Enterprise Architecture Professional Journal

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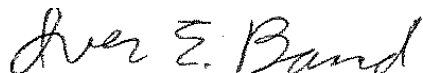
EDITOR'S WELCOME

By Iver Band

Welcome to the new Enterprise Architecture Professional Journal! We serve practicing and aspiring enterprise architects, as well as those who apply the holistic perspective of enterprise architecture to other disciplines. EAPJ informs their daily work and benefits their careers with content that is focused, concise, authoritative, practical and accessible. In this column, we preview all articles and recommend introductory reading for each piece that assumes specialized knowledge.

This issue focuses on how EA can empower organizations to achieve their goals. EA and quality expert Mike Novak compares the TOGAF®[1] framework for enterprise architecture with the Baldrige approach to organizational performance assessment and improvement, and shows how organizations could benefit from integrating the two paradigms. This is a great article for all those who have wondered about the relationship between EA and quality practices, or would like to learn more about either paradigm. The article assumes a bit of familiarity with the TOGAF standard, so novices should consult one of the references at the bottom of this page.

This issue also features an interview with Mike Callahan, a senior partner in AgileLayer, a business architecture methodology, software and consulting provider. Mike Callahan introduces us to his area of expertise, and explains how business architects practice many of the methods Mike Novak describes in his TOGAF/Baldrige article.

I'd like to thank our expert reviewers for this issue, Jeff Hensgen and Chris McCurdy. EAPJ needs additional seasoned professionals like them willing to willing to help develop and select the best articles.

Please contact me at editor@eapj.org with your questions, comments, ideas and submissions. I look forward to hearing from you!

Iver E. Band

Iver Band, Editor

TOGAF Introductory Material

Read the first two sections – 1. Introduction and 2. Core Concepts – of the TOGAF 9.1 standard, which is available online at http://pubs.opengroup.org/architecture/togaf9-doc/arch/. Alternatively, an introductory white paper that covers much of the same ground is available at https://www2.opengroup.org/ogsys/catalog/w118. A free Open Group website account is required to download the paper, so you may have to register first.

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[1] TOGAF is a registered trademark of The Open Group in the United States and other countries.

TOGAF®[1] [2]MEETS BALDRIGE[3] – STRANGE BEDFELLOWS OR A MARRIAGE MADE IN HEAVEN?

By Michael J. Novak

Abstract

Enterprise Architecture (EA) and organizational performance assessment and improvement are often viewed as separate and distinct disciplines. The former, often residing in the realm of the Chief Information Officer (CIO) or Chief Technology Officer (CTO), tends to focus mainly on Information Technology (IT) issues. By contrast, organizational performance assessment and improvement tends to be in the realm of the Chief Executive Officer (CEO) or Chief Operating Officer (COO) and focuses mainly on business operations topics. The boundaries between the business side of the house and the IT side of the house are sometimes impermeable – making communication, collaboration, and cooperation between the two organizational functions difficult. Consequently, EA and organizational performance assessment and improvement do not leverage their respective value-adding qualities to bring success to each other and to create value for the organization or stakeholders. This article provides a summary of the two disciplines – EA and organizational performance assessment and improvement. The article then describes a popular EA framework – The Open Group Architecture Framework (TOGAF) – and a widely used organizational performance assessment and improvement framework – the Baldrige Criteria for Performance Excellence and methodology. The article goes on to illustrate how these two frameworks intersect, interact, and provide mutual support. Finally, the article provides a prescription for senior executives and other change agents to help bring about integration of EA (specifically, TOGAF) and organizational performance assessment and improvement (specifically, Baldrige).

The writer makes two assumptions in this article. The first is that the reader of this Journal is familiar with the concepts and practice of Enterprise Architecture in general and with The Open Group Architecture Framework (TOGAF) in particular. The second assumption is that the reader may not be as familiar with the Organizational Performance Assessment and Improvement discipline. A corollary is that the reader may not be familiar with the Baldrige Criteria for Performance Excellence and Baldrige organizational performance assessment and improvement methodology. Accordingly, treatment of EA in this article will be perfunctory; treatment of Organizational Performance Assessment and Improvement will be more extensive.

