was done due to the fact that it was not possible to schedule a face-to-face meeting at a time of convenience to both parties. As such, we decided to hold the meeting via conference call because “a telephone interview provides the best source of information when the researcher does not have a direct access to individuals” (Creswell, 2007, p. 133). We are also aware that telephone related interviews have their drawbacks, which are stated as: “the researcher cannot see the informal communication and the phone expenses” (Creswell, 2007, p. 133). However, in our situation this was the best solution that we had available to us in order to ensure that we obtained the necessary information for our research study.

Although the interview guide acted as an aid throughout the course of the interviews, we did not strictly adhere to its content. Instead, we adopted a technique which entailed asking follow up questions whenever this was deemed appropriate, in order to extract the maximum amount of information from our interviewees (Kvale & Brinkmann, 2009). We also ensured that the interview progressed in the right direction, with the follow up questions consolidating

the key points that we needed to cover for the purpose of conducting our study's required comparison (Kvale & Brinkmann, 2009).

The conducted interviews were recorded by way of an audio recorder, which is the most common way of recording interviews. This method also ensured that each of the interviewees was free to focus on the interview itself, allowing them to answer the posed questions in a comfortable manner. Recording the interviews also had a positive bearing on the subsequent transcription process. In this regard, we were able to rewind the audio recorder as many times as required in order to ensure that we accurately transcribed all of the information gathered. We also decided to take some notes during the interviews to make the information transcription process more accurate. (Kvale & Brinkmann, 2009)

3.3 Data Analysis

Upon the completion of the interviews, we promptly started to transcribe their recordings. The reason for starting the transcription process as soon as possible was that the interview discussions were still fresh in our minds. Also, given the fact that we conducted five interviews, we did not want to leave the transcription process until after we had conducted all of the interviews. Early transcription enabled us to evade having too much paperwork for analysis at any one given time (Kvale & Brinkmann, 2009).

3.3.1 Transcribing the Interviews

Transcription is essentially the first step of the analysis phase (Kvale & Brinkmann, 2009). Kvale describes the process of transcription as follows: "Transcribe means to transform, to change from one form to another" (Kvale, 1996, p. 280). The transcriptions are considered as translations from the oral language to the written form (Kvale & Brinkmann, 2009). The transcription process involves a number of various technical and interpretational issues, which are particularly focussed upon verbatim oral against written style, meaning that a number of choices need to be made in this regard (Kvale & Brinkmann, 2009). We transcribed all of the audio recordings into written text. This was followed by a crosscheck of the transcribed text in order to ensure that each of our written texts was accurately interpreted in the same manner. The process of crosschecking the interview transcripts included sending each transcript through to its associated interviewee, allowing them to check the accuracy of its content. They then went through their transcript, highlighting any discrepancies between its text and the interview's proceedings, enabling us to make changes to each transcript before utilising it within the study.

3.3.2 Coding of the Transcripts (Interpreting)

Data analysis includes the preparation and organisation of the data for analysis, before reducing the data into themes through a process of coding, and representing the data in tables or a discussion (Creswell, 2007). Our coding mechanism was actually designed before conducting the interviews. This corresponds to Kvale and Brinkmann's (2009) statement that the question relating to the analysis of the transcripts should never be asked after the interview's completion. This is due to the fact that "It is too late to start thinking after the interview is done" (Kvale, 1996, p. 276).

Creswell (2007, p.148) mentions that the authors: Madison (2005), Wolcott (1994), and Huberman & Miles (1994) comment "on the central steps of coding the data (reducing the data into meaningful segments and assigning names for the segments), combining the codes into broader categories or themes, and displaying and making comparisons in data graphs, tables, and charts". In general terms, we have adhered to this line of thought by coding the transcripts (as shown in appendix 3), with a code assigned to each of TOGAF's Business Architecture steps (as detailed in table 3:2 below). Finally, we presented our findings in detailed tables (as shown in the 'Empirical Findings' - chapter 4) before also discussing these findings in an analytical manner.

Table 3:2 Data Analysis Coding Mechanism

Business Architecture Steps	Code
Select Reference Models, Viewpoints, and Tools	SV1
Develop Baseline Business Architecture Description	DB2
Develop Target Business Architecture Description	DT3
Perform Gap Analysis	GA4
Define Candidate Roadmap Components	DR5
Resolve Impacts Across the Architecture Landscape	AL6
Conduct Formal Stakeholder Review	SR7
Finalize the Business Architecture	FA8
Create Architecture Definition Document	DD9

The coding mechanism was created on the basis of uniquely identifying each of TOGAF's detailed steps for the implementation of the Business Architecture phase. The codes are comprised of three alphanumeric characters, with the first two characters dedicated to representing the step's name, and the third representing the step's position with respect to the other steps present within this phase: e.g. "Select Reference Models, Viewpoints, and Tools"

is represented by SV1, with S = Selection of, V = Viewpoints (one of the three main components) and 1 = step 1 within this phase. In addition to coding each of the Business Architecture phase's steps with a unique code, line numbers were also added to each of the transcript's lines.

The coding procedure helped us to ensure that we covered all of the main topics that relate to our study, whilst also facilitating the search process within the transcripts, especially given the fact that some of the transcripts were somewhat lengthy. An example of how we coded our transcripts may be seen in table 3:3 below:

Table 3:3 Transcript Coding

Person	Conversation	Code	Line
RE	<i>Could you now please provide us with a brief background of your industrial experience within the Enterprise Architecture field?</i>		2
IE	I am the Director of Strategy and Enterprise Architecture at Symfoni. In the past I have held senior roles at various global corporations.		3
RE	<i>Ok thanks for that. Getting right into the thick of things. TOGAF's first prescribed step in Business Architecture is the selection of reference models and tools. What are the key differences that exist between this step, as prescribed by TOGAF and its practical implementation?</i>	SV1	4
IE	We do use viewpoints or views. My understanding is if you collect data, you want to view it in different relationships. So you want to see what portfolio do I have of requirements and how do they relate to applications. Or how do the applications relate to on-going projects? I can have more views addressing different metadata. We have pre-built reports or visualisations that address the data. It is useful in practice to make things visual. We also do reference models, but we tend to do it more business wide, so we have these capability structures, which are like a reference model, to a certain extent.	SV1	5
RE	<i>Step two in TOGAF prescribes developing the baseline Business Architecture description, is this accurate in terms of its practical implementation?</i>	DB2	6
IE	You would need to develop the baseline, but I would merge these stages (baseline architecture, target architecture and gap analysis). If I am managing a project then there is always someone on vacation or someone who is not here. In reality we just have the overall milestones and what deliverables we have concerning these milestones would make me happy.	DB2	7
RE	<i>Would the next practical step be to develop a Target Business Architecture description, as prescribed by TOGAF?</i>	DT3	8

3.4 Research Quality

This sub-section provides a comprehensive overview of the various elements that were incorporated within this study in order to ensure that it was conducted in the highest possible manner. Firstly, the study's validity is addressed, before its reliability is detailed. Next, the element of bias is described, with details on what was done in order to limit its potentially negative effect on the study. Finally, the ethical elements relating to this study are thoroughly described, offering the reader full transparency with regards to this critical element.

3.4.1 Validity

Validity is pursued with the aim of enhancing a study's quality (Norris, 1997). Having said this, it is important to note that validity enhancing practices do not ensure that research is accurate, correct, certain, trustworthy or objective (Norris, 1997). There are no guarantees from which truths can be derived (Norris, 1997). Validity may be categorised as being internal or external by nature. Internal validity is defined as "the extent to which causal propositions are supported in a study of a particular setting" (Seale, 1999, p. 38). On the other hand, external validity "concerns the extent to which causal propositions are likely to hold true in other settings, an aspect of the generalisability of findings" (Seale, 1999, p. 40).

Regarding the generalisability of our study, TOGAF itself is a framework that is used by Architects around the World. As such, its specific steps that have been utilised within this study will remain the same. Having said this, the study only interviewed a select number of Enterprise Architects from Sweden and Denmark. Consequently, the study's findings are not very generalizable as Architects from different countries may choose to implement the BA phase in a different manner from one project to another.

Regarding internal validity, we questioned the validity of the interview findings in relation to the research question, in order to determine whether or not the findings actually enabled us to answer this question. There are a number of factors that may compromise internal validity; as such we decided to reduce the research study's complexity, and we limited our study to TOGAF, which is one of the frameworks established for Enterprise Architecture. We then also limited our study to the Business Architecture element addressed within this framework. Consequently, this ensured that the study was one, which fully focussed on answering the research question, by conducting the necessary comparison to enable this to be done. Additionally, in order to ensure that the transcripts were fully accurate, we sent each of these transcripts back to the relevant interviewees in order for them to check through their content, highlighting any discrepancies or misunderstandings within them.

With regards to external validity, we carried out a series of five interviews in order to obtain the necessary information that enabled our research study to be completed. Considering the question at hand and the information that we needed to fully answer this question, we decided that five interviews would suffice. We were faced with the dilemma between conducting more interviews in order to gain more information, and managing the increasing number of

interviewees that needed to be interviewed, along with the transcription process that followed (Kvale & Brinkmann, 2009). With this in mind, we decided to stop interviewing once we felt that we had the necessary information (in terms of quality and quantity) in order to fully answer our research question.

3.4.2 Reliability

There are a number of different ways within which reliability may be addressed (Silverman, 2005). In order for us to enhance the reliability of our study, we obtained detailed field notes, by means of ensuring that we fully recorded all of the interviews, and then went on to transcribe these, ensuring that we covered all of the pauses and overlaps present (Creswell, 2007). Questions are often raised regarding reliability in interview research (Kvale & Brinkmann, 2009). We re-listened to all of our interview recordings twice over, with the objective of identifying and removing discrepancies (i.e. mishearing, misinterpretations) that were present due to the poor recording quality that was present in certain passages (Kvale & Brinkmann, 2009). For instance, the line noise within the Nordea interview, which was conducted via telephone conference call, made the transcription of certain segments more of a challenge. Owing to this, we had to re-listen to these passages carefully in order to ensure that our transcript was reliably accurate.

Additionally, we ensured that our study was structured, detailed and open from start to finish. This was done by explaining the process used (what) and the reason behind its use (why). Our aim is to enable other researchers to use certain elements from within our thesis in future studies, with the option of conducting a full overall replication of our study, also made available to them. (Seale, 1999)

3.4.3 Bias

‘Bias’ is an ambiguous term, which enables it to be perceived in a number of different ways. For example, Khilnani’s terminology sees bias in a positive light. Having said this, bias is generally viewed as a negative feature, as something that can, and should be avoided by the researchers conducting a qualitative study. There are a number of different types of bias, with one of the most common sources cited as being that of commitments, which form a direct part of the research process. For the purpose of our study, bias was dealt with as a negative feature that we avoided to the greatest possible extent. (Hammersley & Gomm, 1997).

It is important to note that there are a number of potential sources of bias in any research study. These will vary considerably, from selection biases that relate to the selection of questions and personnel, right the way through to the ability of the researchers to apply their knowledge and existing skills to the topic being studied (Norris, 1997). For our study, we ensured that introspection and analysis of all the content was conducted, in line with Norris’ (1997) suggestions for coping with research bias. This involved re-reading and cross-examining various elements of our work such as the interview guide, the coding mechanism utilised and the transcripts, in order to ensure that all of these were coherent whilst also

directly relating back to the research question in an unbiased manner. An example in this regard is the interview guide, which was checked a number of times by both researchers in order to ensure that every question detailed within it was directly related to our research question, whilst also being of the non-personal nature and expressed in a non-biased manner. This in turn meant that the interviewees were able to answer all of the questions in a free and open manner, as they did not feel that we were leading them towards answering the questions in a certain pre-specified and biased way.

It is also important to note that people may suffer from a ‘bias blind spot’, which is basically the conviction that one’s own judgements are less susceptible to bias than the judgements of others (Ehrlinger et al., 2005). However, the same article also states that: “This does not imply that people never acknowledge that their own judgements are biased.” (Ehrlinger et al., 2005, p.690). In overall terms, we have done our best to ensure that bias was minimised throughout the study. We did not allow any of our pre-determined thoughts or perceptions on the subject matter to play any part in the study’s findings, whilst also conducting all of our work in an open manner, which was open to scrutiny from the internal and external stakeholders associated with the study. Having said this, we acknowledge the point that “Researchers are fallible. They make mistakes and get things wrong. There is no paradigm solution to the elimination of error and bias. Different forms of research may be prone to different sources of error, but clearly none are immune” (Norris, 1997, p. 173).

