

Six Viewpoints of Business Architecture



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Preface

About Business Architecture

Business architecture is a practice (or collection of practices) associated with business performance, strategy and structure. The business architect is expected to take responsibility for some set of stakeholder concerns, in collaboration with a number of related business and architectural roles, including

- business strategy planning, business change management, business analysis, etc.
- business operations, business excellence, etc.
- enterprise architecture, solution architecture, data/process architecture, systems architecture, etc.

Conventional accounts of business architecture are often framed within a particular agenda - especially an IT-driven agenda. Many enterprise architecture frameworks follow this agenda, and this affects how they describe business architecture and its relationship with other architectures (such as IT systems architecture). Indeed, business architecture is often seen as little more than a precursor to system architecture - an attempt to derive systems requirements from business requirements, and to justify systems investment in terms of business performance and strategy.

By the way, when people talk about systems architecture or systems requirements, this usually implies a fairly limited notion of system. When the same people talk about enterprise-as-a-system, this implies a rather different notion of system. For further discussion of this point, please see my LeanPub book on [Next Practice Enterprise Architecture](#).

This perception of business architecture can be explained when we trace today's prevailing practices back to their historical source. For example, a lot of influential work was done by IBM from the late 1970s onwards, in which business strategy planning was regarded primarily as a precursor to information strategy planning. This work found its way into many methodologies and frameworks including Information Engineering and the Zachman framework, and many business architects today still rely largely on concepts and techniques that were developed and popularized in the 1980s. These concepts and techniques have been refined, and new notations have been developed (notably UML, BPMN and Archimate) but the underlying thinking hasn't changed much.

However, business architecture is not constrained by its historical roots in IT. A broader conception of business architecture is now emerging, which combines IT concepts and techniques with concepts and techniques from other disciplines, including systems thinking, design thinking and management science. This broader conception of business architecture has a much broader agenda - not just providing input to systems planning, but directly identifying and tackling a range of structural business problems.

One of the reasons why this is necessary is that business organizations themselves are becoming more complex, in response to growing complexity in the environment. (The ability to respond adequately to the complexity in the environment is what systems thinkers call Requisite Variety.) The modern enterprise is facing an array of complex structural problems, which cannot be solved with traditional process and organization structures and require architectural thinking. There are hundreds of strategic and tactical decisions that need to be reasonably congruent (aligned, coordinated, integrated, joined-up, orchestrated, synchronized - choose your favourite word) if the enterprise is to perform well and deliver value to its stakeholders - decisions affecting incentive structures, cost accounting structures, product and service

bundling, pricing structures (especially in multi-sided markets), outsourcing patterns, and many more - and aligning the IT systems with all of this stuff is only a small part of the task.

Here's the critical point. Structural complexities in any business can critically affect business performance. Thinking architecturally about the business will help us to identify and overcome the structural inhibitors to business performance. Thus an explicit business architecture should help coordinate specific forms of congruence and requisite variety across all human activity systems, including management information systems (IS/IT) and management reward systems (HR).

In short, business architecture helps us think clearly about a number of things. For example

- how business structure affects business performance, both short-term and longer-term
- how to define and justify meaningful structural change
- how to communicate critical structural issues to key stakeholders
- and for those interested in managing systems of various kinds, how to plan and govern systems activity from a business viewpoint

About this booklet

This booklet describes a series of architectural viewpoints that can be used to explore business problems with affected stakeholders, and to plan their (re)solution.

The Viewpoints booklet is not intended to be self-contained, but serves as the first installment of a longer work. The whole work will need examples and practice guidelines, including a series of practice pathways.

Who is the whole work intended for? When I was running training workshops, I was getting a fair number of business analysts who were being pushed into more architectural roles, and needed to think more architecturally about business problems and requirements. I don't want to get bogged down in the exact division of labour between business analysis and business architecture, but I think there is a shift in emphasis that calls for a significant upskilling.

Underlying the book, and what motivates me to write the book in the first place, is a set of ideas about what I think is important for business architecture. So a secondary audience is the business architecture community and its thought-leaders. I believe there are some things missing from some of the popular accounts of business architecture, especially those that are dominated by process thinking. However, this work is not intended as an explicit manifesto.

Unresolved issues

Further booklets on business architecture are in preparation, including some detailed examples and practical guidance. I am currently undecided whether to release each booklet separately, or to bundle them all into a single book.

A key dilemma in producing this kind of material is how prescriptive I should be. Should I insist on this method or that notation, or should I just explain the basic concepts and leave the reader to choose? (This is a dilemma one faces with training courses as well.)

About this version

You are now reading an incomplete draft version. If you are registered on the LeanPub website, you can download the latest version at any time.

If you think anything is missing or unclear, or if you disagree with what I've written, please let me know, and I shall try and respond to your comments in the next release.