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[1] TOGAF is a registered trademark of The Open Group in the United States and other countries.

[2] Source of illustrations of the TOGAF Architecture Development Method and other TOGAF components: *Open Group Standard TOGAF Version 9.1*. The Open Group, 2011.

[3] Source of illustrations of the Baldrige business model and core values: *2011-2012 Criteria for Performance Excellence*.

While there are multiple definitions for "enterprise," "architecture," and "enterprise architecture," this article will not debate which definitions are "right" or "best." Instead, it will leverage some widely accepted definitions:

Enterprise: An organization or collection of organizations that share a common set of goals, that is being "enterprising," moving toward a target thinking as an "enterprise" level – e.g., a government agency or part thereof, or a corporation (for profit or not-for-profit or academic) or part thereof, but with a sense of "enterprise" *vs*. "silo." (Source: TOGAF Definition of "Enterprise")

Architecture: The fundamental organization or definition of "something" (could be an enterprise), embodied in: (1) its components, (2) their relationships to one another and the environment, and (3) the principles governing its design and evolution. (Source: TOGAF Definition of Architecture, Adapted from ANSI/IEEE Standard 1471-2000)

Enterprise Architecture: "The organizing logic for business processes and IT infrastructure reflecting the integration and standardization requirements of the firm's operating model." (Source: MIT Center for Information Systems Research)

By way of background, Enterprise Architecture came into being for a number of reasons related to procurement of IS and IT resources. One specific reason was to bring order out of the chaos that was acquisition of Information Resources by the U.S. Federal Government. This writer worked for six years in the world of U.S. Defense Acquisition of mission-critical computer resources (MCCR), and can attest to the redundant, repetitive, contradictory, and downright wasteful regulations and practices that governed MCCR acquisition. But the problem did not only reside in the MCCR world. Stories (mostly true) told of agencies with multiple email systems that were not compatible – business units using "email system A" could not communicate with units using "email system B." And the same problem existed in other areas: multiple operating systems; multiple word processing, spreadsheet, and data base applications. Contractors were paid thousands of dollars to produce training materials in WordPerfect by one division, and then paid additional thousands to convert the materials to Microsoft Word so that another division could use the materials. The outcomes of this sort of system could be predicted: huge waste of financial, human, and other resources; redundant and incompatible systems; and general organizational inefficiency and ineffectiveness. And this was not only in the information technology arena. The same situation existed in other parts of the organization. Redundant, conflicting, and misaligned business processes and systems created organizational silos, ineffective internal and external communications, poor quality and productivity, low customer satisfaction and loyalty, and workforce disengagement.

Within this context, The Open Group's Whitepaper W076, "Why does Enterprise Architecture Matter?" cites a number of specific benefits of enterprise architecture. First, the most significant benefit of EA is that it helps an organization achieve its business strategy. Absent an understanding of its business, information, application, and technology architectures, an enterprise cannot hope to understand how its structure, internal processes, or external environment are affecting its progress toward strategic goals and objectives. An effective EA helps ensure that an organization's IT investments are aligned with key business goals and performance indicators.

