

Business Architecture: The Missing Link between Business Strategy and Enterprise Architecture

SOA Consortium EA2010 Working Group

Executive Summary

The SOA Consortium's EA2010 Working Group – a group of “street-smart” enterprise architecture practitioners – has been actively discussing the domains, services, practices, and skills required for a thriving, business relevant enterprise architecture practice in the 2010s.

A critical finding of these discussions is the emphasis on technology concerns at the expense of business understanding and, ultimately, true business enablement, in most enterprise architecture practices today. Successful enterprise architecture practices in the 2010s must give equal emphasis to technology and business concerns. The means for this re-balancing is the elevation, and, in some cases, initial adoption, of business architecture practices.

We define *business architecture* as the formal representation and active management of *business design*. Expanding this definition, business architecture is a formalized collection of practices, information, and tools for business professionals to assess and implement business design and business change.

Typically, the business architecture practices and artifacts in enterprise architecture frameworks focus on business processes and business uses cases. This is not surprising since these artifacts and practices are a prerequisite to IT-based business solution delivery. However, this is not sufficient.

To reap the benefits of business architecture – business visibility and agility – the business architecture must reflect the entire business design from the point of view of business designers and owners, rather than IT solution delivery. This point of view begins with business motivations, includes key business execution elements such as operating model, capabilities, value chains, processes, and organizational models, and transcends information technology representations, such as business services, rules, events, and information models.

While we strongly believe that business architecture is a business domain, the Chief Information Officer (CIO), given his/her unique position to view business plans, business processes, information flows, and technology portfolios across the organization, most often champions business architecture formalization.

For business architecture to succeed, the CIO and enterprise architecture group must take an honest look at the existing relationship between business and IT. The nature of the relationship – disenfranchised, customer-supplier, or collaborative – will dictate the level of effort required to find sponsorship, garner business participation, and deliver to objectives.

Once in place, the relationship between business architecture and information technology is two-fold. First, business architecture is a critical input to IT planning, technology architecture, and business solution delivery. Second, technology trends and IT capabilities influence business design choices in the realms of capabilities, value chains, processes, and channels.

The interdependencies of business architecture and information technology call for collaborative practices and organizational models. This connection is best structured as a true enterprise architecture practice, one that gives equal emphasis to business and technology concerns. This balanced model is our view of enterprise architecture in the 2010s.

Introduction

The SOA Consortium's EA2010 Working Group – a group of “street-smart” enterprise architecture practitioners – has been actively discussing the domains, services, practices, and skills required for a thriving, business relevant enterprise architecture practice in the 2010s.

The major domains we identified are technology architecture, business architecture, projects alignment, delivery, operations and measurement, and governance and enterprise architecture management.

Although all are critical to enterprise architecture success, the team chose to focus on business architecture because of the close ties to business-driven SOA success.

By “business-driven SOA,” we mean three things:

1. Creating a portfolio of services that represent capabilities offered by, or required of, your organization. Those capabilities may represent business, information, or technology concepts.
2. Composing or orchestrating those services along with events, rules, and policies into business processes and solutions that fulfill business scenarios.
3. Working towards a business outcome. That “business outcome” could be cost and complexity reduction via a rationalized IT portfolio. In other words, “business-driven” doesn't require a business person tapping you on the shoulder; it means executing for business reasons.

As a starting point, the team needed to agree on a definition of business architecture. We defined business architecture as *the formal representation and active management of business design*.

Expanding this definition, business architecture is a formalized collection of practices, information, and tools for business professionals to assess and implement business design and business change.

As stated above, the relationship between business architecture and information technology is two-fold. First, business architecture is a critical input to IT planning, technology architecture, and business solution delivery. Second, technology trends and IT capabilities influence business design choices in the realms of capabilities, value chains, processes, and channels.