3.4.4 Ethics

As stated by Kvale & Brinkmann (2009), ethical issues are encountered during the development of an interview investigation. These issues should be considered from the very start of the research study right the way through to the final report findings. During our study, we discussed the interview content with all the interviewees, before conducting the interviews. The main aim of this action was to provide them with an overview of the reasons behind conducting the interview.

Confidentiality implies that the private data of the interviewees is not disclosed under any circumstances (Kvale & Brinkmann, 2009). Before conducting the interviews, the interviewees were asked if they agreed to the recording of the interview. Also, regarding the ethical side of this particular study, the interview guide contained only very specific questions that relate to our study in a direct manner without including any personal questions that put the interviewees in a compromising position.

We followed Kvale & Brinkmann’s (2009, p.72) guidance, which states: “If a study will publish information that is potentially recognised to others, the participants should agree to the release of identifiable information”. With this in mind, we decided to contact the interviewees and enquire about the permissibility of using their personal names along with their company names and logos within our thesis. Our enquiries resulted in all of the interviewees agreeing to the publication of their names and referenced company information within this study.

4 Empirical Findings

This chapter provides an examination of the thesis' empirical findings that were obtained as a result of conducting a series of five interviews with experienced Enterprise Architects across Sweden and Denmark. Themed tables that present the results obtained for each of the questions asked to the interviewees are shown, with an overall analysis also incorporated beneath each of these questions, concisely detailing the key findings.

4.1 Select Reference Models, Viewpoints, and Tools

There were some common themes derived across the conducted interviews (as shown in Table 4:1). First, the concept of viewpoints was mentioned in a positive light within three of the five interviews. The respondents emphasised the importance of viewpoints as a useful concept during the implementation process of an EA project. The respondents each had their own justifications for viewing the concept of viewpoints positively, with the Bane respondent citing the point that "different viewpoints can be used to make questions to the people such as the system users or customers, and also the people designing the corporate requirements on the economical side" (A. Lövberg BaneDanmark, 2012). Additionally, Symfoni's respondent stated that "It is useful in practice to make things visual" (M.Stender Symfoni, 2012).

Two of the respondents were of the view that information modelling should be carried out early on when implementing this step, with Biner's respondent stating that "One of the things that is not clearly defined in TOGAF is the fact that quite often you might need to do some early information modelling" (T. Ivarsson Biner, 2012). The respondent at Acando also agrees with the respondent at Biner, stating that "You need to do some sort of Information model first" (A. Arvidsson Acando, 2012). Moving onto the project development model, Nordea's correspondent's emphasis the point that "these (models) were mentioned well before TOGAF came into our minds" (J. Lippert Nordea, 2012). Finally, the respondent at Symfoni also talks about the TOGAF prescribed reference models that are a part of this particular step. In this regard he states that "We also do reference models, but we tend to do it more business wide" (M.Stender Symfoni, 2012).

Table 4:1 Question One Findings

Question 1				
Starting with TOGAF’s first prescribed step in Business Architecture; what are the key differences that exist between this step, as prescribed by TOGAF and its practical implementation?				
Biner	Acando	Nordea	BaneDanmark	Symfoni
<ul style="list-style-type: none"> You normally don’t start here; start by looking at how we are going to gather information. You may require some early information modelling Use the same terminology. 	<ul style="list-style-type: none"> I like to use viewpoints, they have usually been accepted. You need to do some sort of information modelling first. Terminology is vital here, and is based on what is extracted from the processes. 	<ul style="list-style-type: none"> We have the project development model where we also work with TOGAF - like artefacts. Don’t believe that one size fits all in these decisions or situations. You will need some fast-track models, mainly of the project nature. 	<ul style="list-style-type: none"> The viewpoints are important and required during implementation. Different viewpoints are used to make questions to different people. Different viewpoints provide with you pros and cons. 	<ul style="list-style-type: none"> We do use viewpoints or views. Multiple views can be used to address different metadata. It is useful in practice to make things visual. Reference models are used in more of a business wide manner.

4.2 Develop Baseline Business Architecture Description

Regarding the second step prescribed by TOGAF, which addresses the baseline architecture description's development; the respondent at Biner emphasised that there is no real difference between this step's prescription and its practical implementation. Another of the respondents stated that "the baseline stuff, not so very important usually" (Acando, 2011), which indicates that this Enterprise Architect would like to see this step receiving less attention in the grand scheme of things, when it comes to developing the baseline for the Business Architecture. The third respondent emphasised the point that "you also do your baseline considering the existent gaps" (J. Lippert Nordea, 2012), which is not directly mentioned as part of TOGAF's prescribed steps for the implementation of this phase.

Although the remaining two respondents were both of the view that the Baseline Architecture needed to be developed, they both also had their reservations when it came to implementing this step in relation to TOGAF's prescribed guidelines. The respondent from BaneDanmark was of the opinion that, focus should be placed on unanswered question such as "what do we try to solve?", "what kind of effects and business value are we going to present with this solution?" (A. Lövberg BaneDanmark, 2012). Meanwhile, the respondent at Symfoni emphasised that he would personally merge the Baseline Business Architecture Description, Target Business Architecture Description, and Gap Analysis steps together in order to form one comprehensive step. This was mainly related to the fact that, as a project manager "if I am managing a project, then there is always someone on vacation or someone that is not here" (Symfoni, 2012).

Table 4:2 Question Two Findings

Question 2				
Step two in TOGAF prescribes developing the baseline Business Architecture description, is this accurate in terms of its practical implementation?				
Biner	Acando	Nordea	BaneDanmark	Symfoni
<ul style="list-style-type: none"> There is no real need to change this step. 	<ul style="list-style-type: none"> The baseline stuff is not usually important. Usually, people have a pretty good grasp in their heads of where things are. 	<ul style="list-style-type: none"> We are not currently working in a strict TOGAF manner. The baseline is done considering existing gaps, with a view of where changes are expected. 	<ul style="list-style-type: none"> Focus more on answering: What we try to solve? What kind of effects and business value are we going to present with this solution? 	<ul style="list-style-type: none"> I would merge these stages (baseline architecture, target architecture and gap analysis). If I am managing a project then there is always someone who is not here. We just have the milestones and related deliverables.

4.3 Develop Target Business Architecture Description

The respondent from Biner emphasised the necessity to “find a way to merge the baseline and the target into one discussion” (T. Ivarsson Biner, 2012). This corresponds to the answer provided by Symfoni’s respondent for the previous question, where he said that he would also like to see the Baseline, Target and Gap Analysis steps merged into a single one. In this case, Biner’s respondent stated that the practical reason behind this is that that it may not always be possible to meet the necessary people associated with the project as many times as required, which is basically the same reason cited by Symfoni’s respondent in the previous question.

Overall, this step was viewed as one of the more essential ones with regards to implementing the Business Architecture Phase within TOGAF, according to the Enterprise Architect operating at Acando. Nordea’s respondent also agreed with the respondent at Acando, stating that the Target Architecture is a useful step that plays a vital role in enabling a Gap Analysis to take place. Similarly, the Enterprise Architect at BaneDanmark was also of the view that the Target Architecture step is a vital one with regards to implementing the Business Architecture phase in TOGAF. In this regard, he stated that “You should place more emphasis on the target than the baseline” (A. Lövberg BaneDanmark, 2012). Having said this, the respondent at Symfoni viewed this step as more of a continuum, stating that: “When I implement I make small changes, and likely I won’t get to the ‘to be’ state” (M.Stender Symfoni, 2012). He then went on to state that because of this, it is practically impossible to conduct a Gap Analysis between the current state and a currently unknown future state.

Table 4:3 Question Three Findings

Question 3				
Would the next practical step be to develop a Target Business Architecture description, as prescribed by TOGAF?				
Biner	Acando	Nordea	BaneDanmark	Symfoni
<ul style="list-style-type: none"> • Merge the baseline and the target into one discussion. • Merging the baseline and target would be useful because you might not be able to gather the people you need as many times as you would like. 	<ul style="list-style-type: none"> • It is usually the visionary part that is interesting. 	<ul style="list-style-type: none"> • It is useful to have this, along with the baseline architecture in order for a gap analysis to take place. 	<ul style="list-style-type: none"> • You should place more emphasis on the target than the baseline when implementation takes place. 	<ul style="list-style-type: none"> • I see this more as a continuum. When I implement I make small changes, and likely I won’t get to the ‘to be’ state. • So how can we do a gap analysis between where we are today and a currently unknown future state?

4.4 Gap Analysis

When implementing the Gap Analysis step of the Business Architecture phase, all of the respondents stated that they view this step as one of the more crucial ones. The respondent at Biner states that “this is one of the key concepts of TOGAF that really enforces the model” (T. Ivarsson Biner, 2012). Having said this, an important point to note with regards to this step is that its formality may vary. According to the respondent at Acando “the smaller clients usually are capable of doing that gap analysis in their heads, or doing it pretty manually” (A. Arvidsson Acando, 2012), meaning that it may be done in a more informal manner (than the one prescribed by TOGAF).

The Gap Analysis may also be used to make suggestions where changes would need to be done. From this perspective, the existing gaps may be said to act as the driving force behind the project, according to the respondent at Nordea. Despite the step’s importance, two of the respondents also cited problems that may be encountered during the step’s implementation. One such problem that the respondent at BaneDanmark cited was that he had seen far too many personnel overly focusing on the situation at hand, rather than focusing on the architecture’s outcome. Meanwhile, the respondent at Symfoni, also cited similar problems from a tools perspective by stating that “I see many more tools act a lot more on the ‘to be’ state while we use more of a lifecycle approach ourselves” (M.Stender Symfoni, 2012).

Table 4:4 Question Four Findings

Question 4				
TOGAF goes on to propose the concept of separating the baseline and target architectures before analysing the gaps that exist between the two; would this actually be done in practice?				
Biner	Acando	Nordea	BaneDanmark	Symfoni
<ul style="list-style-type: none"> One of the key concepts of TOGAF that enforces the model. When you get to the planning phases, the whole idea is to ensure that you understand the gaps across all the domains. 	<ul style="list-style-type: none"> Smaller clients usually are capable of doing the gap analysis in their heads or manually, without having lots of analysis on the baseline. 	<ul style="list-style-type: none"> Gap analysis suggests where changes need to be made. You will have different changes and gaps in all the different dimensions. 	<ul style="list-style-type: none"> People tend to focus too much on the current situation instead of focussing on the next steps or outcome of the architecture. The focus should be placed upon what will be solved, which is more relevant than working on “what we have”. 	<ul style="list-style-type: none"> Gap analysis causes issues. I see many more tools act a lot more on the ‘to be’ state while we use more of a lifecycle approach. There could be migration issues and visualising these – How do we do that?

4.5 Define Candidate Roadmap Component

Two of the five respondents were of the opinion that although this was not a central step within the Business Architecture phase's practical implementation, in practical terms it would not be implemented as strictly as prescribed by TOGAF (M.Stender Symfoni, 2012; J. Lippert Nordea, 2012). Additionally, the scope or footprint of what needs to be done within this step is said to depend on the size of the project, according to the respondent in Acando. This is in accordance with TOGAF's guidelines for the phase which stipulate that the level of detail within this phase's steps will depend on the scope and goals of the overall architecture effort (The Open Group, 2011b).

Iterations are another key theme highlighted within this step. BaneDanmark's respondent focuses on the concept of iterations in his answer to this question. He states that: "if you go step by step, when you go to landscape you get stuck" (A. Lövberg BaneDanmark, 2012). This highlights the importance of iterations within the Business Architecture phase's implementation, with a specific emphasis placed on their importance within this particular step's implementation. If iterations are not incorporated then the Architect may get stuck implementing this step. The respondent at Biner emphasises the point that the architect implementing this step may be required to formulate statements regarding planning and costs early on in the architecture project's implementation (T. Ivarsson Biner, 2012).

Table 4:5 Question Five Findings

Question 5				
The next TOGAF step prescribes defining the candidate roadmap components in order to prioritise activities over the coming phases. What do you think about this from a practical perspective?				
Biner	Acando	Nordea	BaneDanmark	Symfoni
<ul style="list-style-type: none"> When presenting new projects, costs and risks should be addressed early on, but TOGAF would leave this until the E and the F phases. Assumptions are sometimes required for planning. Cost assessments also need to be made, although they are not part of the Candidate Roadmap. 	<ul style="list-style-type: none"> This is pretty much it in the basic order of things. Changes will depend on the scope, the Project, the size of the change and the impact any project's deployment will have. 	<ul style="list-style-type: none"> You do have some good ideas of what could be done here How you do things is where you may have differences because you have different approaches of getting things done. 	<ul style="list-style-type: none"> Iterations are present in this step. When a step is done, you have to go back and present a first final result, and go back to the viewpoints again. If you go step by step, when you go to landscape you get stuck. 	<ul style="list-style-type: none"> We don't do it this rigidly, but it is a good checklist to have.