Developing and sustaining an enterprise architecture is a technically complex process that involves many stakeholders and decision processes in the organization. TOGAF plays an important role in standardizing the architecture development process. TOGAF provides a best practice framework for adding value, and enables the organization to build workable and economic solutions that address their business issues and needs. Using TOGAF results in enterprise architecture that is consistent, reflects the needs of stakeholders, employs proven best practices, and gives due consideration both to current requirements and to the perceived future needs of the business. TOGAF can provide a complete picture of the enterprise, can provide the means for complete documentation of all architecture work, can be adapted to meet the unique needs of an organization, and can be readily employed by new adopters of EA. This is not to say that TOGAF is simple. It is not. TOGAF is designed to be adapted, augmented with other standards, and implemented completely or partially in complex organizations with a view to managing complex systems. So TOGAF is almost by necessity complex.
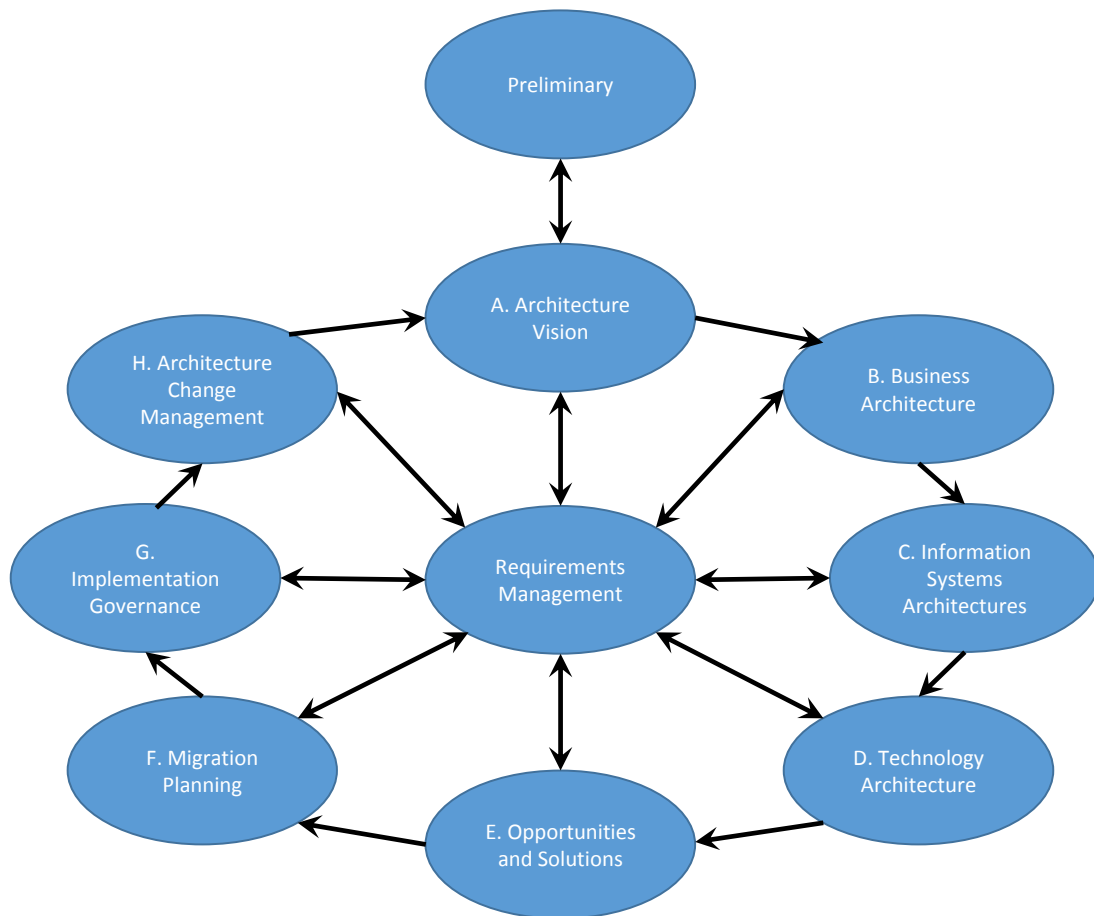

FIGURE 1 TOGAF ARCHITECTURE DEVELOPMENT METHOD

The core of TOGAF is the Architecture Development Method (ADM). The ADM (Figure 1) is an iterative, adaptable process for developing and managing architectures. The ADM includes an initial planning and preparation stage, consisting of the Preliminary and Architecture Vision Phases; an architecture design and development stage, consisting of Business Architecture (Phase B),

Information Systems (Data and Applications) Architectures (Phase C), and Technology Architecture (Phase D); an implementation stage, consisting of Opportunities and Solutions (Phase E) and Migration Planning (Phase F); and an oversight and change management stage, consisting of Implementation Governance (Phase G) and Architecture Change Management (Phase H). There is also a Requirements Management element, which is a crucial activity in all phases.

Since its inception in 1994, TOGAF has come to be widely used as an effective industry standard framework and method for enterprise architecture in major IT projects worldwide. The popularity of TOGAF is based on the fact that it is vendor, tool, technology, and industry sector-neutral – TOGAF is applicable to organizations of any industry, any size, and any geographical locality. It is scalable, and adaptable, and can be used in conjunction with other enterprise architecture frameworks and other management frameworks. Also, TOGAF is a universally recognized means of certification for Enterprise Architects, with more than 25,000 certified worldwide. The TOGAF standard and other information about TOGAF and about The Open Group may be found at http://www.TOGAF com and http://www.opengroup.org, respectively.