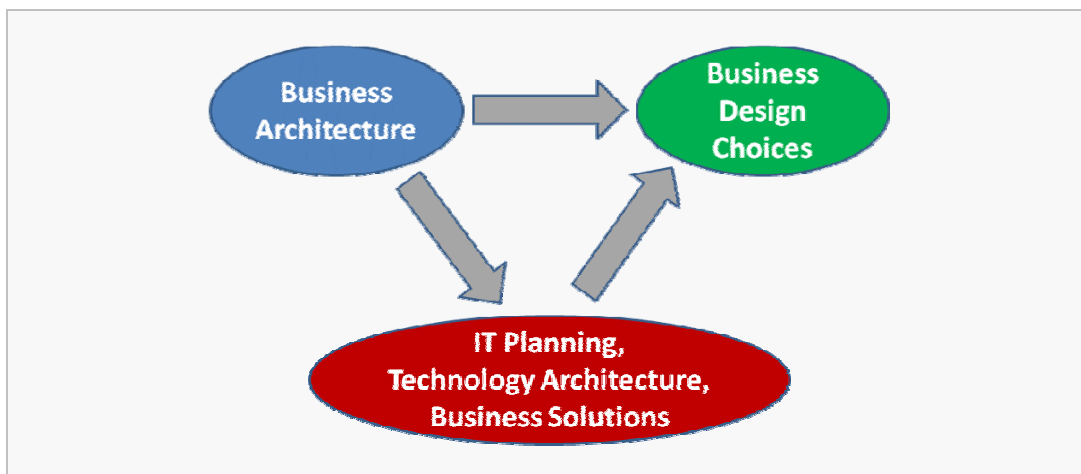


Figure 1. The Relationships between Business Architecture and Information Technology

The interdependencies of business architecture and information technology call for collaborative practices and organizational models. This connection is best structured as a true enterprise architecture practice, one that gives equal emphasis to business and technology concerns. Many enterprise architecture initiatives today do not have a balanced approach, and technology views dominate the perspective. The balanced model is our view of enterprise architecture in the 2010s.

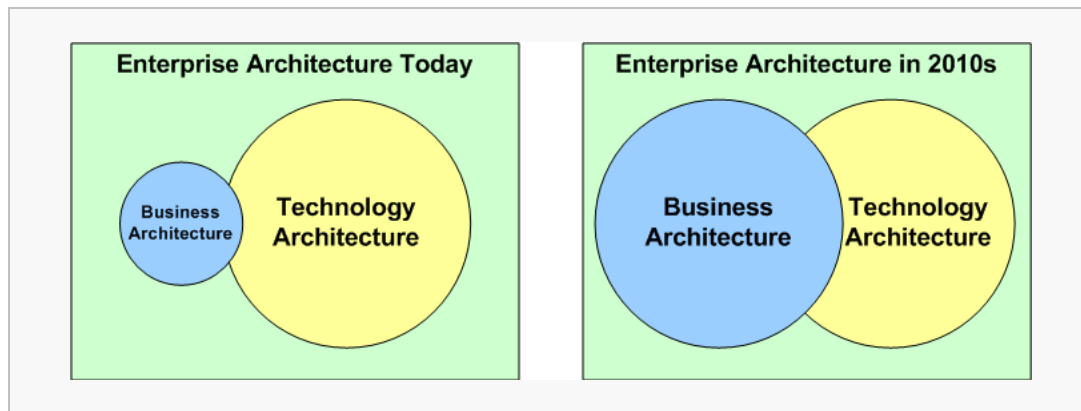


Figure 2. A Balanced Enterprise Architecture Practice

We recognize that our view is just that, our view. We welcome feedback – real-world experiences, and tips from fellow practitioners. Please see the summary on page 13 for details on how to participate in the discussion.

Given the historical emphasis on the technology side of enterprise architecture, this discussion-oriented paper delves into the business architecture aspect, sharing the team's findings on the following questions:

- What comprises business architecture?
- What is the purpose?
- Who participates?
- How do you make business architecture accessible?
- How does business architecture facilitate business decision-making and change?
- How do you keep business architecture current?