4.6 Resolve Impacts across the Architecture Landscape

According to the respondent at BaneDanmark, the landscape will only be valid for a short period of time. His main reason behind making this statement is mainly due to the fact that technology shifts take place within the landscape on a pretty frequent basis, both in terms of hardware and software. Accordingly, new projects are constantly arising, which in turn will result in the project landscape being affected.

The respondent at Symfoni stated that the main issue with this step relates to ensuring that the business personnel understand the impact. This is an issue due to the fact that “the soft skills of TOGAF are not well addressed” (M.Stender Symfoni, 2012). The remaining three respondents agree upon the fact that the points provided by TOGAF for implementing this step provide the architect with a good checklist of tasks to carry out within the implementation process. Having said this, the respondent at Acando states that most of the focus should be placed on processes, while the respondent at Nordea states that the main trick here is to figure out how you want to work with, and implement TOGAF’s specified steps.

Table 4:6 Question Six Findings

Question 6				
TOGAF also prescribes identifying any impacts that the Business Architecture has on pre-existing architecture, with a plan for identifying and resolving impacts put in place. Would this be the case when practically implementing an EA project?				
Biner	Acando	Nordea	BaneDanmark	Symfoni
<ul style="list-style-type: none"> This is pretty accurately defined by TOGAF. You would be doing this in practice. 	<ul style="list-style-type: none"> This would be done; however, you would usually mostly focus on processes. 	<ul style="list-style-type: none"> This step is a good checklist. However, like the other steps, you have to figure out how you want to work with it and document it. The process tells you what to do but not how to do it. 	<ul style="list-style-type: none"> Technology will shift within the landscape: every 6 months the Hardware and every 2 years the Software. The landscape is only valid for a short period of time. 	<ul style="list-style-type: none"> The business’ personnel need to understand the impact. TOGAF’s soft skills are not well addressed. This is a good checklist to have, but it would need to be adapted.

4.7 Conduct Formal Stakeholder Review

The step of conducting a formal stakeholder review is another one of BA's central implementation steps. One theme that may be derived from the respondent answers to this step's question is the visualisation one. More specifically, four of the five respondents placed emphasis on the importance of actually showing the stakeholders the value or benefits established as a result of EA. The respondent at Biner said that a potential issue that needs to be addressed within this step's implementation is that the stakeholders may not always be able to directly see the benefits of an EA project. Meanwhile, the respondent at Acando also emphasised the need to show the positive benefits to the relevant stakeholders, with the respondent at Nordea also concurring with his fellow architect at Acando's opinion on this matter. The respondent at Symfoni also agreed with the other respondents by stating that "The important thing here is getting people on-board. One of the main ways of doing this is to show them something" (M.Stender Symfoni, 2012).

The importance of managing the stakeholders and their viewpoints is another concept that is mentioned in two of the respondents' answers. Biner's respondent states that it is essential to "Understand how you can manage the differences between the different stakeholders regarding the scope" (T. Ivarsson Biner, 2012). BaneDanmark's respondent is in agreement with this, and states that "problems arise whenever the stakeholders say opposite information to others' requirements" (A. Lövberg BaneDanmark, 2012). Finally, terminology's use is also mentioned by Acando's respondent who states that: "It would be quite helpful to be closer to the business language for TOGAF" (A. Arvidsson Acando, 2012).

Table 4:7 Question Seven Findings

Question 7				
Another of TOGAF's prescribed steps advocates conducting a formal stakeholder review. Would you actually do this when implementing an EA project?				
Biner	Acando	Nordea	BaneDanmark	Symfoni
<ul style="list-style-type: none"> • TOGAF could emphasise more on the stakeholder management. • Differences between different stakeholders need to be managed. • Stakeholders may not necessarily see the immediate benefits. 	<ul style="list-style-type: none"> • It would be helpful to be closer to the business language for TOGAF. • There is very little talk about the positive benefits; it is more about removing the negative details. 	<ul style="list-style-type: none"> • This step is quite sound; most organisations that work with transformation within projects work like this. • TOGAF's value needs to be determined and shown to the relevant stakeholders as soon as possible. 	<ul style="list-style-type: none"> • If you gather all of the different stakeholders in a room then it becomes very hard to get a grip of what all their requirements are. • Problems arise when stakeholders say opposite information to others'. • It is crucial to present the right information to the right stakeholder. 	<ul style="list-style-type: none"> • The important thing to note here is getting people involved, which may be achieved via visual means. • Increments are also useful, especially in long term projects as they allow milestones to be shown to stakeholders upon their completion.

4.8 Finalize the Business Architecture

All of the respondents concur with one another's views on the general accuracy of this step's details, as prescribed by TOGAF. They all agree that the step's guidelines would generally be followed when implementing this step. Biner's respondent also adds that the task of evaluating business capabilities is a rather prominent one within TOGAF, although it is not directly mentioned within this step's prescribed guidelines. He goes on to state that "that (the business capability evaluation step) is definitely one of the things I would focus the most on" (T. Ivarsson Biner, 2012).

Two of the respondents also emphasised the importance of making TOGAF 'your own' by mentioning the point that the architect responsible for implementing the Enterprise Architecture project would need to figure out exactly how to carry the prescribed guidelines out (J. Lippert Nordea, 2012; A. Lövberg BaneDanmark, 2012). Finally, the respondent at Symfoni re-enforced the point that the guidelines would not typically be followed as rigidly as they appear on paper (M.Stender Symfoni, 2012).

Table 4:8 Question Eight Findings

Question 8				
One of TOGAF's last prescribed steps for Enterprise Architects to carry out in this phase requires finalising the Business Architecture. In practice, would you do this, as prescribed by TOGAF?				
Biner	Acando	Nordea	BaneDanmark	Symfoni
<ul style="list-style-type: none"> • Yes I would follow this step's guidelines. • TOGAF focuses quite a lot on evaluating business capabilities. 	<ul style="list-style-type: none"> • The steps that TOGAF provide are pretty much what you would be doing here. 	<ul style="list-style-type: none"> • This step is quite sound, however, the trick is in how you would actually do it. 	<ul style="list-style-type: none"> • You have to make it yours and in that way you can use the 'what' but not the 'how'. • You have to fill in that information on how you are going to do it yourself. 	<ul style="list-style-type: none"> • Yes this would be done. It looks fine, but like with all the other steps, it would not be done as rigidly as stated on paper.

4.9 Create Architecture Definition Document (ADD)

Terminology plays a prominent role within this step's practical implementation, with two of the five respondents directly referring to this concept as one that needs to be addressed when implementing this step. The respondent at Acando stated that "You are very seldom using the same terminology, as is used in TOGAF, and this is usually fine" (A. Arvidsson Acando, 2012). Additionally, BaneDanmark's respondent expanded upon this point by stating that an evolved company allows the same type of terminology to be used within it, along with the same documentation that TOGAF specifies (A. Lövberg BaneDanmark, 2012).

The documentation of an Enterprise Architecture project may be done in a number of different ways, with Nordea's respondent stating that "You could document things in a range of applications, from (Microsoft) Word to PowerPoint" (J. Lippert Nordea, 2012). The documents themselves are also said to be the focus of an Enterprise Architecture project's initiation (T. Ivarsson Biner, 2012), with a number of the respondents also emphasising the point that the documents prescribed by TOGAF are usually adapted in practice (A. Arvidsson Acando, 2012; J. Lippert Nordea, 2012; M.Stender Symfoni, 2012).

Finally, the theme of project management also arises in two of the five respondent answers to the question regarding this step's implementation. In this respect, Symfoni's respondent states that although he personally deviates from the production of TOGAF's prescribed documents, "They would be required from a project management perspective" (M.Stender Symfoni, 2012). He then goes on to state that the produced documents would be checked in order to determine whether or not they are used in Prince II (project management methodology). In this respect, the respondent at BaneDanmark states that "If you have a project driven organisation method, they do not use this kind of methodology. They'll use maybe Prince II" (A. Lövberg BaneDanmark, 2012).

Table 4:9 Question Nine Findings

Question 9				
Creating the Architecture Definition Document is the final step detailed by TOGAF within the Business Architecture phase. In practice, is this document produced using the methodology specified by TOGAF?				
Biner	Acando	Nordea	BaneDanmark	Symfoni
<ul style="list-style-type: none"> • More focus should be placed on developing a document and plan and maybe also the communication plan. • The ADD would be one of the documents to be produced. 	<ul style="list-style-type: none"> • All documents are usually adapted and changed • They are good as inspiration but TOGAF's terminology is not always used in practice. 	<ul style="list-style-type: none"> • The Architect needs to establish how they want to work with TOGAF and how they want to document it. • The architecture documents in the TOGAF 'bible' are not always very good templates to start with. 	<ul style="list-style-type: none"> • Evolved companies permit the use of common terminology, with this kind of document. • On the other hand, project driven organisations do not use this. Instead, they may use prince II, the project initiation document. 	<ul style="list-style-type: none"> • I don't produce these documents myself. They would be required from a project management perspective.

5 Discussion

This chapter provides a more in-depth analysis of the results obtained through the empirically conducted investigation. The findings obtained from the five conducted interviews are related back to TOGAF's prescribed steps for the implementation of the Business Architecture phase within Enterprise Architecture. The discussion itself has been divided into seven separate fragments, as detailed below.

5.1 Select Reference Models, Viewpoints, and Tools

The findings from the interviews reveal that all the respondents are positive in stating that viewpoints are crucial whenever it comes to the implementation process of the steps within TOGAF's Business Architecture phase. However, it is important to note that these viewpoints are not easy to manage during the implementation process. As stated by the interviewee from BaneDanmark, different viewpoints can be obtained during the meetings with stakeholders, which lead us to have pros and cons (A. Lövberg BaneDanmark, 2012). For instance, it is beneficial having different viewpoints since it provides an overview of the different units within the enterprise, which work together to achieve a common goal. However, having different viewpoints can also be detrimental, as it is complicated to manage all these potentially differing viewpoints at the same time. Accordingly, TOGAF states that viewpoints enable the architect to demonstrate how the stakeholder concerns are addressed whilst the Business Architecture implementation takes place (Josey, et al., 2011; The Open Group, 2011b).

Relating this back to the research question proposed in this thesis, the differences between TOGAF's first prescribed step for the Business Architecture phase and the Business Architecture's practical implementation are that TOGAF's first step is explained in general terms. It states that, for every viewpoint, the models needed must be selected in order to support the specific view, which is required during the implementation done by selecting a tool or method (The Open Group, 2011b). Having said this, two of the interviewees stated that TOGAF's first step is not clear with regards to the terminology used, with the interviewees suggesting that this step should include early information modelling (A. Arvidsson Acando, 2012; T. Ivarsson Biner, 2012).

5.2 Develop Baseline Description, Target Description, and Perform Gap Analysis

For the purpose of this discussion, the ‘Develop Baseline Description’, ‘Develop Target Description’ and ‘Perform Gap Analysis’ steps were merged within this section in order to provide the reader with a more comprehensive outlook of these interrelated steps. The findings obtained from the conducted interviews indicate that the development of the baseline Business Architecture is a necessary step within the implementation of the Business Architecture phase, in accordance with TOGAF’s generally specified guidelines. Although necessary, the overall importance of this step as a stand-alone one was questioned by the interviewee at Acando, who stated that “ok the baseline stuff, not so very important usually” (A. Arvidsson Acando, 2012). In this regard, the interviewee at BaneDanmark went on to state that instead of focussing on the baseline architecture, and getting too caught up in this step, the Enterprise Architect should aim to “focus more on answering the next questions: What do we try to solve?” (A. Lövberg BaneDanmark, 2012).

The step involves the consideration of existent gaps within the enterprise, according to the interviewee at Nordea (J. Lippert Nordea, 2012). These gaps may be pre-existing ones that are highlighted at the time of implementing the baseline Business Architecture description. They may also have been highlighted prior to the Enterprise Architecture project’s initiation. In any case, from a practical perspective, it would make sense to consider the existing gaps when implementing the baseline Business Architecture step. This is mainly due to the fact that the baseline architecture may be produced to a higher degree of accuracy if it is implemented with a view of where changes are expected to be made within the enterprise.