Acknowledgements

Much of my thinking and experience on business architecture has been developed over more than two decades. As well as countless practical projects, I have benefited from participation in a number of critical research and development initiatives. I should like to thank a number of former research colleagues, including Paul Allen, Carl Bate, Sally Bean, Graham Berrisford, Tony Bidgood, Philip Boxer, Bernie Cohen, John Dobson, Nigel Green, David Iggulden, Mark Lycett, Ian Macdonald, Clive Mabey, Michael Mills, Mike Martin, Chris Partridge, David Sprott, Philip Veasey, Aidan Ward and Lawrence Wilkes.

I have also benefited from vigorous debate with many friends and associates, as well as countless Internet buddies. Far too many to list - you know who you are - thanks to everyone.

Much of the material in this booklet has been taken from a Business Architecture Workshop, which was run by Unicom in the UK. Many thanks to the delegates for their comments and questions, which have been invaluable in helping me to refine and clarify the material.

1. Models and Viewpoints

1.1 Everything has an architecture

A business may look a complete mess - fragmented, dysfunctional, chaotic - and we might be tempted to say that such a business doesn't have an architecture at all. But there are still structural and behavioural patterns that can be discovered by careful observation and analysis, and these structural and behavioural patterns are what constitute its architecture.

When we look at a chaotic business organization, we might ask whether this organization was really planned that way, or was there really a complete absence of planning? Both possibilities are unlikely. What is more likely is that the founders of the organization had some structural ideas and attempted to implement these ideas, perhaps with some success, but the actual structure has evolved and gotten more complicated over time. So we must distinguish two different things here - the AS-WAS architecture (the original structural ideas) and the AS-IS architecture (what it is today). The AS-WAS architecture might even have been produced by an architect; the AS-IS architecture is usually generated by evolutionary drift.

The AS-WAS architecture might once have been complete or incomplete, consistent or inconsistent. This barely matters now, because it doesn't exist anywhere except in people's heads. If there is any documentation at all (probably not much, but you may find an organization chart), it typically describes the AS-WAS architecture rather than the AS-IS architecture. And when we talk to people inside the organization, they often tell us things that are closer to the AS-WAS architecture (what they imagine is supposed to happen) rather than the AS-IS architecture (what is really happening). The AS-WAS picture may be simpler and more persuasive, whereas the AS-IS picture is often complicated and hard to understand. Architects don't generally set out to model the AS-WAS architecture, but they may be misled, not only by out-of-date documentation but by false simplifications.

Obviously if you want to solve practical structural problems, you have to start from what actually exists, rather than from a grossly simplified and outdated view. So the first task of an architect is often architectural discovery - trying to produce an accurate model of the AS-IS architecture.

We might have some preliminary ideas about structural change - shifting towards some improved structure, removing the bad patterns, introducing good patterns, developing a TO-BE architecture - but we can only progress these ideas systematically when we have a clear and reasonably accurate picture of the AS-IS architecture.

So the business architect works with systematic models of AS-IS and TO-BE architecture, and uses these models to explore structural issues with all affected stakeholders. These models therefore need to be both clear enough to communicate, and rigorous enough to support systematic analysis. (We shall come back to these criteria later.)

1.2 Structure and ...

Structure and behaviour

Structure and function (Maturana)

Structure and strategy

1.3 Scope, purpose and perspective

Architectural models of the enterprise can be distinguished in three ways - scope, ends (purpose) and viewpoint (perspective).

Given that we are not trying to model the universe, a useful model needs to have a clearly delineated scope. Are we modelling operational activities only, or management activities as well? Are we only interested in the activities of our own employees, or are we also interested in the activities of customers and third parties? Are we modelling indirect as well as direct value?

We also have a particular purpose for modelling. A model whose purpose is defined in terms of IT will look very different to a model whose purpose is defined in other terms.

Perspective helps us to address the question: What kind of system is the enterprise being understood as? For example, the (micro-)economic perspective views the enterprise as a production system (value chain or value network), while the management cybernetic perspective (such as Stafford Beer's Viable Systems Model) views the enterprise as a thinking system or brain. Gareth Morgan's book *Images of Organization* contains a good survey of several contrasting perspectives.

Many enterprise architects adopt the traditional IT perspective of regarding the enterprise as an information processing system. Many of the well-known EA frameworks take this perspective.

However, business architects often need to combine this perspective with complementary perspectives such as a socio-cultural perspective.

1.4 On views and viewpoints

Does it make sense to produce a business architecture from a single viewpoint, such as a Process Viewpoint or a Capability Viewpoint? Or do we need a proliferation of viewpoints, perhaps arranged in a 2-dimensional matrix such as the [Zachman Framework](#)?

It is generally impossible to fully understand a complex system, and to address all the possible concerns of all stakeholders, in a single picture or model. For this reason, business analysts and business architects produce a range of views of a complex system.

In business architecture, each view is a representation of a business from a particular perspective or viewpoint, and we may have several views from the same viewpoint. A viewpoint directs our attention to certain aspects of the business in a consistent way - giving us consistency of style (notation) and perspective, as well as reasonable similarity in granularity and scope.