Before delving into our business architecture findings, we offer some enterprise architecture context.

Enterprise Architecture Context

Over the years, IT has accumulated many types of architectural domains and corresponding architecture disciplines to address each domain; e.g., IT has application architecture, infrastructure architecture, security architecture, information architecture, and more. Enterprise architecture has been broadly defined to encompass all of these architectural domains. Depending on which expert you ask, the area of enterprise architecture may include, use, or overlap with the newest architecture discipline: business architecture.

Most would agree that the field of enterprise architecture was officially established in 1987, with the development of the Zachman Frameworkⁱ. Since then, various IT standards bodies, government agencies, industry analyst groups, and enterprise practitioners have defined and refined enterprise architecture. Three widely recognized definitions are from The Open Group's Architecture Framework (TOGAF)ⁱⁱ, the United States General Accounting Office (GAO)ⁱⁱⁱ, and the MIT Sloan Center for Information System Research (CISR)^{iv}.

TOGAF describes enterprise architecture's purpose as supporting the business "by providing the fundamental technology and process structure for an IT strategy." The GAO defines EA as "a blueprint that describes an organization's or a functional area's current and desired state in both logical and technical terms, as well as a plan for transitioning between the two states." MIT's CISR defines EA as "the organizing logic for business processes and IT infrastructure reflecting the integration and standardization requirements of the firm's operating model." While the wording varies, the underlying common themes are

- a) enterprise architecture exists to optimize and align IT resources with business goals/objectives,
- b) enterprise architecture is manifested as a set of inter-related models, and
- c) these models are characterized using a prescriptive metamodel, such as Zachman's original work or one of CISR's four operating models^v.

For an IT organization to thrive, and for an EA program to succeed, it must understand the business it supports. Thus, EA frameworks and definitions, including the above three, incorporate some form of business architecture.

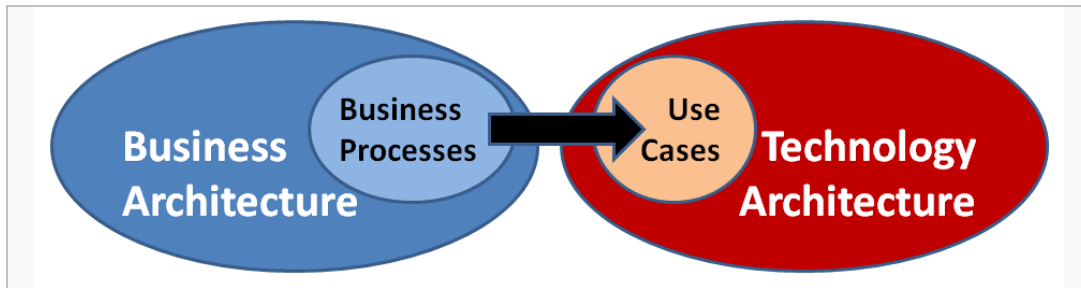


Figure 3. Business Processes and Use Cases are IT Prerequisites

Typically, the business architecture practices and artifacts in enterprise architecture frameworks focus on business processes and business uses cases. This is not surprising, since these artifacts and practices are a prerequisite to IT-based business solution delivery.

However, this is not sufficient. To reap the benefits of business architecture – business visibility and agility – the business architecture must reflect the entire business design from the point of view of business designers and owners, rather than IT solution delivery.

Business Architecture Overview

What is Business Architecture?

The EA2010 working group defines business architecture as *the formal representation and active management of business design*. Expanding this definition, business architecture is a formalized collection of practices, information, and tools for business professionals to assess and implement business design and business change.

Business Design. Business architecture must encompass the entire business design from the business designers' and owners' points of view. This begins with business motivations, includes key business execution elements – such as operating model, capabilities, value chains, processes, and organizational models – and transcends information technology representations, such as business services, rules, events, and information models.