Organizational Performance Assessment and Improvement

By its very name, organizational performance assessment and improvement includes two separate but related tasks: (a) assessment of an organization's performance and (b) improvement of the organization's performance.

Before either the assessment or the improvement task can be conducted, however, a foundation must be laid. First, a basic description of the organization must be articulated – one that defines the organization's drivers, operations, and desired outcomes. The basic relationships among these are shown in figure 2, below.
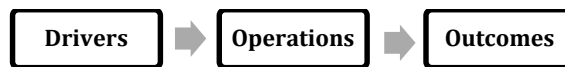

FIGURE 2 DRIVERS, OPERATIONS, AND OUTCOMES (LINEAR VIEW)

Drivers are factors that cause an organization and its members to behave in ways that contribute to the organization's desired outcomes. These can be written and unwritten policies, practices, rules and values; key stakeholders and their requirements and concerns; workforce competencies and other workforce attributes; the organization's products and services and distribution channels; facilities, equipment, and other physical assets; intellectual property and other non-physical assets; legal and regulatory requirements; the organization's competitive environment; competitive challenges and advantages; and the organization's performance improvement system. These drivers nearly always derive from higher order (strategic) drivers that define the fundamental existence and operations of the organization: desired outcomes stated in terms of the organization's purpose, vision, mission, objectives, and goals.

In essence, drivers tell the organization why it must do what it must do. What it must do are its operations. Operations are what the organization does, in response to the drivers, to achieve its desired outcomes. Desired outcomes tell the organization what its operations are intended to accomplish. Outcomes can be stated in terms of purpose or vision statements and strategic objectives

(strategic dimension), mission statements and major program/project objectives (operational dimension), or statements of desired process outputs or definitions of task or activity accomplishment (tactical dimension).

Figure 2 and the foregoing discussion make it appear that there is a linear, step-by-step process: First we identify the drivers; then we determine the operations that address the drivers; then we decide on the desired outcomes.   In reality, these activities are occurring simultaneously and interdependently. Both the drivers and the desired outcomes determine the operations; both the drivers and the operations can work in tandem to determine the organization's desired outcomes; and the operations, working in concert with the desired outcomes, can shape the organization's drivers. These relationships are shown in Figure 3.
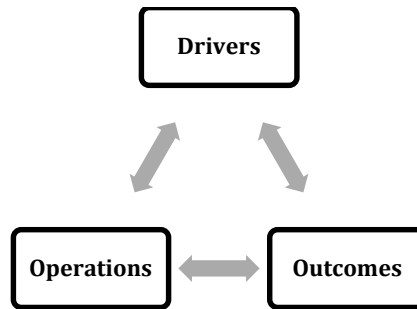

FIGURE 3 DRIVERS, OPERATIONS, AND OUTCOMES (NON-LINEAR VIEW)

Once the organization has been described, it must be assessed. At that point, enter two additional factors: performance indicators and metrics.   Performance indicators are quantitative and/or qualitative statements of the organization's desired outcomes. Metrics are specifically defined variables that measure the extent to which the organization is achieving its performance indicators and desired outcomes. Metrics inform management how well the organization is progressing toward realizing its purpose, vision, and strategy; accomplishing its mission, major programs and projects, and operational plans; and completing its day-to-day work, processes, procedures, tasks, and schedules. A very simplistic example of desired outcomes, performance indicators, and metrics can be seen in Table 1: An imaginary organization, the Harrietta Food Services Cooperative, founded in 2010, has a purpose of providing food to the hungry in Harrietta, Michigan, and a vision of ensuring all Harrietta residents have adequate food by 2020. Its strategic desired outcome, performance indicator, and metric are shown in Table 1.

