A method for valuing architecture-based business transformation and measuring the value of solutions architecture
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2.

Positioning of Business Transformation and Architecture

This chapter describes the function of enterprise architecture and the role of architecture in respectively business transformation, strategy development and program execution.

2.1 Function of Enterprise Architecture

2.1.1 Generic Model

Abcouwer, Maes and Truijens (1997) introduced a generic model for information management, based on nine squares.

![Generic model for information management](image-url)
This model expands the basic model of Henderson and Venkatraman (Henderson, et al., 1992) and adds a Structure row and an Information and Communication column. In (IAF, 2007) is explained that architecture provides concepts and tools for the middle column and row. This paper uses the Integrated Architecture Framework to illustrate this point.

Based on this generic model, we can conclude that the main function of enterprise architecture is to link strategy-to-operation and to link business-to-IT. Strategy-to-operation means a consistent and univocal “translation” of high-level strategic directives to concrete rules, guidelines and structures that can be used by the operational process. Business-to-IT means that IT solutions support business processes optimally and, vice versa, business makes optimal use of technological possibilities.

2.1.2 Business Transformation
We define business transformation as follows:

**Definition 2-1. Business Transformation**
Business transformation is a management initiative to change the current situation to an envisioned future state, by changing the organization and the IT environment in order to align them with strategic goals.

Consider the following picture demonstrating the basic transformation mechanism:

![Diagram of Domain X and Domain X’](image)

_Figure 2-1. Basic transformation approach_

*Domain X* denotes the business and IT elements of some part of an organization. At some point in time (T) the domain starts a change process which will implement some changes, resulting in *Domain X’* at some future time (T+1). Each transformation process contains these basic steps:

1. Develop a business vision of the desired situation
2. Develop a business and IT strategy to achieve the desired situation
3. Create a blueprint of the desired situation, based on the business vision and on the business and IT strategy
4. Develop transformation scenarios to realize the desired situation, based on the blueprint
5. Implement the desired situation, based on the migration strategy and the blueprint

The role of enterprise architecture in this process is:

- **A supportive role during the development of the vision and the strategy.** Architecture may highlight new (technical) possibilities, to be included in the vision and strategy.
- **A leading role during the description of the new situation.** Architecture will structure and describe the vision into more detail.
- **A cooperative role during the description of the migration path.** Definition of the migration path is done co-operatively between line management, program management and architecture.
- **A controlling role during the implementation.** Architecture will restrict the choices of the implementation in order to improve the alignment between vision and implementation.

Is it possible to execute these steps without using architecture? The answer is – of course – yes; for many years, this process has been executed without a formal architecture approach. The role of architecture is therefore **supportive**, aimed to **improve the quality** of transformation processes. ’t Land et al. (2009) state: “The emerging instrument of enterprise architecture promises to provide management with insight and overview to harness complexity. Where classical approaches will handle problems one by one, enterprise architecture aims to deal with these issues in a coherent an integral fashion, while at the same time offering a medium to achieve a shared understanding in concept realization among all stakeholders involved and govern enterprise development based on this conceptualization. As such, enterprise architecture plays a key role in the governance of organizations and their evolution.” This leads to the following statement about the function of enterprise architecture:
Definition 2-2. Function of Enterprise Architecture

Enterprise architecture is a managerial instrument intended to improve the efficiency and effectiveness of business transformation initiatives.

Management has several instruments available to support business and IT transformation, e.g. planning, budgeting, sourcing instruments. The main differences between enterprise architecture instrument and other instruments is that architecture is content-based – it defines blueprints, describing business processes, applications and infrastructure and that architecture has a strategic, long-term point of view, whereas other instruments generally emphasizes shorter time-spans.

The main goal of enterprise architecture is to improve the organizational performance by aligning organizational structure, business processes, information assets, IT assets and infrastructure to the core goals and strategic direction of the organization.