Solely by the fact that they exist, all businesses have a business design. That design may be intended, explicit, and effective, or may be an implicit amalgamation of past actions and underperforming. Business architecture is the formal representation of business design, with the

intent to apply the business architecture information and supporting techniques to optimize the business design, and to facilitate ongoing change.

Formal Representation. Business architecture is formally represented via a variety of artifacts, including business motivation models, capability maps, value chain maps, process models, policy documents, organization charts, and product catalogs. The techniques used to produce and manage these artifacts vary by situation. Organizations focused on eliminating waste may employ Lean practices^{vi}, while organizations focused on competitive advantage may employ value chain analysis.

Active Management. For ease of accessibility, the business architecture artifacts should be managed in a repository. While business professionals are the primary creators and full owners, of these artifacts, IT is typically the caretaker of the business architecture environment, including underlying repository, information storage, user access, and, optionally, business performance integration.

Why Business Architecture?

Organizations need reliable and cost effective operations. Business architecture provides the mechanism to clearly illuminate how strategy, processes, business structure, and staff can best be utilized to deliver reliable and cost effective operations. With this clarity, business can enable new functions and services with the right resources and technology, effectively and efficiently.

Technology enablement is key to the majority of new functions and services. Business architecture helps organizations define the technology requirements and capabilities clearly, yielding IT plans and projects that align with business priorities and goals.

The following scenarios demonstrate how business architecture serves to improve operations and the alignment of technology to business needs:

Focus on value to the organization and the customer: Business architecture can help organizations analyze key value chains. Value chains are the functions and services that yield the most economic value for the organization and provide the organization's customers with the necessary services, products, and information to maintain loyalty. Value chains are the foundation of an organization's ability to compete and grow in dynamic market conditions. Clearly, understanding these value chains will help remove roadblocks, reduce risks, and improve efficiency in processes and technology, resulting in better bottom line results and customer loyalty.

Find synergies in generic processes: By highlighting the steps of business processes and their dependencies, organizations can eliminate duplicate operations, processes, and technologies across business units and functions. By consolidating and standardizing common operations, organizations can redirect budget, technology, and staff to focus on the organization's value-chains.

Provide the blueprint for business transformation: Many organizations are dealing with disruptive changes in markets and customer needs. They must make rapid and significant changes to remain competitive and to deliver goods and services that meet the new market and customer requirements. Business architecture provides the methods to analyze and plan how the organization should morph its structure, processes, technology, and staff.

Who Does Business Architecture?

According to the Business Architects Association^{vii}, business architecture is "performed by cross-organizational generalists who possess professional skills for transforming corporate strategy into business designs that enable corporations to increase market share, profit margins, and flexibility, while reducing risk."

While we strongly believe that business architecture is a business thing, the most likely origin of a business architecture practice is within IT. Our thinking revolves around the silo-like nature of business, versus the cross-enterprise perspective of IT. Obviously, the danger of this approach is that the business may be skeptical about the value of IT or, worse, refuse to participate.

As such, each enterprise architecture group must take an honest look at the existing relationship between IT and the business before embarking fully on a business architecture effort. The nature of relationship will dictate the level of effort required in finding the correct champion, garnering business participation, and delivering to objectives.

A key to business architecture success is the business IQ of the enterprise architecture team. Enterprise architects must be equally comfortable with both business and IT executives. He/she must possess business acumen to translate business partner strategies to IT groups as well as possess IT acumen to translate IT strategies to business groups.

As the enterprise architecture team strives to reach the business-alignment goal, other additional benefits accrue: appropriate levels of integration between business applications and data, improved IT delivery, lower IT costs, lower IT complexity, and, perhaps most importantly, lower IT operational risk. That is, IT becomes better, faster, cheaper, which clearly is of significant value to the business.

Business Architecture in Action

Google Your Business

Businesses are constantly exploring new strategies to increase efficiency or find new sources of revenues by introducing new products or services or by making acquisitions. The impact of implementing these strategic changes cannot be left to chance. Having access to business process definitions, organizational and other business information and their interrelationships can greatly enhance the chance of success.

