Scaling Business Architecture: Establishing a Foundation for Success

Abstract

Business architecture is taking off globally, with early and mid-stage adopters now positioned to scale business architecture across business units and initiatives. Impediments to scaling business architecture are linked to the lack of a foundational perspective, which in turn hampers opportunities to apply the discipline and achieve the successes that follow. This white paper provides an overview of how industry as a whole and organizations in particular are establishing the foundational perspective required to take business architecture to the next level of success. The discussion concludes with an overview of a formal metamodel that serves as the basis for the business architecture knowledgebase, which is essential to scaling the discipline and building upon the successes achieved to date.

Introduction

Many organizations recognize significant value is to be gained by adopting and deploying business architecture. Yet a significant number of the organizations that have embarked on a business architecture journey still remain in the early stages. Practitioners report barriers to realizing benefits that include both an inability to communicate its essence and value, and once having done so, to scale business architecture to a point where benefits can be sustained across projects, teams, and business units.

There are many alternative ways to capture and leverage a business architecture. Tool outputs often include documents, presentations, diagrams, and spreadsheets. However, these desktop-oriented options constrain scalability and, as a result, constrain the deployment and success of initiatives attempting to make use of business architecture.

Establishing a foundation for business architecture that consistently captures and represents business architecture domains enables business architecture to scale across a business ecosystem. There are nine business architecture domains, which are introduced in more detail later, but three of the more commonly known domains include capability, value stream, and information. Having a consistent means of representing a business architecture opens the way to leveraging industry reference models, saving months of mapping work and related startup efforts. In addition, taking a more uniform approach to managing business architecture content facilitates its use across multiple initiatives and enables the benefits to cascade throughout an organization.

Application of a uniform approach can benefit from the use of software tools that share a common perspective for representing a business architecture. Tools that leverage a consistent, widely accepted approach to representing a business architecture allow organizations to accelerate the capture and communication of shared domains and concepts, and help to demonstrate the value proposition.

The Business Architecture Core Metamodel (BACM) is a pending industry standardization effort that seeks to establish a formal foundation for business architecture principles and best practices, furthering the adoption of the discipline, reference model deployment, scalability, and automation support to enable the capture, communication, and interchange of essential business perspectives.[1]

Standardizing a core metamodel provides a foundation for taking business architecture's value proposition to the next level. It enables scaling of the discipline across a business ecosystem and delivering benefits across a variety of related disciplines, business areas, and strategic initiatives. Business ecosystem, a critical concept for establishing business scope, is defined as "one or more legal

entities, in whole or in part, that exist as an integrated community of individuals and assets, or aggregations thereof, interacting as a cohesive whole toward a common mission or purpose."[2]

Shifting Silo-oriented Thinking to Ecosystem-oriented Thinking

Modern organizations do not start or stop at their legal boundaries. Businesses no longer operate in silos, but are rather part of a larger, integrated ecosystem that demands scalable transparency. Awareness of relevant stakeholders and the ways in which they support value delivery is key to innovation and overall success. First and foremost, businesses need to adapt to meet the needs of its customers. A rapidly changing world requires undertaking new initiatives, along with business transformation, in order to drive innovation that allows a business to compete more effectively. An ecosystem-wide view of a business enables innovation and transformation from a holistic perspective; a perspective that a comprehensive mapping of an organization's business architecture delivers.

Business architecture enables innovation and transformation, and the successful deployment of solutions by providing a framework for establishing an abstract representation of a business ecosystem. A comprehensive, end-to-end view of the business architecture drives innovative thinking and transformative investments from ideation through to realization, enabling multiple disciplines along the way. Consider that agile approaches can help to meet needs quickly, but unless the right customer needs are identified and strategies are aligned, investment decisions may be misinformed. Decision-making and related investments become risky in complex environments without a comprehensive view of the affected business ecosystem.

Consider, for example, the disconnected projects, false starts, and misdirected investments that organizations experience on a regular basis. These issues are often a direct result of a lack of business ecosystem transparency. The ability to anticipate problems before they occur can mitigate the risks of failed downstream investments that lack upstream insights. A comprehensive view of an organization's ecosystem using business architecture surfaces issues early on and helps to prioritize investments that optimize solutions based on a shared transparency across business unit silos and partner environments.