With the term “Enterprise Architecture”, we mean the whole concept of business and IT architecture and not necessarily only the architectural deliverables. When referring to the outcomes of an architecture process we will use the term “architectural design”.

Definition 2-3. Architecture Design

An architectural design describes: “The fundamental organization of a system embodied in its components, their relationships to each other and to the environment and the principles guiding its design and evolution.” (IEEE 1471 definition).

2.2 Positioning of Architecture to Other Disciplines

2.2.1 Relation of Architecture to Strategy

According to Johnson and Scholes (1993 p. 16), strategic management is “taking decisions about major issues facing the organization and ensuring that the strategies are put into effect.” Strategic management has three main elements: strategic analysis, strategic choice and strategy implementation. They state: “There is strategic analysis, in which the strategist seeks to understand the strategic position of the organization. There is strategic choice, which has to do with the formulation of possible courses of action, their valuation and the choice between them. And there is strategy implementation, which is concerned with the learning how the choice of strategy can be put into effect, and with managing the changes required.”
Figure 2-2. Main Elements of Strategic Management according to Johnson & Scholes

The role of architecture in these phases varies according to the type of activity. See the table below for an overview of the role of architecture in strategic management.

<table>
<thead>
<tr>
<th>Strategic element</th>
<th>Role of Enterprise Architecture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Strategic Analysis</td>
<td>Limited. Executed by senior management.</td>
</tr>
<tr>
<td>Strategic Choice</td>
<td>Supportive. Architecture can have a supportive role in identifying strategic options and evaluation and the feasibility of these options.</td>
</tr>
<tr>
<td>Strategy Implementation</td>
<td>Leading for structuring the solution. Leading in guarding the alignment between strategy and design &amp; implementation.</td>
</tr>
</tbody>
</table>

Table 2-1. Role of Enterprise Architecture in Strategic Management

The value of architecture is mainly visible in the third strategic element; *Strategy Implementation*. In this thesis on the value of architecture, we will focus on the third element.

2.2.2 Relation of Architecture to Program Execution

Program management is the process of managing multiple ongoing interdependent projects. Project management is responsible for keeping projects within
budgets, within the agreed timelines and the allocation of resources. Architects are responsible for designing an optimal solution. Program management and architecture need to work together one from the process point of view; the other from the content point of view. There are several similarities between the role of program and project manager on one hand and enterprise architect and project architect on the other hand.

<table>
<thead>
<tr>
<th>Process Steering</th>
<th>Content Steering</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Program Level</strong></td>
<td><strong>Purpose</strong></td>
</tr>
<tr>
<td>• Program Management Office</td>
<td>o Led by program manager</td>
</tr>
<tr>
<td>o Led by program manager</td>
<td>• Architecture Design Office</td>
</tr>
<tr>
<td>• Purpose</td>
<td>o Led by enterprise architect</td>
</tr>
<tr>
<td>o To manage process-related issues</td>
<td>• Purpose</td>
</tr>
<tr>
<td>▪ Time, money, resources</td>
<td>o To manage content-related issues</td>
</tr>
<tr>
<td>o Align individual project process-wise</td>
<td>▪ Scope, interfaces, functionality, structure</td>
</tr>
<tr>
<td>• Use a program charter</td>
<td>o Align individual project content-wise</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Project Level</th>
<th><strong>Purpose</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>• Project plan</td>
<td>• Use an enterprise architecture</td>
</tr>
<tr>
<td>o Responsible: project leader</td>
<td>• Solutions architecture</td>
</tr>
<tr>
<td>o Needs approval from PMO</td>
<td>o Responsible: solutions architect</td>
</tr>
<tr>
<td>o Provides process-related directions for design and development</td>
<td>o Needs approval from ADO</td>
</tr>
<tr>
<td></td>
<td>o Provides content-related directions for design and development</td>
</tr>
</tbody>
</table>

Table 2-2. Comparing roles of program and project management and Architecture