In addition to strategic change, business may also need business architecture information for day-to-day activities to streamline operations or identify optimization opportunities, such as in the supply chain.

One of the primary value propositions of a business architecture practice is to facilitate change. Having accurate information at the fingertips of executives, line managers, and process owners facilitates change. The nature of information required will vary by the need of the consumer of business architecture information. For example, a CFO might be interested in understanding the costs associated with various business processes. Sales and marketing managers might want to know all about their customers and processes associated with managing customers.

We envision a mechanism by which business stakeholders can quickly search the business architecture repository to come up with answers needed to meet the information needs of business stakeholders. A keyword-based search should yield

- Artifacts in order of relevance
- Links to related artifacts
- Fact based answers

This search mechanism must apply policies to govern access to sensitive information.

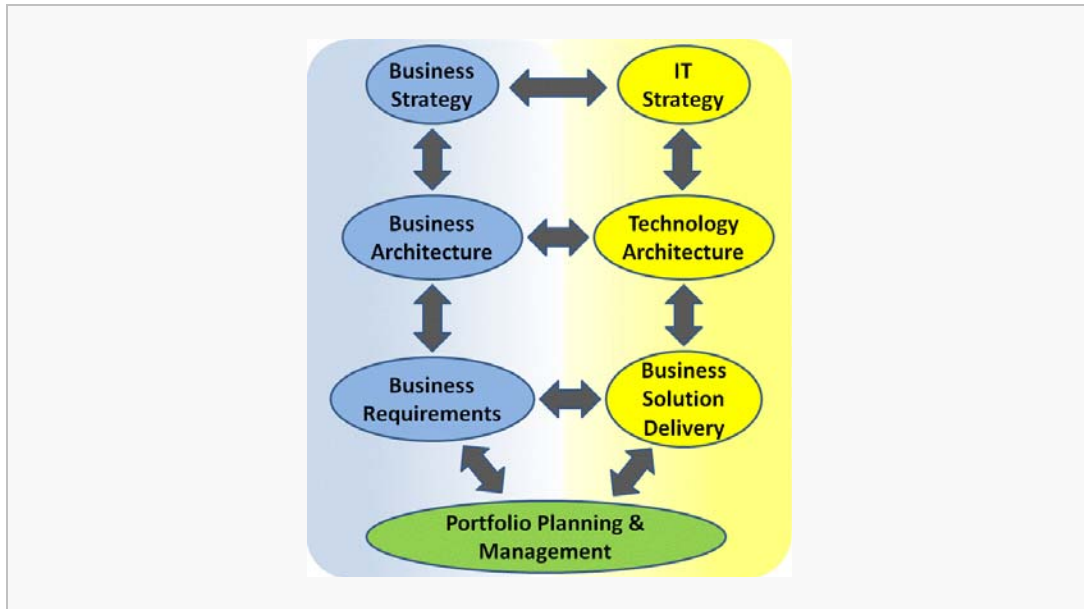
Business Architecture as IT Input

Figure 4. Business and IT Planning, Architecture and Delivery Interdependencies

With a business architecture there is a single, shared vision across the enterprise that informs every employee who their customers are, the value the enterprise provides those customers, and, at a high level, how that value is created, sold, and delivered to those customers. Strategic objectives are turned into goals, strategies, and measures, and their impact on the daily operation of the enterprise is understood and anticipated. Processes, activities, and systems are created to support the business goals and business architecture.

As the business environment changes, the enterprise is able to respond with agility, and everyone clearly understands the necessary organizational, skill set, process, and activity and system changes needed to meet these new challenges.

Keeping your Business Architecture Current

Business Architecture is only as useful as the information contained in it; therefore, governance processes must be established to ensure that business design changes and supporting business solution implementations are reflected in the business architecture repository. In addition, metrics should be established and tracked regarding the use of business architecture information.

