

# The Relationship Between Enterprise Architecture Artifacts

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## Introduction

Enterprise architecture (EA) is a description of an organization from the integrated business and IT perspective intended to facilitate information systems planning. Popular EA frameworks<sup>1,2</sup>, books<sup>3,4</sup> and even academic articles<sup>5</sup> suggest that EA provides comprehensive descriptions of the current and future states of an organization as well as a transition roadmap between them. Essentially, the mainstream EA literature typically describes EA as a thick “book” full of various diagrams with four distinct “chapters”: business architecture, data architecture, application architecture and technology architecture. A relatively well-known EA guru Jaap Schekkerman even argues that EA is a “complete expression of the enterprise”<sup>6</sup> (page 18). Accordingly, mainstream approaches to EA, e.g. TOGAF ADM, suggest that EA as a comprehensive book is developed step by step, chapter by chapter and then used as an instrument for planning.

However, all these approaches are based on the false belief widely promoted by John Zachman that organizations can be planned in detail like buildings or any other engineering objects. These approaches represent typical management fads and cannot be successfully implemented<sup>7,8</sup>, while successful EA practices do not resemble these approaches in any real sense<sup>9,10,11</sup>. Unsurprisingly, my analysis shows that the EA documentation in successful EA practices neither can be represented as two separate descriptions of the current and future states, nor can be easily split into distinct chapters (e.g. business, data, applications, etc.). Instead, individual EA artifacts often describe multiple domains simultaneously, can describe various points in time and can even be essentially timeless. Moreover, EA in general cannot be described as a comprehensive “book”, which is developed and then used, but rather as a set of diverse EA artifacts with different stakeholders, lifecycles, usage and complex interrelationships.

## Stakeholders, Lifecycles and Usage of EA Artifacts

Previously I reported that the notion of EA can be explained by the CSVLOD model, which articulates six general types of EA artifacts used in all mature EA practices: *Considerations*, *Standards*, *Visions*, *Landscapes*, *Outlines* and *Designs*<sup>12,13</sup>. *Considerations* (principles, policies, maxims, etc.) are global conceptual rules and fundamental considerations important for business and relevant for IT. *Standards* (technology reference models, guidelines, reference architectures, etc.) are global technical rules, standards, patterns and best practices relevant for IT systems. *Visions* (business capability models, roadmaps, future state architectures, etc.) are high-level conceptual descriptions of an organization from the business perspective. *Landscapes* (landscape diagrams, inventories, platform architectures, etc.) are high-level technical descriptions of the organizational IT landscape. *Outlines* (solution overviews, conceptual architectures, options papers, etc.) are high-level descriptions of specific IT initiatives understandable to business leaders. *Designs* (solution designs, solution architectures, project-start architectures, etc.) are detailed technical descriptions of specific IT projects actionable for project teams.

*Considerations* represent the overarching organizational context for information systems planning. Their purpose is to help achieve the agreement on basic principles, values, directions and aims. *Considerations* are permanent EA artifacts which live and evolve together with an organization. They are developed once, updated according to the ongoing changes in the business environment and used to influence all architectural decisions. For example, a set of ~10-20 architecture principles is established once by senior business leaders and architects and then periodically reviewed and updated, often on a yearly basis. These principles drive all EA-related decisions and thereby influence the development of *Visions*, selection of *Standards* and evolution of *Landscapes* as well as architectures of all IT initiatives described in *Outlines* and *Designs*.

*Standards* represent proven reusable means for IT systems implementation. Their purpose is to help achieve technical consistency, technological homogeneity and regulatory compliance. *Standards* are permanent EA artifacts which live and evolve together with an organization. They are developed on an as-necessary basis, updated according to the ongoing technology progress and used to influence architectures of all IT initiatives. For example, technology reference models are developed gradually by architects and periodically updated when new technologies emerge on the market. Technology reference models provide technology selection guidelines to all *Outlines* and *Designs* developed for specific IT initiatives and thereby shape resulting *Landscapes*.

*Visions* represent shared views of an organization and its future agreed by business and IT. Their purpose is to help achieve the alignment between IT investments and long-term business outcomes. *Visions* are permanent EA artifacts which live and evolve together with an organization. They are developed once, updated according to the ongoing changes in the business strategy and used to guide IT investments, prioritize IT initiatives and initiate IT projects. For example, business capability models are developed once by senior business leaders and architects and then periodically “re-heatmapped” based on the changing business priorities. Heatmapped business capabilities initiate *Outlines* for new IT initiatives and guide the selection of *Standards*, evolution of *Landscapes* and development of *Designs*.

*Landscapes* represent a knowledge base of reference materials on the IT landscape. Their purpose is to help understand, analyze and modify the structure of the IT landscape. *Landscapes* are permanent EA artifacts which live and evolve together with an organization. They are developed on an as-necessary basis, maintained current to reflect the evolution of the IT landscape and used to rationalize the IT landscape, manage the lifecycle of IT assets and plan new IT initiatives. For example, landscape diagrams are developed gradually for different areas by architects and periodically updated when new IT systems are introduced or existing IT systems are decommissioned. Landscape diagrams provide the descriptions of the existing IT environment for planning all *Outlines* and *Designs* of new IT solutions.