Business architecture provides a means to capture and represent a complete business ecosystem, including partner-related touchpoints and value-focused components. The means for achieving this transparency involves breaking a business down into discreet, non-redundant business objects, defining actions against those objects, and highlighting how the actions deliver customer value. This formal perspective incorporates capabilities delivered by partners as well as points of third-party stakeholder engagement. This capability-based, value-centric framing of a business enables practitioners to interpret and translate strategic objectives with a clear-eyed understanding of impacts as a basis for driving those objectives into precise courses of actions and well-articulated investments.

While a generalized approach to business architecture has been established by the Business Architecture Guild® and is in use by organizations worldwide, different methodologies and conventions have arisen across selected industries. While these approaches may appear to be self-consistent, the perspectives deployed are likely to lack a complete business architecture perspective. This makes it difficult to leverage and maintain a consistent, actionable approach that can scale and serve as a reusable foundation for projects well into the future.

The Object Management Group (OMG) recognized the need to create a business architecture standard to help alleviate the inconsistency in approaches and technologies in place today. OMG issued a request for proposals to establish a core metamodel for business architecture that paves the way

towards standardization.[3] This metamodel will represent a universally shared business architecture perspective.

Common Understanding

Business architecture delivers business-wide transparency, exposing global touch points among customers, partners, products, policies, initiatives, value delivery perspectives, and capabilities using a common vocabulary. This heightened degree of transparency ensures that planning and operational delivery teams share a common business perspective or common ground. Heightened transparency makes it harder to hide bad ideas and related investments, while enabling faster react-and-response time to address customer demands, competition, risks, and crises. Without common ground, poorly informed biases surface, often stifling the outputs of well-meaning and otherwise high-performing teams.

Business architecture must have the capacity to establish a holistic frame of reference from customer need through to strategy realization and operational deployment. Because business architecture must have the capacity to effectively represent a complete business ecosystem, its scope should be framed by a set of fundamental business focal points or domains. These domains form the foundational perspective of a business and provide a basis for establishing a wide variety of business abstractions that enable end-to-end realization of a large range of business strategies, scenarios, and related investments.

Figure 1 depicts the four core business architecture domains, as shown in the center circle, five extended domains, shown in the outer circle, and business performance metrics. Core domains define what a business does using capabilities; its underlying vocabulary using information; the end-to-end stakeholder value delivery using value streams; and the business structure and partner engagement via an organization view. Extended domains represent business stakeholders (including customers) who are recipients of business value; strategies, and policies that drive actions to be taken; the products that are delivered to end customers; and initiatives targeted for investment. Metrics provide a basis for planning, investment, and deployment option analysis.
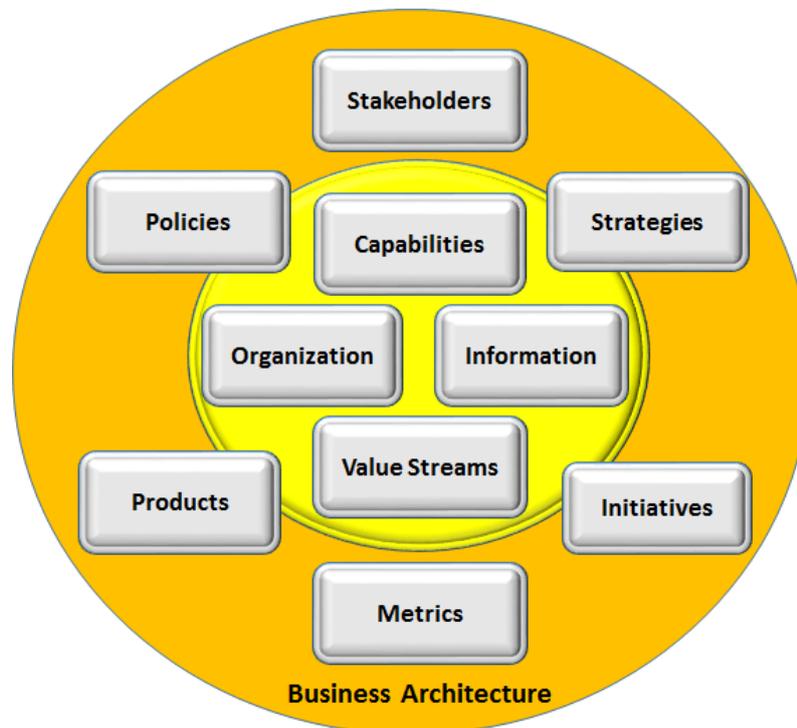
Figure 1: Core and Extended Business Architecture Domains[4]