The interviewee at Symfoni also noted that the step: ‘Develop Baseline Description’, should be merged with the following two steps prescribed by TOGAF within the Business Architecture phase (Develop Target Architecture Description and Conduct Gap Analysis) (M. Stender Symfoni, 2012). The reason cited for this particular statement is that whenever he has managed a project, there has always been someone on holiday or someone who is not present. With this in mind, it would be difficult to formally develop a baseline Business Architecture description, as prescribed by TOGAF. As such, the interviewee at Symfoni suggests the adoption of a more project development oriented methodology, with milestones used, along with deliverables, in order to establish and detail any existing gaps, along with the transition from the baseline to the target architecture that ultimately needs to occur. Having said this, it is debateable as to how formal this step’s implementation needs to be, with Acando’s respondent stating that “Mostly people have a pretty good grasp already in their heads of where things are” (A. Arvidsson Acando, 2012).

The development of the Target Business Architecture description is the next step advocated by TOGAF. The interviewee at Biner makes a similar point to the one made by Symfoni’s respondent within the previous step. This is that “it is needed to find a way to merge the baseline and target into one discussion” (T. Ivarsson Biner, 2012). Again, the reason cited

here is that it may not be possible to gather all of the required people as many times as is required for a formal target architecture description to be produced.

Two of the five respondents also made the point that this particular step is usually more important than the baseline Business Architecture description step (A. Lövberg BaneDanmark, 2012; A. Arvidsson Acando, 2012). This is in line with the general consensus obtained in the previous step, where a number of the interviewees highlighted the fact that more emphasis should be placed on the target architecture rather than the baseline. The interviewee at Symfoni also makes the point that, in addition to viewing the baseline architecture from a more project oriented perspective, the target architecture could also be viewed as a continuum, with slight changes made, and then realised throughout. This is a good idea given the fact that the ‘to be’ state may never be reached (M. Stender Symfoni, 2012). As such, doing things the ‘continuum perspective’ way enables the established milestones to be reached, with their results shown to the key stakeholders. This is better than only striving to reach a ‘to be’ target architecture state that may never be reached.

When it comes to the third and final step of this series; ‘Gap Analysis’; this is generally seen as a vital step in the implementation of the Business Architecture phase. In this respect, the interviewee at Biner states that this step “is one of the key concepts of TOGAF that really enforces the model” (T. Ivarsson Biner, 2012). The interviewee at Nordea also enforces this point by stating that “the gap drives the actual project, the gaps are things you need to change, so yes they are very important” (J. Lippert Nordea, 2012). Having said this, the formalisation of this step is again questioned by the interviewee at Acando, who states that “the smaller clients usually are capable of doing that gap analysis in their heads” (A. Arvidsson Acando, 2012). There are also a number of issues that have been cited with regards to this step’s practical implementation. One such issue is that people tend to focus too much on the current situation, instead of thinking about the future steps of what the customer or user wants (A. Lövberg BaneDanmark, 2012). This may be said to correspond with the statement made by the interviewee at Symfoni, who stated that it would be impossible to focus on conducting a gap analysis between the current state and a currently unknown future state (M. Stender Symfoni, 2012).

TOGAF advocates the separation of the three steps; Develop Baseline Business Architecture Description, Develop Target Business Architecture Description, and Performing a Gap Analysis (Josey, et al., 2011). As may be seen from the findings obtained from the conducted interviews, this may not be the most practical way of implementing these steps. It may be more practical to merge the steps together into a comprehensive one that enables a swift establishment of the baseline architecture, before the target architecture is detailed, followed by a gap analysis of these two states. TOGAF also states that the baseline architecture is necessary to support the target architecture (The Open Group, 2011b). Most of the interviewees seem to agree with this as they do state that all of the three steps; Develop Baseline Business Architecture Description, Develop Target Business Architecture Description, and Performing a Gap Analysis, should be implemented. In conclusion, there is a difference between these steps, as prescribed by TOGAF and the means by which they would be practically implemented.

5.3 Define Candidate Roadmap Components

In general terms, the findings obtained with regards to implementing this step indicate that it should be implemented as TOGAF suggests, with a number of modifications made to it in order to enhance its practicality. A key point that was made regarding this step's implementation revolved around the fact that planning and costs are neglected in TOGAF's guidelines for this phase's implementation. In this respect, the interviewee at Biner explains that "When you work through phases B (Business Architecture), C (Information Systems Architecture) and D (Technology Architecture), you often need to say something about the planning and the costs, but if you follow TOGAF by the book you would leave this until the E and F phases" (T. Ivarsson Biner, 2012). This tells us that TOGAF may be holding back on addressing the core concepts of planning and costs for a little too long. It may be too late to address these concepts later on in the ADM cycle, as they really need to be addressed earlier on in the cycle in order to have an idea of the costs involved and the planning that is required for any such project to be deemed a success. By addressing these concepts earlier "you may need to make some assumptions of the planning. This is suggested by the fact that you create a candidate roadmap" (T. Ivarsson Biner, 2012). Having said this, the cost element is not really said to be a part of this suggested roadmap, despite its importance at this stage of the project's implementation.

The scope of the project is another factor that needs to be considered when implementing this step. Three of the five interviewees were of the opinion that although the step formed an essential part of implementing the BA phase, it would not necessarily be implemented in its entirety, with the scope of the project and its impact determining what is, and is not done (A. Arvidsson Acando, 2012; J. Lippert Nordea, 2012; M. Stender Symfoni, 2012). Following on from this point, iterations arise as a concept that may be utilised in order to present the findings, as and when they are completed (A. Lövberg BaneDanmark, 2012). This concept may be used in order to ensure that architects don't find themselves in a situation where they are stuck during the formation of a landscape, which may be the case if they stringently follow TOGAF's guidelines for this step's implementation (A. Lövberg BaneDanmark, 2012). This last point also ties in with the concept of viewpoints which was mentioned in TOGAF's first step, with the interviewee at BaneDanmark stating that "When a step is done you have to go back and present a first result, and then go back to the viewpoints" (A. Lövberg BaneDanmark, 2012). This methodology means that the project's stakeholders would be able to directly see how their viewpoints were addressed by the Architect, whilst also facilitating the architect's job of managing the key stakeholders within an enterprise.

TOGAF states that following the creation of all the three previous steps (Baseline Architecture, Target Architecture and Gap Analysis) a business roadmap should be created in order to prioritise the activities over the coming phases (The Open Group, 2011b). Overall, despite the fact that the interviewees seem to have the same opinion regarding the step's importance, it may be said that the step in its current form is actionable, but lacks the inclusion of cost analysis, whilst also failing to emphasise the importance of scoping and iterations.

5.4 Resolve Impacts across Architecture Landscape

The results obtained by most of the interviewees indicate that this prescribed step, as defined by TOGAF is positively accurate in relation to its practical implementation. Having said this, the interviewee at Symfoni states that this step provides a “good checklist”, although he argues that the business personnel need to understand the impact of the project on the other areas of the enterprise, due to the fact that the soft skills of TOGAF are not well addressed (M.Stender Symfoni, 2012). TOGAF states that the Business Architecture is impacted by other projects, which will simultaneously affect other projects as well (The Open Group, 2011b). Accordingly, the interviewee from Biner states that the landscape is only valid for a short period of time, due to the fact that the technology shifts are occurring rapidly within the landscape. For instance, the interviewee states that “technology shifts that occur within the landscape; every 6 months for the hardware and every 2 years for the software” (A. Lövberg BaneDanmark, 2012). In this regard, the interviewee from Acando suggests that this step must be done when implementation takes place; however, he argues that an intensified focus must be placed upon the processes (A. Arvidsson Acando, 2012).

5.5 Conduct Formal Stakeholder Review

Four of the five interviewees emphasised the importance of showing stakeholders the value or benefits established as a result of implementing an EA project. Biner’s interviewee builds upon this point by stating his opinion that “TOGAF could emphasise more on the stakeholder management in order to appropriately sell your vision” (T. Ivarsson Biner, 2012). This emphasis could be realised by comprehensively managing any existing differences between the different stakeholders with regards to the scope (T. Ivarsson Biner, 2012).

Another key concept that may be derived from the interviewees with regards to implementing this step is visualisation. This concept is of vital importance, along with its associated concept of business terminology. Taking the primary concept of visualisation, the interviewee at Biner makes the point that an issue may arise if the stakeholders that the architect is working with do not see the immediate benefits of the Enterprise Architecture project (T. Ivarsson Biner, 2012). The interviewee at Acando also re-enforces this point by stating that “you need to show the rest of the leverage where you actually produce more value” (A. Arvidsson Acando, 2012). Nordea’s respondent also emphasises the importance of deriving, and then subsequently showing the value that is created as a result of Enterprise Architecture to the relevant stakeholders as soon as possible (J. Lippert Nordea, 2012). Finally, Symfoni’s respondent also concurs with his fellow professionals by stating that “the important thing to note here is getting people involved or on-board. One of the main ways of doing this is to show them something” (M.Stender Symfoni, 2012).

Moving on to the associated element of business terminology; this concept is directly mentioned as one which needs to be focussed upon within this step’s implementation. Acando’s respondent states that “You need to talk like business and not like IT architects;

you need to talk about value and profits” (A. Arvidsson Acando, 2012). This point also relates to the concept of viewpoints which the stakeholders will hold. As such, it is important to note that once all of the different types of stakeholders are gathered in a room for consultation within this phase, the task of actually managing them and their viewpoints is a challenging one (A. Lövberg BaneDanmark, 2012). In this regard, it is important to note the stakeholder’s background and then tailor the terminology used to suit this. For example, business oriented stakeholders won’t want to talk about technology, but would rather talk about Return on Investment (ROI) (A. Lövberg BaneDanmark, 2012).

TOGAF proposes checking the original motivation for the architecture project and the statement of architecture work against the proposed Business Architecture, asking if it is fit for the purpose of supporting subsequent work in other architecture domains (The Open Group, 2011b). The findings for this step show that the step’s practical implementation requires a lot of care, with the architect required to pay attention to the finer details within it. Stakeholder management is a key issue that needs to be addressed, with terminology playing a prominent role. In general terms it only makes sense that people understand the language that they typically tend to speak; because of this, it is vital that the key people related to the project (the stakeholders) are spoken to in a language that they fully comprehend, in order to get them on board and fully behind any such project implementation.

5.6 Finalise the Business Architecture

This step is a comprehensive one, with its practical guidelines seen by all interviewees as being pretty accurate when it comes to implementing this phase. Having said this, the interviewee at Biner makes the point that, in general terms TOGAF focuses quite a lot on the business capabilities, which are not directly mentioned as part of this step’s implementation (T. Ivarsson Biner, 2012). Another key concept that may be derived from the interviewee responses with regards to this step’s implementation is the personalisation one. Two of the interviewees focussed on the fact that TOGAF, in general, and this step in particular need to be personalised and ‘made your own’. In this regard, Nordea’s respondent states that “the trick is in how you would do this step” (J. Lippert Nordea, 2012). The respondent at BaneDanmark also goes on to state that the step should be incorporated and utilised like any standard would be, by “taking it and making it yours” (A. Lövberg BaneDanmark, 2012).

TOGAF states that this step should include the finalisation of all the work products, which include the Gap Analysis results (The Open Group, 2011b). As may be seen from the interviewee responses to this step’s question, the step, as currently detailed by TOGAF, is an actionable one with the key lying in the methodology that is used to actually implement the step. In essence, the details regarding the ‘what’ seem to be fairly accurate in this case, from both a theoretical and practical perspective. Having said this, the key is in establishing a methodology for the ‘how’ part of implementing this particular step.

5.7 Create Architecture Definition Document (ADD)

TOGAF states that during this step, the business sections of the Architecture Definition Document must be prepared (The Open Group, 2011b). These are comprised of the following documents: A business footprint; a detailed description of business functions and their information needs; a management footprint; Standards, rules and guidelines showing working practices, legislation, financial measures; and a skills matrix and set of job descriptions (The Open Group, 2011b). In general, the findings obtained during the interviews reveal that the step is positively actionable, although the interviewees suggested making several changes to this step. Accordingly, two out of five interviewees suggest that the last step of the BA phase must be addressed. The interviewee from Acando suggests that the creation of documents are good as an inspiration, however these documents are usually adapted and changed, with differences in terminology not seen as a major issue (A. Arvidsson Acando, 2012).

The same point is addressed by the interviewee at BaneDanmark, who states that if the company you are working with as an Enterprise Architect is evolved, having an architecture baseline, framework, and people working as architects, then it is possible to use the same kind of terminology and documentation (A. Lövberg BaneDanmark, 2012). He also goes on to state that the documents specified by TOGAF may not be required in Project driven organisations (as they may use more project oriented Prince II documents instead). Therefore, terminology plays a prominent role during the creation of the ADD.