In a mature business architecture practice, business analysis, design, and solution delivery processes would integrate to the business architecture repository, providing access to critical business design information and capturing all considered, pending, and implemented changes.

For detailed insights on the management and evolution of business architecture information, we recommend reviewing Levels 4 and 5 – Quantitatively Managed and Optimizing – of the Capability Maturity Model (CMMi)^{viii}.

Artifacts and Industry Examples

As mentioned throughout this paper, there are a variety of business architecture techniques, artifacts, and notation languages. Examples of techniques include Six Sigma, Lean, Value Chain Analysis, and Rummler Brache. Corresponding artifacts include SIPOC diagrams, value stream maps, value chain diagrams, and business environment models. Popular notations include BPMN™ and UML®.

A model we find useful is Nick Malik’s Enterprise Business Motivation Model (EBMM)^{ix}. The EBMM contains seven core models, covering these concepts: Influencer, Driver, Business Unit, Business Unit Capability, Business Model, Directive, Business Process, and Assessment. The compelling aspect of the EBMM is the traceability from business motivation to managed IT service.

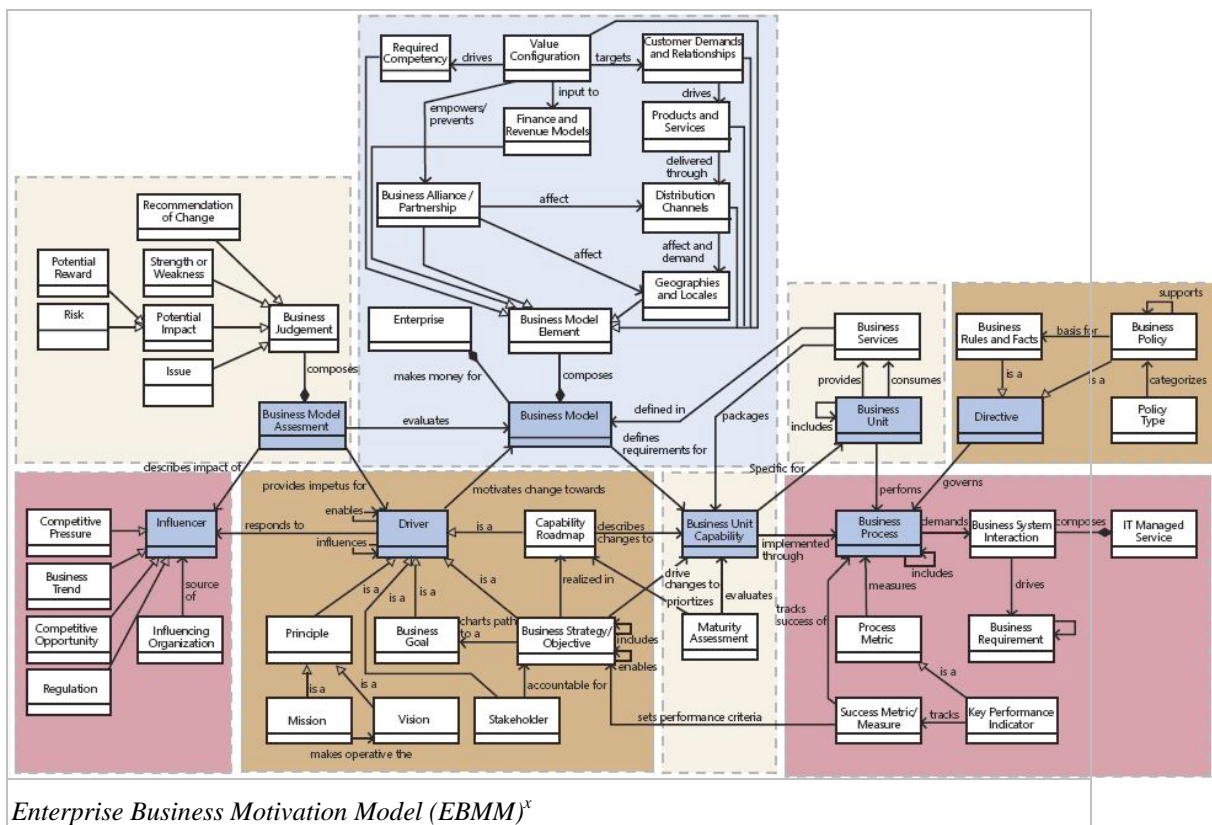


Figure 5.