TABLE 1: DESIRED OUTCOMES, PERFORMANCE INDICATORS, AND METRICS

Desired Outcome	Reduce Hunger by 50% in Harrietta, Michigan by 2015
Performance Indicator	A Chicken in 50% of all Previously Empty Pots by 2015
Metric	% of Previously Empty Pots Containing Chickens

Most organizations begin their assessment and improvement by measuring their outcomes. Outcomes that are found to fall short of defined desired outcomes are tagged for improvement, and root causes for the deficiencies are identified and prioritized for improvement. Generally, the root

causes fall into the operations area: strategies, programs, projects, or processes, or their supporting plans, are in need of improvement – either through continuous incremental improvement or by innovative breakthrough change. Using the example above, assume that the Harrietta Food Services Cooperative's efforts to reduce hunger by 50% by 2015 began in 2010. Also assume that in 2013 the cooperative discovered that only 20% of previously empty pots contained chickens. Clearly, the desired outcome of reducing hunger by 50% – represented by the performance indicator of "A Chicken in 50% of Previously Empty Pots by 2015" – will not be met unless corrective action is taken. The cooperative reviews and revises its processes (operations) that are employed to identify empty pots and provide chickens. For example, processes may have to be sped up or enhanced in some other way in order to meet the desired outcome.

There may be other causes of the deficiencies: For example, a driver may be causing inappropriate organizational and individual behaviors. Or a driver may have become obsolete and irrelevant. In such cases, the cooperative would review and revise the drivers that motivate the cooperative and its workforce. Drivers such as workforce capabilities or capacities may have to be enhanced – for example, by hiring more people or providing more training to current employees – in order to achieve the desired outcome.

Similarly, the problem may be with the desired outcomes. A comprehensive review and revision of the cooperative's desired outcomes may reveal that the desired outcome is not achievable or realistic, and the cooperative may modify the desired outcome – e.g., by changing the performance indicator to "A Chicken in 50% of all Previously Empty Pots by 2020."

Review and revision may be required in any or all of the three areas. Mature organizations use an integrated approach to assessment and improvement: Operations are periodically reviewed to ensure they are performing as designed and as required. Outcomes are continuously monitored, and data about outcomes provide information about possible operations or drivers that need to be reviewed and revised. Drivers are periodically reviewed to ensure they continue to be appropriate and relevant. A graphical representation of this approach can be seen in Figure 4.
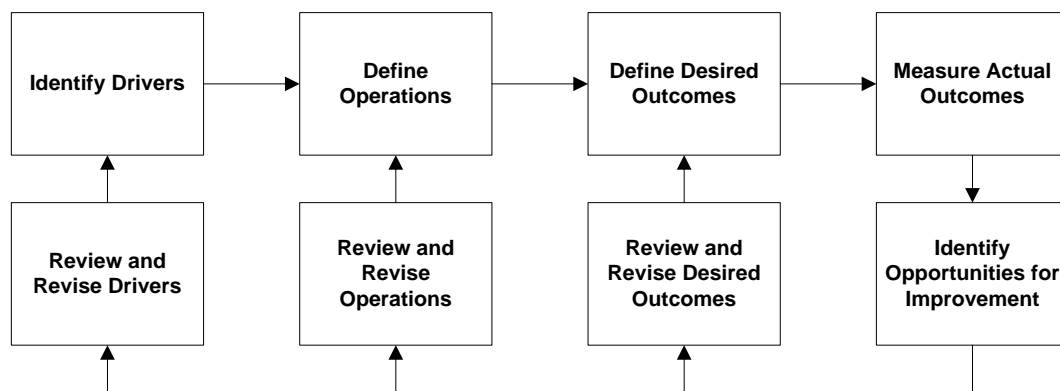

FIGURE 4: GENERIC ORGANIZATIONAL PERFORMANCE ASSESSMENT AND IMPROVEMENT CYCLE

In summary, organizational performance assessment and improvement is a collection of building blocks (Table2).