The interviewee at Symfoni states that, in general terms, as an Enterprise Architect “I don’t produce these documents myself. They may be required from a project management perspective” (M.Stender Symfoni, 2012). When read after the statement made by the interviewee at BaneDanmark, these statements seem contradictory; however, a high level analysis provides a more coherent explanation of both interviewee answers. In essence, the interviewee at Symfoni is stating that the documents, as described by TOGAF, are not usually required in their formal presence within EA projects that he has undertaken, but they may be required from a project management perspective. The interviewee at BaneDanmark goes along with this view by stating that the documents specified by TOGAF may only utilised by Enterprise Architects working with companies that have a specific environment, whilst being rather evolved in their nature (A. Lövberg BaneDanmark, 2012). This statement doesn’t mean that these documents are always used by Enterprise Architects, even when the conditions permitting their use are present.

Additionally, the respondent at Symfoni states that the documents specified by TOGAF may be needed from a project management perspective, while the respondent at BaneDanmark states that they wouldn’t (exactly as TOGAF specifies). As such, it could be the case that the documentation used (by project oriented organisations) is sometimes adapted so that it closely resembles more project specific documents, such as Prince II ones. In this respect, the respondent at Symfoni sheds more light on this matter by stating that “We have the information, so for the project we carve this out, or what is needed from it and put it in documents, which are then shared as part of the Prince II project management approval process” (M.Stender Symfoni, 2012). This (along with other answers by Symfoni’s

respondent) shows that Symfoni is more of a project oriented company, which implements EA projects in a project management manner. As such, they produce documents that form a part of the Prince II project management documentation process, just as BaneDanmark's respondent stated, when he said that "If you have a project driven organization method, they do not use this kind of methodology (as specified by TOGAF). They'll use maybe Prince II, the project initiation document" (A. Lövberg BaneDanmark, 2012). As such, Symfoni seem to slightly adapt TOGAF's documentation (as specified in this step) so that they produce documents that closely resemble those used by project-driven organisations.

A key point that was made by the interviewee from Nordea regarding this step's implementation was to emphasise that the documentation can be done in a range of applications, for instance, Microsoft Word or PowerPoint (J. Lippert Nordea, 2012). These documents may also be geared more towards a different perspective, for instance, a Project Management perspective (M.Stender Symfoni, 2012). However, if the organisation is project driven, then the documents (in some form) are usually required from a Project Management perspective (M.Stender Symfoni, 2012), with specific changes accordingly made to these documents in order to ensure that they are fit for purpose (A. Lövberg BaneDanmark, 2012).

6 Conclusion

This chapter ties the study up by detailing the conclusions that were derived as a result of the preceding chapters. The conclusions are presented in terms of answering the specific research question in a general manner, before they are presented in a more detailed manner, in tabular form. The chapter ends by summarising the study's findings in relation to the study's overriding objectives, along with its associated problem area.

6.1 Answering the Research Question

What are the differences between the Business Architecture element's steps within TOGAF and its practical implementation?

In order to answer this question, we conducted a direct comparison between TOGAF's prescribed steps for the Business Architecture phase, and the answers provided by Enterprise Architects regarding the implementation of these steps. TOGAF's prescribed steps were used in this regard as they provide the overall guidelines for implementing the Business Architecture phase. Their use enabled a concisely comprehensive comparison to be made between what TOGAF advocates should be done to successfully implement Business Architecture, and what expert Enterprise Architects said should be done to achieve this same goal.

The phase's prescribed guidelines were found to be accurate in the main. Despite this, there are a number of essential concepts within the phase's steps that could be addressed in order to make them more practically feasible to implement. Accordingly, we found that some sort of a gap is present between most of the steps detailed by TOGAF for implementing the Business Architecture phase, and the opinions of the interviewed architects on what should be done in order to implement the phase.

A summary of the differences between TOGAF's prescribed steps and the interviewee responses are detailed in table 6:1 below.

Table 6:1 Summarising Findings and Conclusions

Step	Difference(s)	Conclusion
Select Reference Models, Viewpoints, and Tools	<ul style="list-style-type: none"> Terminology within this step should be clarified Information Modelling should be conducted early on 	<ul style="list-style-type: none"> Clarifying the terminology and conducting early information modelling would make the step more implementable.
Develop Baseline Business Architecture Description	<ul style="list-style-type: none"> Enterprise Architects question the significance of these steps as stand-alone ones. Inclination of over-focussing on the current situation, rather than the future state (Target Business Architecture Description). 	<ul style="list-style-type: none"> 'Baseline Business Architecture Description' should be merged with the 'Target Business Architecture Description' and 'Perform Gap Analysis' steps.
Develop Target Business Architecture Description	<ul style="list-style-type: none"> TOGAF doesn't advocate the prioritisation of any of the steps. 	<ul style="list-style-type: none"> The steps could be prioritised, with the Baseline Business Architecture de-prioritised, enabling the Architects to focus more on the Target Architecture's description.
Perform Gap Analysis	<ul style="list-style-type: none"> The formal documentation of these steps will vary depending on the size of the enterprise. This point is not directly made by TOGAF in their prescribed steps. 	<ul style="list-style-type: none"> TOGAF should state that these steps may be documented differently.
Define Candidate Roadmap Components	<ul style="list-style-type: none"> Planning and costs are overlooked in TOGAF's guidelines for this phase's implementation. TOGAF suggests including these concepts in the later described phases E and F. However, it may be too late to address them then. The concepts of iterations and scoping should be emphasised more, as an aid to present this step's findings. 	<ul style="list-style-type: none"> TOGAF should directly mention, and place an emphasis on the concepts of planning and costs, whilst also emphasising the importance of scoping and iterations.
Resolve Impacts Across the Architecture Landscape	<ul style="list-style-type: none"> TOGAF does not explain that this step is only valid for a short period of time, due to the fact that technology shifts frequently occur. 	<ul style="list-style-type: none"> Although this is one of the more accurately defined steps within TOGAF's guidelines, TOGAF could state that the step is only valid for a short timeframe.
Conduct Formal Stakeholder Review	<ul style="list-style-type: none"> Not enough emphasis placed on stakeholder management, in order to help sell the vision. Not enough promotion of the visualisation concept The use of the relevant terminology to the relevant stakeholders is not emphasised. 	<ul style="list-style-type: none"> More emphasis should be placed on the importance of stakeholder management during this phase. The concepts of visualisation and terminology should receive more direct attention
Finalise the Business Architecture	<ul style="list-style-type: none"> Although it focuses quite a lot on business capabilities, TOGAF fails to directly mention these within this step. The point of personalising this step is not emphasised enough. 	<ul style="list-style-type: none"> Only actionable if it includes all of the TOGAF specified work products. Architects could be advised to personalise this step by 'making it their own'.
Create Architecture Definition Document	<ul style="list-style-type: none"> The specified documents are usually adapted and changed (from TOGAF's guidelines) with differences in the terminology used. 	<ul style="list-style-type: none"> TOGAF could further emphasise the point that the documents only serve as guidelines for the Architects.

The presented findings in table 6:1 could be used by enterprise architects in order to have a more comprehensive outlook on what implementing an Enterprise Architecture project entails. The purpose of this study was to shed more light upon the differences between TOGAF's implementation guidelines for Business Architecture and what implementing these guidelines entails. The obtained findings show that although TOGAF is implementable, there are still some areas where the architect will need to self-navigate, and form their own implementation path.

According to the interviewee at Acando, one of the most common questions asked after the TOGAF workshops is: "now we know a lot of the theory, we know there is a big gap between theory and practice, but how do we start?" (A. Arvidsson Acando, 2012). Accordingly, our findings highlight the differences between TOGAF's Business Architecture steps and what would be done in practice. By highlighting these differences, Enterprise Architects should be able to implement the Business Architecture phase more efficiently and effectively, as they will know which gaps exist within this phase, enabling them to take actionable steps to deal with the existence of these gaps. The study's main problem area was cited as being that EA frameworks are generally unable to create actionable Enterprise Architectures (Schekkerman, 2003). Following on from this, the study directly tackles this problem, by highlighting the specific differences between TOGAF's advocated guidelines, and the practical steps that would need to be conducted in order to implement an EA project's BA phase.

In essence, by highlighting the aforementioned differences, this study provides Enterprise Architects with more practically feasible guidelines for the implementation of the BA phase within EA. As such, the Architects should have a more comprehensive outlook regarding what the implementation of the BA phase within EA actually entails, allowing them to be better prepared when implementing the BA phase within any given EA project.

6.2 Discussion of Further Studies

During the development of this study, we found that future research could expand on our findings by also looking at the accompanying phases that relate to the Business Architecture phase within TOGAF's ADM cycle, as shown in figure 2:2 (such as the Information Systems Architecture, the Architecture vision, and the Requirements Management phases). This would enable the researchers to conduct a deeper analysis into the differences that exist between TOGAF's specified steps and the steps actually undertaken to successfully implement an EA project. An ultimate study would look into all of the phases detailed within TOGAF's ADM, as they all play a part in the development of an EA project. The phases may be scrutinised accordingly, with their respective steps then compared to the thoughts of Enterprise Architects, in order to establish which differences exist between the two. These differences could then be analysed in order to provide Enterprise Architects with a more comprehensive vision of what implementing a full EA project truly entails.

Appendices

Appendix 1 - Clarifying Key Concepts

ADD – Architecture Definition Document

ADM – Architecture Development Method

BA – Business Architecture

CIO – Chief Information Officer

DODAF – Department of Defence Architectural Framework

EA – Enterprise Architecture

EAF – Enterprise Architecture Framework

FEA – Federal Enterprise Architecture

FEAF - Federal Enterprise Architecture Framework

ICT – Information and Communication Technology

IS – Information Systems

IT – Information Technology

NAF – NATO Architecture Framework

PRINCE2 – Projects in Controlled Environments

ROI – Return on Investment

TAFIM – Technical Architecture Framework for Information Management

TOGAF – The Open Group Architecture Framework

Appendix 2 – Interview Guide

Set Scene – what we are doing and what we hope to get out of the interview:

We've started our thesis at Lund University. The thesis is within the EA domain, with the main aim of the thesis being to compare the Business Architecture concept within TOGAF to its practical implementation.

Our main question is to determine how the Business Architecture element within TOGAF differs from its practical implementation? In order to answer this overriding question, we will be looking to determine which differences exist between TOGAF's prescribed steps for implementing the BA phase and its practical implementation.

The main reason we are conducting this interview is to gain an insight of Business Architecture's practical implementation, allowing us to relate these findings back to TOGAF's prescribed steps of this phase within EA. We're going to focus on the Business Architecture concept because we have established that it is a key EA concept. Additionally, as you probably know, there is a lot out there and we are limited on time, so we've had to focus our efforts on one of the key concepts in order to ensure that our thesis is feasible.

Introductory Questions:

Question 1: First off, could you please give us a brief background of your experience as an Enterprise Architect?

Question 2: As a follow up to that, how would you say TOGAF fares in comparison to the other established frameworks?

TOGAF's Business Architecture Step Questions:

Question 3: Starting with TOGAF's first prescribed step in Business Architecture; what are the key differences that exist between this step, as prescribed by TOGAF and its practical implementation?

Question 4: TOGAF also endorses the concept of viewpoints by stating that the relevant Business Architecture viewpoints should be selected. Is this a useful concept in practice?

Question 5: Step two in TOGAF prescribes developing the baseline Business Architecture description, is this accurate in terms of its practical implementation?

Question 6: Would the next practical step be to develop a Target Business Architecture description, as prescribed by TOGAF?

Question 7: TOGAF goes on to propose the concept of separating the baseline and target architectures before analysing the gaps that exist between the two; would this actually be done in practice?

Question 8: The next TOGAF step prescribes defining the candidate roadmap components in order to prioritise activities over the coming phases. What do you think about this from a practical perspective?

Question 9: TOGAF also prescribes identifying any impacts that the Business Architecture has on pre-existing architecture, with a plan for identifying and resolving impacts put in place. Would this be the case when practically implementing an EA project?

Question 10: Another of TOGAF's prescribed steps advocates conducting a formal stakeholder review. Would you actually do this when implementing an EA project?

Question 11: One of TOGAF's last prescribed steps for Enterprise Architects to carry out in this phase requires finalising the Business Architecture. In practice, would you do this, as prescribed by TOGAF?