Establishing Business Architecture Practice

Starting Points/Triggers

The initial scope and activities included within business architecture will depend in part on which group in the organization initiated the interest in business architecture: Did it come from the business itself (senior management)? Is it an IT-driven or IT-centric effort, meant to provide an underpinning to enterprise architecture? Or is it a joint effort to achieve better alignment between IT and the business?

The following activities may be part of the mission of business architecture:

- Illustrating how the business works, i.e., inventorying the business capabilities of the enterprise. This can lead the executive team to reorganize in order to clarify who is in charge of each capability.
- Identifying gaps in the organization, which could result in organization changes, but can also help determine what acquisition or merger strategies should be pursued, and who are the most appropriate M&A targets, in order to fill the gaps.
- Identifying the top end-to-end processes of the organization (e.g., “opportunity to cash,” “hire to retire,” “sourcing to delivery,” etc.). This can lead to better assignments of responsibilities to parts of the organization (so that responsibility is less diluted, or changes less often, as these processes unfold), or it can be a prerequisite to business process management, or at least lead to a prioritization of business process improvement efforts. Often, the simple identification and documentation of these end-to-end processes, and the awareness of which parts of the organization contribute to them at different stages, helps combat the silo effect by making different groups aware of the need to cooperate with each other.
- Helping management decide which capabilities must be provided internally (and nurtured appropriately), and which ones can be outsourced.
- Mapping the business capabilities to the business systems managed by IT in order to identify and resolve inconsistencies, duplications, or gaps.
- Establishing metrics to measure the performance of the organization. These metrics may in turn be used to influence the compensation of senior management, aligning a bonus structure with actual operational excellence.

Overcoming the Business Architecture Branding Problem

We have found that business architecture suffers from a positioning issue, or a “branding problem,” if the reader prefers that image. The issue stems from the fact that describing the design of the business using the word “architecture” typically stems from the *enterprise architecture* mindset, which originated in IT organizations, as a way to formalize the connections between applications, and between those and the computer infrastructure of the organization. Seen in this light, *business architecture* appears to be an idea or approach that IT people would like to foist on unsuspecting business folks who were busy doing their work until the CIO came along and disrupted their game.

A variant of this issue is when the executive team is very consciously engaged in “designing the business”: defining and owning the vision and the mission statement, determining and updating the key strategies, fine-tuning or redoing the organization, targeting acquisitions and divestitures, etc. Even if they like the phrase “business architecture,” their reaction may be “Well, that is what we’ve been doing, so who are you to come along and tell us how we’re supposed to do our work?”

A situation that may, unfortunately, be both the worst possible and the most probably is this: The business does *not* explicitly take care of business architecture, but they don’t want anyone else to come and tell them what it is (or that they should do it). In this all-too-common scenario, management reflection and actions about the vision, mission, strategies, and organization happen reactively, after something went wrong, and are conducted by one of the executives without formal training on this activity and without a formal blueprint.

How can one solve this “branding issue”? One way is to realize that results speak louder than concepts, and that case studies from other organizations can carry a lot of weight. This is a chicken-and-egg situation since compelling case studies of successful business architecture efforts are still few and relatively unspecific. However, bringing available case studies to the attention of senior management should be a key piece of this puzzle.

Equally important is the perception of the person who brings up this concept to the executives. If a CIO who is seen as the “plumber-in-chief” of the company’s infrastructure raises the need for business architecture, this will probably fail. But if the CIO is a peer who is trusted for her or his knowledge of methodologies and processes, then the suggestion is much more likely to be heard.