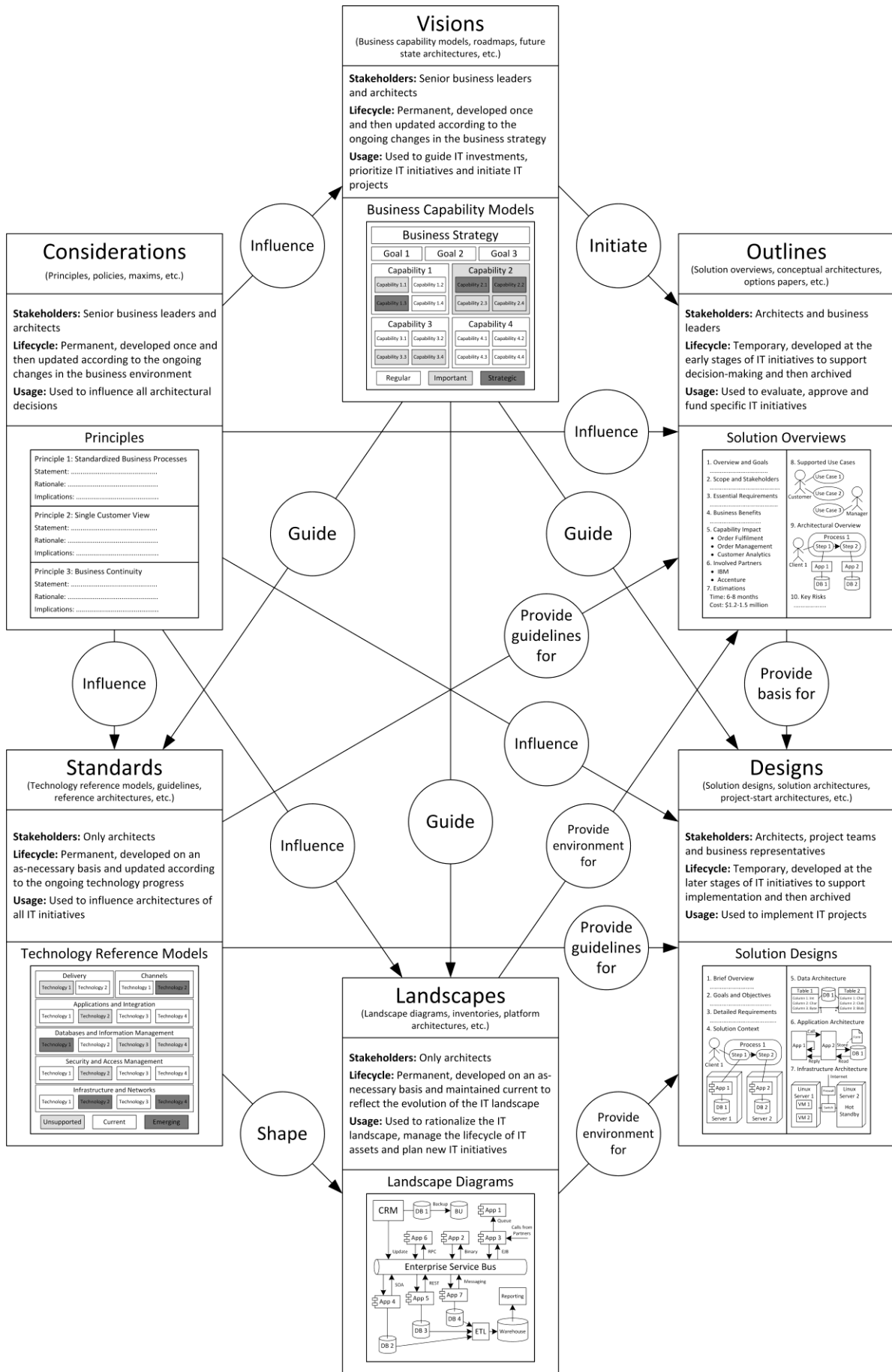
*Outlines* represent benefit, time and price tags for proposed IT initiatives. Their purpose is to help estimate the overall business impact and value of proposed IT initiatives. *Outlines* are temporary EA artifacts which are short-lived, single-purposed and disposable. They are developed at the early stages of IT initiatives, used to evaluate, approve and fund specific IT initiatives, but then archived after investment decisions are made. For example, solution overviews are developed by architects and business leaders for all new IT initiatives to stipulate key requirements, discuss available implementation options and support investment decisions. After the IT initiatives are approved, solution overviews lose their value, but provide the initial basis for developing more detailed technical *Designs* for these IT initiatives.

*Designs* represent communication interfaces between architects and project teams. Their purpose is to help implement approved IT projects according to business and architectural requirements. *Designs* are temporary EA artifacts which are short-lived, single-

purposed and disposable. They are developed at the later stages of IT initiatives, used to implement IT projects, but then archived after the corresponding projects are implemented. For example, solution designs are developed by architects, project teams and business representatives for all new IT projects to stipulate detailed requirements and describe required IT solutions. After the IT projects are implemented, solution designs lose their value and get stored in organizational document repositories.

### **Relationship Between EA Artifacts**

The relationship between the six general types of EA artifacts of the CSVLOD model<sup>12, 13</sup> described above are shown in Figure 1.



## Figure 1. Relationship Between EA Artifacts

Figure 1 explains the internal structure of EA as a complex set of different interrelated EA artifacts. As evident from Figure 1, EA can hardly be conceptualized as a single “book” providing a “complete expression of the enterprise”, but rather as a complex ecosystem of different interacting elements. EA is not “developed and then used”, but consists of different types of EA artifacts with different lifecycles, some permanent and some temporary, which co-evolve together in organizations.

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