Question 12: Creating the Architecture Definition Document is the final step detailed by TOGAF within the Business Architecture phase. In practice, is this document produced using the methodology specified by TOGAF?

TOGAF's ending Questions:

Question 13: In conclusion, what would you say the main difference between TOGAF's prescribed steps and the practical implementation of the Business Architecture is?

Question 14: Is there anything you would like to add?

Appendix 3a – Interview Transcript with BINER

Date: 12/03/2012

IA = Informant A

Re = Researcher

Person	Conversation	Code	Line
Re	<p><i>Basically, we started our thesis and we've come up that we were going to work in the Enterprise Architecture domain; The main aim is to form a comparison between the prescribed steps inside the Business Architecture and these steps in practice. Afterwards, analyse the information to discover if there are gaps between them.</i></p> <p><i>We are trying to get a more insight practice from yourself, which is the aim if this interview.</i></p> <p><i>Our main question is to determine how the Business Architecture element within Enterprise Architecture theory differs from its practical implementation? In order to answer this overriding question, we are conducting this interview is to gain an insight of Business Architecture's practical perspective, allowing us to relate these findings back to TOGAF's description of this EA element.</i></p> <p><i>First off, could you please give us a brief background of your experience as an Enterprise Architect?</i></p>		1
IA	<p>I have a background working in CompanyA. I worked there as an Enterprise Architect for many years and initially, when I worked at the actual organisation and we started to focus on solution architecture and then we moved into Enterprise Architecture. Initially we had a look into the Gartner's framework, primarily not with the intent to do Enterprise Architecture but to sell it. Then eventually, the company I worked for selected the TOGAF as the framework, for the architecture capability as CompanyA became more mature, but also when we saw that TOGAF became more mature and that will add more value.</p>		2
Re	<p><i>Starting with TOGAF's first prescribed step in Business Architecture; what are the key differences that exist between this step, as prescribed by TOGAF and its practical implementation?</i></p>	SV1	3
IA	<p>I would say again in theory this is pretty accurate. However I would say that I do think the approach that you select the reference models and view points and tools is good, normally you don't start in that end, you rather start by looking at how we are going to gather all this information. So you start with the practical question who will be involved, how would we work our workshops, what would be the focus of these workshops, what are the potential problems we can run into, like political problems. If you look at the first step of the B phase, TOGAF suggests that you should start by looking at the problem from a theoretical perspective, it does take into concern what your stakeholders think and what the views are and you should consider your modelling approach; but I think in practice you're much more pragmatic. Basically one of the first things you do is that you bring your calendar and then you look at ok; How many workshops do we have time for? Who can get involved? Again is this is a large company like as CompanyA, is it feasible that we bring people from the United States? Or that would be too costly? Is it possible to do this before the holiday season kicks in? And things like that.</p> <p>I think the approach of TOGAF suggests looking much more than reference models and viewpoints is good but in practice you quite often end up in a discussion in much more practical discussions.</p>	SV1	4

Re	<i>Moving on into step two in TOGAF's Business Architecture. The framework prescribes developing the baseline Business Architecture description, is this accurate in terms of its practical implementation?</i>	DB2	5
IA	It might not be as structured as the method suggests. But still, I would not actually suggest that it needs to be changed in any way.	DB2	6
Re	<i>Would the next practical step be to develop a Target Business Architecture description, as prescribed by TOGAF?</i>	DT3	7
IA	<p>I think that you have to distinctively work on first the baseline and then the target; Quite often you need to find a way to merge these into one discussion. Also quite big challenges when you run a process management workshop. It's quite hard to get the audience to differ between baseline and target.</p> <p>And also, I think the way that TOGAF has divided into three steps baseline, target and gap, quite often this merges into one activity where you manage to make one workshop in place to look into a specific area and then you need to cover both baselines and the gap at the same time. So again, it might not be as structured as the method suggests.</p> <p>So for example, you will probably say that you will start by looking at the baseline of BA, quite often as the next step rather than going into the target BA definition, you will probably look at the what other services that support this. So quite often B and C phase's sort of merge.</p> <p>I think of two reasons. One is the practical reason, you might not be able to gather the people you need as many times as you will like in order to have sessions and quite often, especially business people do not understand the differentiation between the process and IS. They understand the difference between process and tools, but they do not understand why they can't discuss both of the things at the same time. Because they see that for example, well the problem with our current process is that the tools are appropriate and then they want to discuss that at the same time, and they don't want to postpone it to a meeting two weeks on.</p> <p>So yes, I do think from a theoretic standpoint, I think this is an accurate process. And to be honest, I don't necessarily have a problem with it and the way it is described. I'm quite 'OK' with the framework that it describes the theoretic approach and then you will roll as Enterprise Architecture to do it in practice. So, I would not actually suggest that it needs to be changed in any way.</p>	DT3	8
Re	<i>TOGAF goes on to propose the concept of separating the baseline and target architectures before analysing the gaps that exist between the two; would this actually be done in practice?</i>	GA4	9
IA	<p>When I present TOGAF, that's one of the other key concepts of TOGAF that really enforces this model, you need this kind of baseline, you need to describe your target, your gaps, and when you get to the planning phases, the whole idea is to ensure that you understand the gaps across all the domains.</p> <p>But to make the long story short, I do think that the approach with the suggestion here in the B phase is quite adequate.</p>	GA4	10
Re	<i>The next TOGAF step prescribes defining the candidate roadmap components in order to prioritise activities over the coming phases. What do you think about this from a practical perspective?</i>	DR5	11
IA	For example, when you work through B C and D (TOGAF suggest this) you often need to say something about the planning and the costs and so on, things that if you will follow TOGAF by the book, you would leave until the E and the F phase. But quite often you need to make some assumptions of the planning. This is suggested by the fact that you create a candidate road map, so a part of it is there, but I would say that quite often you need to make some kind of cost assessment which I would say it is not part of the candidate road map. The way it works, and if you do a TOGAF project	DR5	12

	and you present it to some kind the results to the group, you must be prepared to answer questions like costs and risks and so on.		
Re	<i>TOGAF also prescribes identifying any impacts that the Business Architecture has on pre-existing architecture, with a plan for identifying and resolving impacts put in place. Would this be the case when practically implementing an EA project?</i>	AL6	13
IA	Yes, this is pretty accurately defined by TOGAF. You would be doing this in practice.	AL6	14
Re	<i>Another of TOGAF's prescribed steps advocates conducting a formal stakeholder review. Would you actually do this when implementing an EA project?</i>	SR7	15
IA	<p>TOGAF could emphasize more on the stakeholder management because it is crucial to understand your customer or the stakeholders. In order to understand what your customers want, you need to understand how you can manage the differences between the different stakeholders regarding the scope. It's vital to use stakeholder management to appropriately sell your vision.</p> <p>Also, TOGAF is not exactly clear on how they deal with information management. B and C phases get a bit blurred because you need to bring concepts like what kind of information do you manage throughout this process</p> <p>And now when I come thinking about it, getting back to the Business Architecture, one of the things that it is not clearly defined in TOGAF is the fact that quite often as early as you move into the vision phase, you might need to do some early information modelling, especially if you are working with a large project, you need to do some early information modelling to make sure that you use the same terminology when you do this kind of things</p> <p>A way to describe this is that TOGAF talks about requirements management being a central phase which will be on going all the time, I think that project management activities like risk management and stakeholder management and management of the actual scope is also on going all the time, and this is part of what TOGAF says but is not clearly visible in the phases.</p> <p>So without a doubt, working with BA is the absolute biggest challenge because they often have a personal interest in the architecture and quite often the stakeholders you work with do not necessarily see the immediate benefits. I would say, most often the people working in the C and D phases don't necessarily have a personal interest in the architecture itself.</p> <p>For instance, when you kick off a large EA program, I would say probably as early in the vision phase, you need to ensure that when you refer to, for example a product in supply chain management process you need to ensure that all your stakeholders use term product in the same way. And I do think that's not necessarily visible in the vision phase or in the B phase. You can argue that is included as part of the data architecture, but it's far too late to focus on this in the C phase.</p>	SR7	16
Re	<i>One of TOGAF's last prescribed steps for Enterprise Architects to carry out in this phase requires finalising the Business Architecture. In practice, would you do this, as prescribed by TOGAF?</i>	FA8	17
IA	Yes I would follow this step's guidelines. I would say that one thing that it is not exactly visible in this list here, but in my opinion TOGAF focuses quite a lot on evaluating business capabilities and that is definitely one of the things I would focus the most on.	FA8	18
Re	<i>Creating the Architecture definition document (ADD) is the final step detailed by TOGAF within the Business Architecture phase. In practice, is this document produced using the methodology specified by TOGAF?</i>	DD9	19
IA	You would not kick off an Architecture Development Method (ADM) process producing every single deliverable. You would focus more on a	DD9	20

	few documents, the plan and maybe also the communication plan. The ADD would be one of the documents to be produced so in most cases the answer to the question is yes		
Re	<i>Well, that is it for the interview. We want to thank you for your time and providing us the information about your experience as an Enterprise Architect.</i>		21
IA	You're welcome. In case you need any additional information don't hesitate to send me an email.		22

Appendix 3b – Interview Transcript with Acando

Date: 12/03/2012

IB = Informant B

Re = Researcher

Person	Conversation	Code	Line
RE	<i>I think it would be best if we commenced this interview by providing you with a brief background that details what we are doing. We've started our thesis at Lund University. The thesis is within the EA domain, with the main aim of the thesis set to comparing TOGAF's prescribed steps for implementing the Business Architecture phase (within an Enterprise Architecture project) with the practical guidelines for implementing this phase. As such, the main reason we are conducting this interview is to establish what the practical perspective regarding Business Architecture's implementation actually is.</i>		1
RE	<i>Could you now please provide us with a brief background of your industrial experience within the Enterprise Architecture field?</i>		2
IB	I am currently an Enterprise Architect at Acando. In the past, I have worked as an Enterprise Architect as well as Project Manager at well renowned companies across the globe.		3
RE	<i>Ok thanks for that. Getting right into the mix of things. TOGAF's first prescribed step in Business Architecture is the selection of reference models and tools. What are the key differences that exist between this step, as prescribed by TOGAF and its practical implementation?</i>	SV1	4
IB	I like to use viewpoints. I like that concept. Where I have been they have been rather positive in trying to adopt that. The terminology related details you would need to feed into the actual logical data models. You need to do some sort of information model first. If you do things formally, in the ideal way, (this very seldom is the case). Usually you would say: we already have pretty detailed stuff in our logical models, so we can probably extract that out here and say let's do terminology based on that and based on what we get out of the processes and abstract that into an information model instead.	SV1	5
RE	<i>Step two in TOGAF goes on to prescribe the development of the baseline Business Architecture description, is this accurate in terms of its practical implementation?</i>	DB2	6
IB	Ok the baseline stuff, not so very important usually. You need to know where you are coming from, but mostly people have a pretty good grasp already in their heads of where things are.	DB2	7
RE	<i>Would the next practical step be to develop a Target Business Architecture description?</i>	DT3	8
IB	Yes, and it is usually mostly the visionary part going forward that is interesting.	DT3	9
RE	<i>TOGAF goes on to propose the concept of separating the baseline and target architectures before analysing the gaps that exist between the two; would this actually be done in practice?</i>	GA4	10
IB	You can, most clients have, depending on the size of course, the smaller clients usually are capable of doing that gap analysis in their heads, or doing it pretty manually, without having lots of analysis on the baseline I think.	GA4	11
RE	<i>The next TOGAF step prescribes defining the candidate roadmap</i>	DR5	12