Business Architecture and Related Topics

Business Architecture and SOA

The connection point between service-oriented architecture (SOA) and business architecture was the starting point of the EA2010 journey. As experienced SOA practitioners, we recognized the importance of defining services that reflected business capabilities and enterprise information needs, as opposed to defining services that mimicked technology assets.

A point of discussion though, was on service analysis approaches that would result in well-defined, cohesive, relevant, business services. As we exchanged success and failure stories, we discovered that organizations performing true business architecture and analysis techniques, such as capability mapping, value chain analysis, and enterprise information modeling, were far more successful than organizations performing solutions and systems analysis techniques.

Business Architecture and BPM

In the “starting points” mentioned earlier, we said that “inventorying the business capabilities” and “identifying the top end-to-end processes” were two key activities that are part of business architecture. This implies a strong connection between business architecture and business process management, or BPM. Yet, as the list above also implies, BPM is not the only thing a business architect does.

BPM is a method or a tool that contributes to business architecture. Enterprise architects may see BPM as a way to rationalize business systems, and CFOs may see BPM as a way to find opportunities for headcount reduction through process simplification. Business architecture views BPM as something that implements the well-known principle that “you can’t improve what you can’t measure,” or perhaps Einstein’s admonition to “spend 90% of the time defining the problem, and 10% of the time working on the solution.” Documenting the “as-is” processes of the enterprise, using BPM techniques (and, potentially, BPM software), allows a business architect to identify and demonstrate

- Areas where responsibilities are clear and key functions are performed efficiently
- Areas where processes and responsibilities are unclear
- Orphaned area – A repeatable process may exist, but no one owns it
- Gaps in the organization’s skills – which could be solved by activities ranging from staffing a missing position to making an acquisition.

While the key skills of the business architect are to analyze the business and design changes to make it operate better, BPM is therefore a key competency too. BPM will provide the visual documentation of key processes that may elicit from executives a surprised “Oh, so THIS is what we do?” response, and will also usually result in some pragmatic, short-term improvements by the owners of the documented processes.

Summary and Discussion Questions

In this discussion-oriented paper, we articulated our belief that a business architecture practice is a must-have component of thriving, business relevant enterprise architecture practice in the 2010s.

After presenting our definition of business architecture – *the formal representation and active management of business design* – we shared our findings on the following questions:

- What comprises business architecture?
- What is the purpose?
- Who participates?
- How do you make business architecture accessible?
- How does business architecture facilitate business decision-making and change?
- How do you keep business architecture current?

In addition, wearing our enterprise architect hats, we discussed the relationship of business architecture and several critical business and technology constructs, including business-IT alignment, business process management (BPM), service-oriented architecture (SOA), and business solution delivery.

Discussion Questions

As mentioned in the opening, we recognize that our view is just that, our view. We welcome feedback, real-world experiences, and tips from fellow practitioners, business architecture consultants, and related solution providers.

Specifically, we would appreciate insights on the following:

1. Do you have suggestions and/or experience in making a business architecture practice actionable?
2. How have you resolved/overcome the business architecture branding problem?
3. Which business architecture techniques and artifacts do you find helpful?
4. How have you made your business accessible to business analysts, designers, and decision-makers?

Please share your feedback at our blog^{xi}, or via email to EA2010@soa-consortium.org

Authors

The key themes in this paper originated during EA2010 working group calls over the course of 2009. As such, we would like to thank all SOA Consortium members and guests who contributed to our discussions.

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^{ix} For a description of the EBMM, see <http://msdn.microsoft.com/en-us/architecture/aa699429.aspx>.

^x Diagram source: [http://i.msdn.microsoft.com/aa699429.art2fig10\(en-us,MSDN.10\).jpg](http://i.msdn.microsoft.com/aa699429.art2fig10(en-us,MSDN.10).jpg)

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