This consistency is important for comparison between different views - for example, when we wish to compare the present state of the business with some projected future state, or we wish to compare two alternative blueprints.

This consistency is also important for collaboration. If everyone uses a different modelling style, then it is harder to share and communicate models.

And consistency is important for tool support. Architects can use modelling tools that support a range of different viewpoints, and it helps to use the tools in a consistent manner.

1.5 Linking viewpoints

Okay, so now we have a collection of different views, from different viewpoints, describing a complex system such as an enterprise. What happens when we put these views back together?

If the views don't fit together, it means one of two things. Either at least one of the views is wrong or incomplete - in other words, it fails to provide a satisfactory description of the chosen aspects of the enterprise. Or it means that the enterprise itself is dysfunctional in some way - in other words, our architectural analysis has exposed some flaw or hole or disconnect in the architecture of the business.

This kind of architectural analysis is important both when modelling existing architectures (AS-IS) and when producing blueprints of future architectures (TO-BE). A discovered flaw in the AS-IS architecture might help to explain some current performance problems, and could then lead to some architectural repair - for example, closing the hole or bridging the disconnect. And a discovered flaw in the TO-BE architecture represents a risk that the TO-BE architecture won't work properly as planned.

So there is an need for architects to understand the mappings between different viewpoints - and this of course gives us another reason to produce multiple viewpoints in the first place.

When enterprise architects talk about alignment, this generally means aligning a view from one viewpoint with a view from another viewpoint. When IT folk talk about what business architecture is for, they often say things like "instrumenting alignment between business performance targets and operational priorities" (IBM) or "aligning solutions to business priorities" (Gartner). What this means in practice is that the business architect must have an accurate view of (a) business performance targets (b) solutions and (c) business/operational priorities - among other things - and then be able to produce robust mappings between these views. This may involve mappings (alignment) between the business architecture domain and other domains (such as IT solution architecture) as well as mappings within the business architecture domain itself.

1.6 How many viewpoints?

So if we need multiple viewpoints, how many is enough? Zachman has his famous six questions, taken from Kipling's *Elephant's Child*. The OMG Business Architecture Working Group has proposed five viewpoints, which I have modified and added a sixth, and it is this set of six viewpoints that is presented here. I am not dogmatic about the number six, and if you feel other viewpoints are helpful then feel free to use them, with the following caveats.

- Every additional viewpoint creates more architectural work - especially the need for more mappings.
- If you invent an idiosyncratic viewpoint that nobody else understands, then this will prove a barrier to communication.
- There is a small advantage in using viewpoints that are supported by existing modelling tools, although this should not be an overwhelming consideration.
- Standardization (ISO 42010) encourages us to reuse viewpoints and avoid unnecessary proliferation.

1.7 Six Views of Business Architecture

Okay, so here are the six views, representing a modified extension of the OMG framework. (Strictly speaking these are viewpoints rather than views, but I'm trying to stick to the OMG terminology as far as possible.)

The **Motivation View** describes what the business achieves for itself and its stakeholders (direct and indirect value). It specifies desired, potential and actual performance in terms of purposes, goals and objectives as well as positive and negative outcomes.

(The OMG calls this the Business Strategy view, but I think this is a misleading name. The strategy doesn't reside in motivation or purpose, but in how the business mobilizes itself to satisfy some set of motivations and purposes.)

The **Capability View** describes how the business delivers direct and indirect value in response to the challenges of the environment.

The **Activity View** describes the day-to-day behaviour of the business, or what the OMG calls "business in motion". Traditionally processes are seen as a chain of value-adding process steps, thus the OMG calls this the Value Stream view. However, the value network paradigm looks significantly more powerful than the value chain paradigm, and I prefer to use the neutral term Business Activity.

The **Knowledge View** is a well-established architectural viewpoint, previously known under various names such as Conceptual Information Model or Business Data Architecture. It basically captures what the business knows, and the semantics of how the business talks to itself and its partners. Among other things, this viewpoint is critical for business interoperability.

The **Responsibility View** captures the relationships between individuals and organizations in terms of responsibilities and commitments. These relationships and organizational interfaces may be represented as services, with various levels of formality in defining and measuring service levels. The OMG calls this the organizational view, and defines it in terms of the relationships between organizational units.

The view I've added to the OMG set is the **Cybernetic View**, which describes the management and governance of the enterprise, showing how the business responds to actual and anticipated events. This viewpoint covers all the aspects of organizational intelligence, from information gathering, through sense-making and decision-making, to organizational memory and learning.

Hybrid Views

These views are not sacrosanct, and there are some useful business models that may not fit neatly into these six viewpoints. For example, Martin Ould's Activity Role Diagrams seem to involve a combination of Activity and Responsibility, while Stafford Beer's [Viable Systems Model](#) combines the Capability view and the Cybernetic view.