	<i>components in order to prioritise activities over the coming phases. What do you think about this from a practical perspective?</i>		
IB	This is pretty much it in the basic order of things, but it's also a difference in where the scope or footprint of all the aspects that you do, because some, you know, it depends on the project, the size of the change and the impact it will have.	DR5	13
RE	<i>So do the processes take on more importance than the other elements detailed by TOGAF?</i>		14
IB	Processes? Compared to the other stuff umm, yes it is usually really really important, but I would say that, the, getting the business terminology out of this phase is also very important because usually you get a lot of term mix-ups, so yes processes, I mean it is really hard to map things out without knowing which order you do things in, but also if you are calling "customer" and you actually have 6-12 different types of entities that you call "customer" then you will have a really hard time getting the different units to understand what they are actually talking about.		15
RE	<i>TOGAF also prescribes identifying any impacts that the Business Architecture has on pre-existing architecture, with a plan for identifying and resolving impacts put in place. Would this be the case when practically implementing an EA project?</i>	AL6	16
IB	Again yes, this would be done, however, you would usually mostly focus on processes, possibly a bit on organisation, and then, it goes into information and terminology pretty quickly.	AL6	17
RE	<i>Another of TOGAF's prescribed steps advocates conducting a formal stakeholder review. Would you actually do this when implementing an EA project?</i>	SR7	18
IB	It would be quite helpful to be closer to the business language for TOGAF, since their vision is to make it an Enterprise Architecture framework that is used by business in order to facilitate change, then you need to talk like business and not like IT architects. You need to talk about value, and profits, there is so much focussed on cost and sales usually, which is the first thing that you usually address in a maturity scale of course but you need to show the rest of the leverage where you actually produce more value and there is very little talk about the positive benefits, it is more about removing the negative stuff.	SR7	19
RE	<i>Moving on to TOGAF's penultimate step for Enterprise Architects to carry out in this phase, which requires finalising the Business Architecture. In practice, would you do this, as prescribed by TOGAF?</i>	FA8	20
IB	Yes, the steps that TOGAF provide are pretty much what you would be doing here.	FA8	21
RE	<i>Creating the Architecture definition document is the final step detailed by TOGAF within the Business Architecture phase. In practice, is this document produced using the methodology specified by TOGAF?</i>	DD9	22
IB	All documents are usually adapted and changed; yea, they are good as inspiration but you are very seldom using the same terminology, as is used in TOGAF, and this is usually fine.	DD9	23
RE	<i>As a closing question, how would you summarise the current state of affairs with regards to the gap between TOGAF and EA project implementation?</i>		24
IB	One of the most common questions that I get asked after the TOGAF workshops is: now we know a lot of the theory, we know there is a big gap between theory and practice, but how do we start? I believe that people (junior architects) usually have a hard time getting started.		25
RE	<i>Ok, thanks for that and thank you very much for your time.</i>		26
IB	My pleasure, and do let me know if you need any additional details for your thesis.		27

Appendix 3c – Interview Transcript with Nordea

Date: 29/03/2012

IC = Informant C

Re = Researcher

Person	Conversation	Code	Line
RE	<i>I think it would be best if we commenced this interview by providing you with a brief background that details what we are doing. We've started our thesis at Lund University. The thesis is within the EA domain, with the main aim of the thesis set to comparing TOGAF's prescribed steps for implementing the Business Architecture phase (within an Enterprise Architecture project) with the practical guidelines for implementing this phase. As such, the main reason we are conducting this interview is to establish what the practical perspective regarding Business Architecture's implementation actually is.</i>		1
RE	<i>Could you now please provide us with a brief background of your industrial experience within the Enterprise Architecture field?</i>		2
IC	We have just started the journey of trying to work more aligned with what the TOGAF and other EA approaches would indicate as best practices for working with your business transformation or enterprise transformation. We are not currently aligned with the more complete or coherent TOGAF approach or any other sort of EA structured ways of working. We are currently working with or piloting, we have engaged in well with a Swedish company actually maybe you know it <Company Name>. They have a very good approach, well it's an approach without getting into whether it is very good or good, and this approach basically helps you in relation to how you want to do your EA work. So that's a baseline of where we are right now in Nordea. We are not currently working in a strict TOGAF manner.		3
RE	<i>Ok thanks for that. You still seem to have a mature Architecture in place at Nordea, taking some of TOGAF's concepts and incorporating them with your current architecture.</i>		4
IC	Yes certainly, we also have an architecture governance process (IT), where we govern our outgoing projects towards some standards and common practices. So we have some governance mechanisms. We also just recently launched an EA board, called "Nordea Architecture Board" where we will, like as an escalation or governance body on top of the IT architecture governance bodies that are anchored within the various IT units. They will have one board called "Nordea Architecture Board" where we will discuss and decide basically on stuff of common interests. It is not a full EA board at the moment as it only has IT representatives and no business representatives but this is where we are starting now. We also have some way of working.		5
RE	<i>Moving on to take a look at TOGAF's first prescribed step in Business Architecture (Selecting Reference Models, Viewpoints, and Tools); What are the key differences that exist between this step, as prescribed by TOGAF and its practical implementation?</i>	SV1	6
IC	We have the project development model where we also work with TOGAF - like artefacts when it comes to solutions design. These were mentioned well before TOGAF came into our minds but they are based around common sense and good practices on how we can design or develop a good architecture. We have also for many years had the business implications or managing the changes in the business as part of projects so we don't run projects where we deliver IT solutions then leave it up to the business to	SV1	7

	make it work. There we have had for many years the idea that business and IT team up together and design, plan and execute changes because we don't believe in just doing IT projects or new systems without carefully handling the changes required on the business side. That is training new operating procedures and organisations and so on, they need to go hand in hand in any project, but again these weren't born out of TOGAF, they born out of good practices emerging over years, I mean TOGAF is also inspired by these ways of working, like the need to see things in an integrated manner, you can't just develop a solution or technical infrastructure in isolation, they don't exist and they don't live by themselves, they live in a complex interplay between the business and solutions of IT infrastructure, as is recognised by the various EA models.		
RE	<i>So overall, are TOGAF's prescribed guidelines for this step's implementation pretty accurate?</i>	SV1	8
IC	Don't believe that one size fits all in these decisions or situations. It is also likely that you will need some fast-track models, mainly of the project nature. I mean, you would most likely have much more refined ways of working, adding more models, perspectives etc to help you in your work. I mean this is still, although it is quite comprehensive, it is still quite to the point with bullets on what it is about and how you would do it. Many of these areas could be subject for great expansion (from the bible info.)	SV1	9
RE	<i>Ok, moving onto the second step that TOGAF prescribes in this phase's implementation. This step prescribes developing the baseline Business Architecture description; Is this accurately detailed by TOGAF in terms of its practical implementation?</i>	DB2	10
IC	As I previously mentioned, we have established the baseline of where we are currently positioned in Nordea. We are not currently working in a strict TOGAF manner. Note that you also do your baseline considering the existent gaps. You will do your baseline on or with a view of where you would expect changes	DB2	11
RE	<i>Would the next practical step be to develop a Target Business Architecture description, as prescribed by TOGAF?</i>	DT3	12
IC	Yes, in my mind it is useful to have this, along with the baseline architecture in order for a gap analysis to take place.	DT3	13
RE	<i>TOGAF then goes on to propose the concept of separating the baseline and target architectures, before analysing the gaps that exist between the two; would this actually be done in practice?</i>	GA4	14
IC	Well the gap analysis actually forms the project as that's the basis upon which the changes are made, so they are very important. It is the gap analysis that will actually suggest where you need to change things. So the gap drives the actual project, the gaps are things you need to change, so yes they are very important if you want to use TOGAF as a change model and that is certainly the ambition. You will have different changes and gaps in all the different dimensions. You can have cases or projects where you don't have any gaps in the Business Architecture but you could have many changes or gaps in the infrastructure or IT solutions landscape, where you would be doing things there in a totally different manner but not even changing the Business Architecture. So it is in my mind useful to have all of these.	GA4	15
RE	<i>After the gap analysis step, TOGAF then goes on to prescribe the definition of roadmap components in order to prioritise activities over the coming phases. What do you think about this from a practical perspective?</i>	DR5	16
IC	You don't need to do all of it, you do have some good ideas of what could be done here and they are in headline form making them irrelevant (in differences between personnel and TOGAF prescribed methods) and then how you do it; This is where you have differences because you have	DR5	17

	different approaches of actually doing the job – getting things done.		
RE	<i>Ok, so would you say that there is a conflict between the prescribed steps and what you would do here?</i>	DR5	18
IC	Again, you can decide how you want to work with it and the outcomes of what you are to do. They make a lot of sense in my mind. It actually goes for all the phases. I mean they have very sound and well considered what you get out of it and again it's a comprehensive list with flexibility. The TOGAF bible is a catalogue of things that could be relevant to do, leaving it to the personnel involved in carrying out the project to actually decide what is relevant in this context. I mean what are we architecting here, is it a full business position or unit? What makes sense in our case? But again certain things would be mandatory, you would need to do them to ensure consistency, but many of these things that you can do or are prescribed can also have more sense to be left out in certain circumstances.	DR5	19
RE	<i>TOGAF also goes on to prescribe the identification of any impacts that the Business Architecture has on pre-existing architecture, with a plan for identifying and resolving these impacts put in place. Would this be the case when practically implementing an Enterprise Architecture project?</i>	AL6	20
IC	This step is a good checklist, and the points detailed within it would need to be carried out. However, like the other steps, you have to figure out how you want to work with it and also how you want to document it because you have a process which basically tells you what to do but then you need to have a process which basically tells you how to do it.	AL6	21
RE	<i>Another of TOGAF's prescribed steps advocates conducting a formal stakeholder review. Again, would you actually do this when implementing an Enterprise Architecture project?</i>	SR7	22
IC	This step includes a lot of different stakeholders like internal and external stakeholders - outside the company; So, if you gather all of the stakeholders in a room, then it becomes very hard to get a grip of what are the requirements from all the different stakeholders. Sometimes you have the same requirements or one requirement from the stakeholders. But problems arise whenever the stakeholders say opposite information to the others' requirements. So, I think the hardest part is the stakeholders For instance, if you have a business-oriented stakeholder, they don't want to talk about technology; they want to talk about ROI, and these kinds of words. To sum up, it's crucial to present the right information to the right stakeholder.	SR7	23
RE	<i>The penultimate step that TOGAF prescribes Enterprise Architects to carry out in this phase requires finalising the Business Architecture. Would you do this, as prescribed by TOGAF?</i>	FA8	24
IC	Again, this step is quite sound. The trick is in how you would actually do it.	FA8	25
RE	<i>And moving on to the final step detailed by TOGAF, which is the creation of the Architecture Definition document. In practice, is this document produced using the methodology specified by TOGAF?</i>	DD9	26
IC	You have to figure out how you want to work with TOGAF and how you want to document it. You could document things in a range of applications from Word to PowerPoint. Then you would also need to establish how these documents look. You can check architecture documents in the TOGAF bible, but these are not always very good templates to start with.	DD9	27
RE	<i>Ok, that's about it for the interview, thank you for your time. It's been nice speaking to you.</i>		28
IC	Thank you. If you need any additional information then just let me know. I'd be happy to help.		29

Appendix 3d – Interview Transcript with BaneDanmark

Date: 04/04/2012

ID = Informant D

Re = Researcher

Person	Conversation	Code	Line
Re	<p><i>Basically, we started our thesis and we've come up that we were going to work in the Enterprise Architecture domain; The main aim is to form a comparison between the prescribed steps inside the Business Architecture and these steps in practice. Afterwards, analyse the information to discover if there are gaps between them.</i></p> <p><i>We are trying to get a more insight practice from yourself, which is the aim if this interview.</i></p> <p><i>Our main question is to determine how the Business Architecture element within Enterprise Architecture theory differs from its practical implementation? In order to answer this overriding question, we are conducting this interview is to gain an insight of Business Architecture's practical perspective, allowing us to relate these findings back to TOGAF's description of this EA element.</i></p> <p><i>First off, could you please give us a brief background of your experience as an Enterprise Architect?</i></p>		1
ID	<p>My name is Anders. I've worked previously in the Swedish Armed forces as a technical officer at the joint head quarters. I worked with architecture within the international community that deals with NATO and within this kind of area. After that, I found a position in Copenhagen as a chief architect and I've been working with that since I ended my career in the Armed Forces. Within the company I work with the Danish national state, which is in a transformation working with the signal insistence. They are going from an analogue environment to full digital environment with GSMR and also all the capabilities with IT. And they are not used to handle and manage IT in this kind of environment, so it is for me, and the both, the Enterprise Architecture the IT part. And also knowledge transformation to the company while working with IT.</p>		2
Re	<p><i>Starting with TOGAF's first prescribed step in Business Architecture; what are the key differences that exist between this step, as prescribed by TOGAF and its practical implementation?</i></p>	SV1	3
ID	<p>Yes. For instance, the viewpoints are quite good because you can use the viewpoints to have different elaborations on the problems. And you can use the different viewpoints to make questions to the people (that are going to use the systems or customers) and also the people (siding) the corporate requirements and the economical sides. Because different viewpoints gives you pros and cons. The viewpoints are quite good.</p> <p>And this is information that the businessperson or senior offices understands because he had come of this kind of environment, and army or a navy person they can be part of the same view and they can discuss it. So this kind of information is important.</p>	SV1	4
Re	<p><i>Moving on into step two in TOGAF's Business Architecture. The framework prescribes developing the baseline Business Architecture description, is this accurate in terms of its practical implementation?</i></p>	DB2	5
ID	<p>Baseline, that is more I think, what do we try to solve Focusing more on answering the next questions: What do we try to solve? What kind of effects and business value are we going to present with this solution?</p>	DB2	6