Having a common vocabulary for each of the domains defined in figure 1 simplifies communication of the essence of business architecture. However, simply using the same terms in a discussion will not guarantee a common understanding. It is the meaning of those terms and underlying concepts that must align. Without a common understanding of the underlying concepts, there is a risk that terms will be misunderstood, resulting in frustration and dysfunction.

The Business Architecture Guild has established a set of principles, practices, and guidelines to guide professionals exercising the discipline. These are detailed in A Guide to the Business Architecture Body of Knowledge® (*BIZBOK® Guide*). Formalizing this approach in an industry-standard representation that enables tool providers to represent and exchange business architecture metadata is the logical next step, which will be realized in the BACM.

Scaling Business Architecture

The business architecture domain perspective is in use at many organizations today and is being leveraged on a variety of initiatives. Unfortunately, many of these same organizations have struggled to expand business transparency mapping as required to scale their business architecture practice across business units, initiatives, and related scenarios. For example, the lack of a well-defined information map curtails business architecture's use as an input into cross-business planning and IT transformation efforts. Similarly, the lack of a product mapping perspective limits business architecture's role in strategic product planning, while the lack of initiative mapping curtails its use with program planning and investment alignment. Finally, limitations on the ability to map policies across capabilities and business units stymie business architecture's usefulness in regulatory compliance and risk management.

While many organizations are enthusiastically adopting and using business architecture, a lack of standardization and technology enablement can stifle opportunities to scale its deployment. There are several tools that support the domain perspective defined in figure 1, however cross-industry standardization is still lacking with many service and technology providers continuing to go in a different direction.

Consider a typical business architecture practice where a small team articulates the business architecture using the principles outlined in the *BIZBOK® Guide*. Excel is often initially used to capture the capability, value stream, information, organization, and other business architecture domains. Visualizations or mappings are often captured in simple Visio diagrams. As the number domains and cross-domain relationships increase, the effort required to keep this information consistent, up-to-date, and accessible grows exponentially. At some point it becomes a futile effort to maintain because:

- There is redundant data across the various mappings
- People update business architecture content inconsistently or in an uncoordinated manner
- There is no cross-validation, synchronization, or versioning
- It becomes increasingly difficult to coordinate releases across the business

When these challenges emerge, a business architecture practice can experience irreparable harm from which it can take months or years to recover. To forestall these issues, organizations seeking to mature and scale the use and benefits of business architecture require automation based on a consistent, shared perspective aligned to industry best practices. The business architecture discipline must establish a formal standard that is based on the widely adopted, principled approach outlined in the *BIZBOK® Guide*. Such a standard will ensure that organizations can rely on globally adopted, tool vendor-enabled best practices that allow business architecture to be scaled.

Business Architecture Knowledgebase

A stepping stone toward business architecture standardization involves recognizing the need for a standard framework of practice. The domains in figure 1 can be incorporated into an overall business architecture framework as shown in figure 2. The business architecture framework has three components:

1. An underlying knowledgebase
2. Blueprint views or mappings that may be derived from the knowledgebase
3. The business scenarios that determine the blueprints needed to enable the analysis, planning, and execution of those scenarios
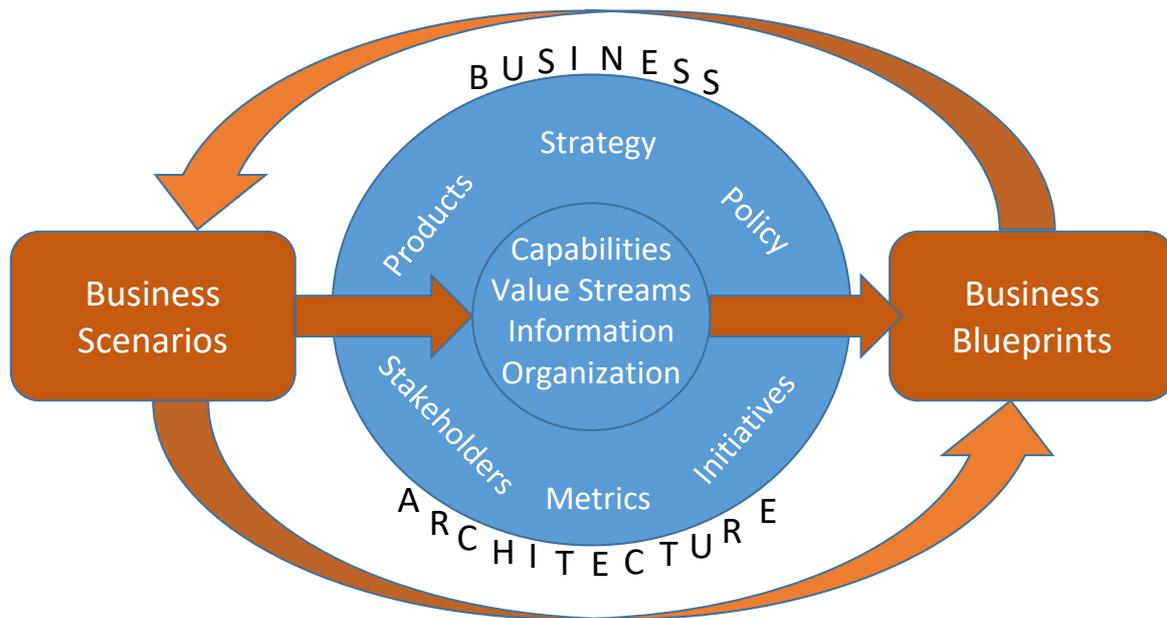
**Figure 2: Business Architecture Framework & Knowledgebase[5]**

A knowledgebase is defined as "a combination of process, structure, and logical warehouse for capturing, assimilating, viewing, and sharing a wide range of information that can be used to inform business strategy, optimize business planning through execution, and guide transformation efforts."[6] Whether formalized or not, every practicing organization has something in place for capturing and managing business architecture artifacts. Organizations may not consider this organizing structure to be a knowledgebase, but it does exist either implicitly or explicitly.

In order to scale a business architecture, a knowledgebase should be explicit and be formally aligned to a body of knowledge that reflects best practices for loading, managing, and utilizing the business architecture. Formalizing the knowledgebase requires that it be based on a metamodel that reflects and supports a formal practice, yet be flexible enough to align to various business and IT disciplines.

Business Architecture Core Metamodel

The BACM establishes a way to formalize the concepts embodied in the global body of practice by way of a metamodel, which provides a foundation for a formal, explicitly defined knowledgebase. The metamodel is the underlying technical foundation for representing the business architecture as defined by the aforementioned domain structure and framework.

Figure 3 depicts a high-level view of the business architecture metamodel that underlies the business architecture domains and body of practice.
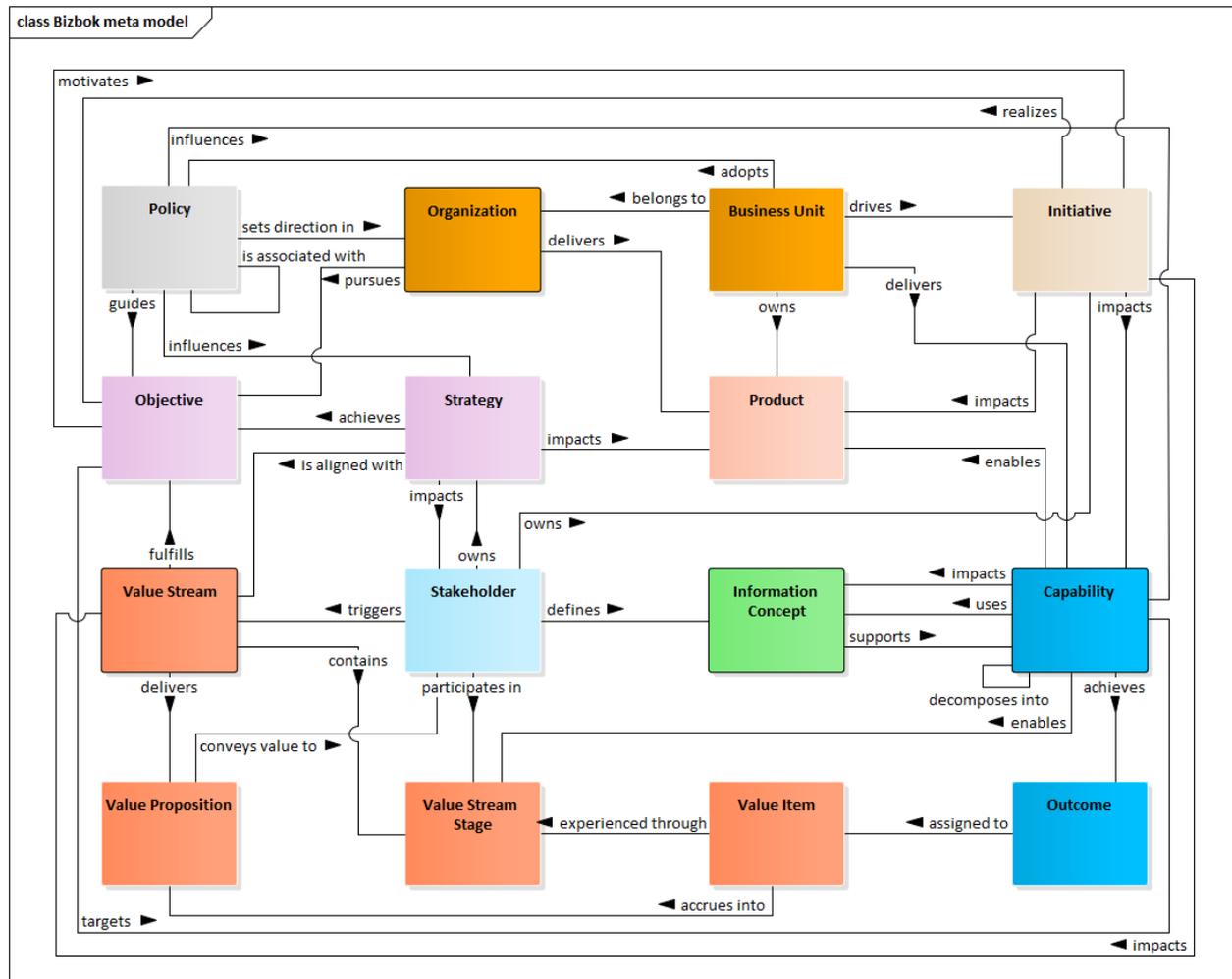
Figure 3: Business Architecture Summary Level Metamodel[7]

This high-level perspective highlights the relationships among core and extended business architecture domains and selective critical elements such as capability outcome, value item, and value proposition. A knowledgebase based on the BACM has the following characteristics:

- The business architecture is consistently defined and enables the separation, clarification, and interconnectedness of business complexities

- The business architecture can be visualized at a level of abstraction that is appropriate for understanding and analysis by executives, planners, practitioners, and deployment teams

- Aligns to best practices and principles as articulated by the *BIZBOK® Guide*

- Enables the exchange of models amongst different modeling tools to avoid vendor lock-in

- Promotes competition for quality and continued improvement of modeling tools

- Provides consistent modeling techniques and methods to advance the discipline, and supports the training and certification of business architecture professionals

- Facilitates the integration of interdisciplinary business models and disciplines, whether based on OMG standards, related standards, or other adopted business perspectives

- Accommodates import, use, and exchange of *BIZBOK® Guide*-aligned industry reference models, including their use across a multitude of business scenarios

The collective set of domain packages, an overall binding package, and supporting foundational packages are currently under consideration for standardization by the OMG. A package is merely a means of breaking down various views within a metamodel for ease of reference and clarity.