Re	<i>Would the next practical step be to develop a Target Business Architecture description, as prescribed by TOGAF?</i>	DT3	7
ID	You should place more emphasis on the target than the baseline when implementation takes place.	DT3	8
Re	<i>TOGAF goes on to propose the concept of separating the baseline and target architectures before analysing the gaps that exist between the two; would this actually be done in practice?</i>	GA4	9
ID	<p>One problem that I've seen quite a lot in this phase is that people tend focus too much on the current situation. Instead, it is completely crucial to focus on your next steps, the outcome of the architecture, and what the customer or user wants.</p> <p>The focus you need to have is: What are you going to solve (to your future step)? Which is more relevant than working on than "what do we have". Because if you start to work with "what you have" and do a lot of work with that, you just stand still. So you have to focus on your next step and you have to focus on the outcome of the architecture and what the customer or user want to have. In many architecture works, the main focus is: What do we have and how do we solve that problem?</p> <p>And I think it is important but that is not the main focus. You have to focus where you are going to be. So the gap analyses yes but begin on where you are going to be and not where you are coming.</p>	GA4	10
Re	<i>The next TOGAF step prescribes defining the candidate roadmap components in order to prioritise activities over the coming phases. What do you think about this from a practical perspective?</i>	DR5	11
ID	<p>During the steps in BA, you have iterations.</p> <p>For instance, when a step is done, you have to go back and present a first final result, and then go back to the viewpoints again and then go to the bottom. So, if you go step by step, when you go to landscape you get stuck.</p>	DR5	12
Re	<i>TOGAF also prescribes identifying any impacts that the Business Architecture has on pre-existing architecture, with a plan for identifying and resolving impacts put in place. Would this be the case when practically implementing an EA project?</i>	AL6	13
ID	I start from the bottom. Impact on a cross architecture landscape: yes and no because the technology will shift within your landscape every 6 months every the HW and every 2 years the SW, and you have constantly new projects and they are constantly affecting your landscape and you have to focus on the costumer, and the landscape we have it for a small time.	AL6	14
Re	<i>Another of TOGAF's prescribed steps advocates conducting a formal stakeholder review. Would you actually do this when implementing an EA project?</i>	SR7	15
ID	<p>This step includes a lot of different stakeholders like internal and external stakeholders - outside the company; So, if you gather all of the stakeholders in a room, then it becomes very hard to get a grip of what are the requirements from all the different stakeholders.</p> <p>For instance, if you have a lot of different stakeholders like internal, external, external stakeholders with outside the company, so it depends on what are you going to solve with your solution. So, if you do a survey and you put all the stakeholders in the room, I think is very hard to get a grip of what are the requirements from the different stakeholders.</p> <p>Sometimes you have the same requirements or one requirement from the stakeholders. But problems arise whenever the stakeholders say opposite information to the others' requirements.</p> <p>So, I think the hardest part is the stakeholders</p> <p>Also, If you have done the architecture landscape picture, you can't present that to the stakeholders. Not all of stakeholders.</p> <p>But if you present the architecture landscape: "we have this DB and this kind of server, and this", is empty words and they don't understand it. So we</p>	SR7	16

	<p>go back and you have to use the right viewpoints, the right information to the right stakeholder. It's your job to hear what they are saying and make that information come alive in the final parts of this kind of document within the Business Architecture and also the Definition document.</p> <p>You can present that to some stakeholders. For instance, if you have a business-oriented stakeholder, they don't want to talk about technology; they want to talk about ROI, and these kinds of words.</p> <p>To sum up, it's crucial to present the right information to the right stakeholder.</p>		
Re	<i>One of TOGAF's last prescribed steps for Enterprise Architects to carry out in this phase requires finalising the Business Architecture. In practice, would you do this, as prescribed by TOGAF?</i>	FA8	17
ID	I think that is quite good because if you use any standard (example lifecycle standard 15-88) or some other standard you have to take those standards and make them yours. It's the same thing with TOGAF, you have to make it yours and in that way you can use the standards in the "what" area but not in "how" area. You have to fill in that information on how you are going to do it yourself because you are dealing with the company culture and all that.	FA8	18
Re	<i>Creating the Architecture definition document is the final step detailed by TOGAF within the Business Architecture phase. In practice, is this document produced using the methodology specified by TOGAF?</i>	DD9	19
ID	<p>If the company you are working with is evolved, having an architecture baseline, framework and people working as architects; then you can use the same kind of terminology and this kind of document. On the other hand, if you have a project driven organisation method, they do not use this kind of methodology. They'll use maybe prince II, the project initiation document. And then, if you are new architect within that kind of environment, you have to take that information and put it in the PID (Project Initiation Document) from Prince documentation. So you have to take your information to the right environment when the maturity of the company is. But it is also an issue with the TOGAF because if you talk about phases, basically, you get an idea. Then you get to operations, development, all the phases that you have within the company. And this is also maintenance, and then you have the ending point that this is no longer use to us. If you have a Prince2 methodology, you have almost the same phases, and also TOGAF has almost the same phases.</p> <p>So, depending on stakeholder, or if you have a project manager, or if you have an architect, we are using almost the same phases, but they don't use the same terminology. In addition, they don't use the same documents from the different phases.</p> <p>They have their own. And you have to get In and look into the maturity of the company. A company at the lower levels of maturity scale are more project oriented or project driven, the project manager can say for instance: "we need to do this project because..." and then he or she gets funded, and they see the business value. But if you have a series of projects, then you have a problem! What project would be the most effective, what would give you the most cash terms? And then you have the architecture point of view. What is your position of the maturity of that company? That is the beginning in the maturity scale because the other stage of the maturity are project oriented, and decisions and then you go up in the maturity and you find more culture driven environment and collaborative environment, and you have all of these kind of stakeholders and roles that work together in another way. So, it's quite hard if you are working within as an architect on an environment, which is not so much mature.</p>	DD9	20
Re	<i>Well, that is it for today. We want to thank you for your time and for providing us the information for our thesis.</i>		21
ID	Great. Don't hesitate to contact me if you need any additional information.		22

Appendix 3e – Interview Transcript with Symfoni

Date: 04/04/2012

IE = Informant E

Re = Researcher

Person	Conversation	Code	Line
RE	<i>I think it would be best if we commenced this interview by providing you with a brief background that details what we are doing. We've started our thesis at Lund University. The thesis is within the EA domain, with the main aim of the thesis set to comparing TOGAF's prescribed steps for implementing the Business Architecture phase (within an Enterprise Architecture project) with the practical guidelines for implementing this phase. As such, the main reason we are conducting this interview is to establish what the practical perspective regarding Business Architecture's implementation actually is.</i>		1
RE	<i>Could you now please provide us with a brief background of your industrial experience within the Enterprise Architecture field?</i>		2
IE	I am the Director of Strategy and Enterprise Architecture at Symfoni. In the past I have held senior roles at various global corporations.		3
RE	<i>Ok thanks for that. Getting right into the thick of things. TOGAF's first prescribed step in Business Architecture is the selection of reference models and tools. What are the key differences that exist between this step, as prescribed by TOGAF and its practical implementation?</i>	SV1	4
IE	We do use viewpoints or views. My understanding is if you collect data, you want to view it in different relationships. So you want to see what portfolio do I have of requirements and how do they relate to applications. Or how do the applications relate to on-going projects? I can have more views addressing different metadata. We have pre-built reports or visualisations that address the data. It is useful in practice to make things visual. We also do reference models, but we tend to do it more business wide, so we have these capability structures, which are like a reference model, to a certain extent.	SV1	5
RE	<i>Step two in TOGAF prescribes developing the baseline Business Architecture description, is this accurate in terms of its practical implementation?</i>	DB2	6
IE	You would need to develop the baseline, but I would merge these stages (baseline architecture, target architecture and gap analysis). If I am managing a project then there is always someone on vacation or someone who is not here. In reality we just have the overall milestones and what deliverables we have concerning these milestones would make me happy.	DB2	7
RE	<i>Would the next practical step be to develop a Target Business Architecture description, as prescribed by TOGAF?</i>	DT3	8
IE	In my world, I see this more as a continuum. When I implement I make small changes, and likely I won't get to the 'to be' state. So how can we do a gap analysis between where we are today and a currently unknown future state? It becomes a little bit academic, whereas I tend to say if you think of assets such as lifecycles, then each one has a life. So by managing the lifecycle of all the information assets I think it is easier to make samples 1-2 years ahead and see what it looks like then. It is more like a continuum, and	DT3	9

	it does talk about continuum as well, but my 'to be' is if we do the current planning, then where will we be 1-2 years ahead?		
RE	<i>TOGAF then goes on to propose the concept of separating the baseline and target architectures before analysing the gaps that exist between the two; would this actually be done in practice?</i>	GA4	10
IE	Gap analysis causes issues. I'm probably affected by the tool side. But I see many more tools act a lot more on the 'to be' state while we use more of a lifecycle approach ourselves. There Could be migration issues and visualising these – how do we do that? The future world will have other products used that need to be supported etc.	GA4	11
RE	<i>The next TOGAF step prescribes defining the candidate roadmap components in order to prioritise activities over the coming phases. What do you think about this from a practical perspective?</i>	DR5	12
IE	Ok this is fine. We don't do it this rigidly. I don't see many of my clients implementing it as rigid as that but it is a good checklist to have.	DR5	13
RE	<i>Is it usually ok if you deviate from the prescribed steps then, even on a project that is implemented using TOGAF?</i>	DR5	14
IE	Most clients are fairly flexible when it comes to TOGAF. The most rigid customer was a Norwegian one where they had a decision in the health region to use TOGAF, so it is vital that the tool supports anything and everything in TOGAF but this is a unique case. Most other organisations are more pragmatic.	DR5	15
RE	<i>TOGAF also prescribes identifying any impacts that the Business Architecture has on pre-existing architecture, with a plan for identifying and resolving impacts put in place. Would this be the case when practically implementing an EA project?</i>	AL6	16
IE	The business' personnel need to understand the impact, so that's a complication, as the soft skills of TOGAF are not well addressed. Again this is a good checklist to have, but a little on the rigid side of things meaning that it would need to be adapted.	AL6	17
RE	<i>Would you follow the steps prescribed by TOGAF in the main though? How would you typically work through this?</i>	AL6	18
IE	For example, If you want to have a landscape of what applications do we have, this leads us to the next question of who are the owners of it? Who should maintain the data? If you are an IT owner you should be aware of the integrations. Then you need the integration info. Then you ask to see who the owner is etc. This way you get more info and more owners and roles. Then you can construct a workflow. If you don't have an object owner, you have a portfolio owner. In this way you can automate and delegate the workload further out in the organisation, taking the burden away from the core of the implementation team, but get a more federated model. That's typically how we would implement.	AL6	19
RE	<i>Another of TOGAF's prescribed steps advocates conducting a formal stakeholder review. Would you actually do this when implementing an EA project?</i>	SR7	20
IE	Stakeholder reviews are fine. The important thing to note here is getting people involved or on-board. One of the main ways of doing this is to show them something, visualise what we are trying to establish through pictures and images. I like to do increments, so when I have projects that take years to implement, I like to have milestones every few months, because then I can have something to show. People buy into things when they see it's cool! I want to be part of that success! That's why I do it in small projects increment by increment.	SR7	21
RE	<i>One of TOGAF's last prescribed steps for Enterprise Architects to carry out in this phase requires finalising the Business Architecture. In practice,</i>	FA8	22

	<i>would you do this, as prescribed by TOGAF?</i>		
IE	Yes this would be done. It looks fine, but like with all the other steps, it would not be done as rigidly as stated on paper.	FA8	23
RE	<i>Creating the Architecture definition document is the final step detailed by TOGAF within the Business Architecture phase. In practice, is this document produced using the methodology specified by TOGAF?</i>	DD9	24
IE	I don't produce these documents myself. They would be required from a project management perspective. It's more like our solution is keener on meta data. We have the info. So for the project we carve this out or what is needed from it then put this in docs, which are then shared as part of Prince II project management approval process. Then the question comes: Do you have these deliverables in place for these phases? Then you check this.	DD9	25
RE	<i>Ok thanks for that. That brings us to the end of our interview. We would like to sincerely thank you for your time in meeting us today.</i>		26
IE	No problems. It was a pleasure. I'm glad you could make it and good luck with writing your thesis.		27

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