Principle of Global Applicability

A foundational principle of the BACM is that the metamodel must accommodate any business architecture represented for any business ecosystem regardless of industry sector or geographic region. As a result, the BACM does not veer into what would be considered business architecture instances that represent a particular industry vertical or interdisciplinary perspective. Slanting the BACM in this way would constrain its use to a subset of business models and use cases, ultimately devaluing the standard and adoption.

For example, a transportation company would define asset, route, conveyer, location, shipment, and other business object-based perspectives in its business architecture. These would form the basis of its capabilities and information concepts. Transportation companies seeking to expedite a business architecture deployment would leverage the transportation industry reference model.[8] Industry reference models are pre-defined for the BACM because they follow the same industry best practices. They contain domain cross-mappings such as capability-to-value stream relationships, which the BACM enables via its formal mapping structure. In no case, however, should transportation or other industry sectors be incorporated in the BACM itself.

Similarly, the BACM does not revolve around a given business discipline or methodology. For example, core and extended domain mappings articulate customer, partner, and internal stakeholder value delivery from multiple perspectives, yet core perspectives are not slanted toward customer experience or customer journey mapping. Doing so would constrain the BACM's use at not-for-profits or at government agencies or ministries, while instantiating a business discipline that is inconsistently implemented from company to company. However, the BACM may contain certain packages that address these related disciplines, which still allow core business architecture perspectives to remain independent of any given interdisciplinary perspective.

The BACM design does enable a variety of interdisciplinary points of alignment. BACM is currently aligned to the Unified Architecture Framework (UAF), aspects of TOGAF®, OMG's Business Motivation Model (BMM)[9], requirements analysis, and business process and case management. The BACM may similarly be aligned with customer experience, IT architecture, Lean Six Sigma, and other disciplines — as long as these disciplines can be expressed as a metamodel package. Taking an alignment-oriented approach to a multitude of business disciplines ensures that the BACM can be universally adopted and aligned to any variety of current and future business disciplines, even as disciplines evolve or new disciplines emerge.

Conclusion

Business architecture transcends business unit silos and organizational boundaries in order to visualize and understand the larger business ecosystem. To support this holistic approach to business architecture and scale it accordingly, organizations must seek a level of formality supported by industry standards and related technologies that align to these standards.

To this point, Business Architecture Core Metamodel (BACM) is a pending OMG standard that seeks to establish business architecture representations that are based on formal principles and industry best practices. This, in turn, enables adoption, reference model deployment, scalability, and automation support. The BACM also enables the capture, communication, and interchange of essential business perspectives, reducing dependencies on a given tool and allowing shared access of a business architecture across distributed environments.

Establishing this foundation allows organizations and the industry as a whole to take the business architecture value proposition to the next level, scaling it across business ecosystems and delivering benefits across a variety of related disciplines, business areas, and strategic initiatives.

Note to Readers:
The BACM is undergoing standards submission reviews and modifications in 2019. As the OMG moves the process forward, it is anticipated that the BACM will reach the point where it becomes an adopted standard over the course of 2019. This white paper will be updated as progress ensues.

About the Authors:
This paper was produced by the Business Architecture Guild® Metamodel Team and reviewed and edited by the Business Architecture Guild's Editorial Board. The Metamodel Team is focused on establishing formal representations for managing business architecture, moving these representations through various standards bodies, and enabling interdisciplinary alignment between business architecture and other business and IT disciplines.

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[1] Business Architecture Core Metamodel, Revised Submission, OMG Document Number bmi/2018-11-02.

[2] *A Guide to the Business Architecture Body of Knowledge® (BIZBOK® Guide)*, v7.0, Part 1.

[3] The Business Architecture Core Metamodel (BACM) RFP, https://www.omg.org/cgi-bin/doc?bmi/2017-03-07.

[4] *A Guide to the Business Architecture Body of Knowledge® (BIZBOK® Guide)*, v7.0, Part 1.

[5] Ibid.

[6] Ibid, Section 5.1.

[7] Ibid.

[8] Ibid, Section 8.7.

[9] Business Motivation Model (BMM), https://www.omg.org/spec/BMM/About-BMM/.