Strategic Drivers: Purpose, Vision	What the organization does
Drivers	Why the organization does what it does
Operations	How the organization does what it does
Desired Outcomes	How well the organization <u>intends</u> to do what it does
Performance Indicators	How to determine success in meeting objectives
Metrics	Quantification of performance indicators
Measurement Process	How the organization measures and reports how well it does what it does
Results Data	How well the organization actually does what it does
Analysis Process	How the organization analyzes results data to make decisions that will enhance the organization's ability to achieve its objectives
Decision-making Process	
Improvement Process	

The Baldrige Criteria for Performance Excellence and Methodology

In the early and mid-1980s, U.S. industry and government leaders realized that American companies needed to focus on quality in order to compete in an ever-expanding, demanding global market. The goal of the Malcolm Baldrige National Quality Improvement Act of 1987 was to enhance the competitiveness of U.S. businesses. Its scope has since been expanded to health care and education organizations in 1999 and to not-for-profit and government organizations in 2005.

Secretary of Commerce Malcolm Baldrige was an advocate of quality management as a key to U.S. prosperity and sustainability. After he died in July 1987, Congress named the Baldrige National Quality Award in recognition of his contributions. Congress created the Award Program to promote the awareness of performance excellence as an important element in competitiveness and the award was envisioned as a standard of excellence that would help U.S. companies achieve world-class quality. Specific objectives include:

- Identification and recognition of role-model businesses

- Establishment of criteria for evaluating and improving performance

- Disseminating and sharing best practices.

The Baldrige Performance Excellence Program is much more than an award program. Most organizations that embrace the Baldrige *Criteria* and improvement method do so to improve their performance; they never apply for an award. These organizations recognize and employ other value-adding aspects of Baldrige:

- It is an education program to disseminate best business practices to all sectors of the U.S. economy.

- It is a business model or architecture framework. (Figure 5)

- It is a widely used standard of organizational performance based on long-term, continuous study of what the most successful organizations do.

- It is a widely used standard of organizational performance based on long-term, continuous study of what the most successful organizations do.

- It is a set of *Criteria for Performance Excellence*, based on 11 Core Values and Core Concepts (Figure 6). The *Criteria* prescribe <u>what</u> must be done, but not <u>how</u> it must be done.

- It is a performance maturity model.

- It is a performance improvement methodology, based on self-assessment of an organization's conformance to the requirements of the *Criteria* – often evaluated and scored by an external entity (e.g., award program). The methodology identifies and prioritizes strengths to leverage and opportunities for Improvement to eliminate, reduce, or mitigate.
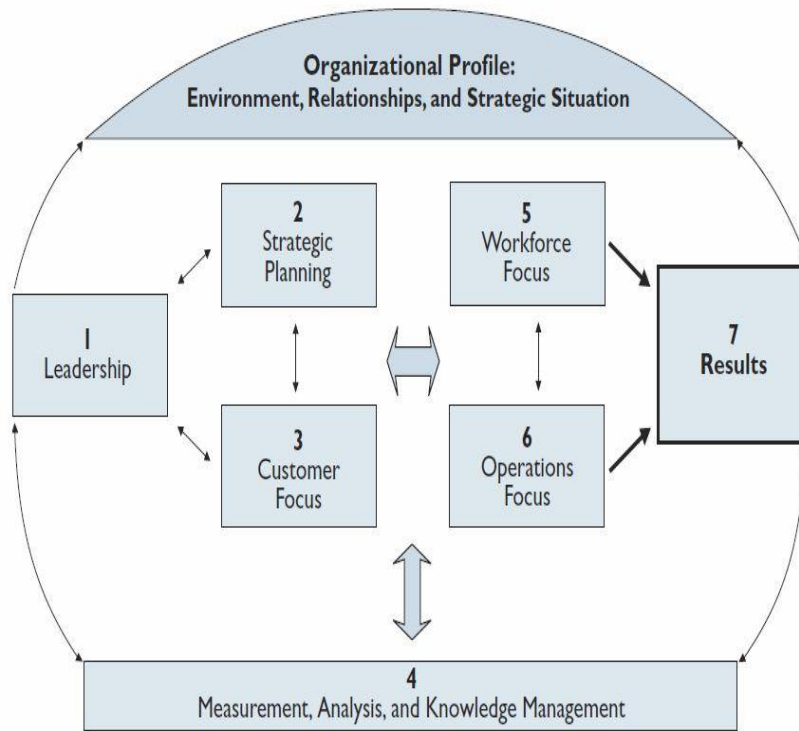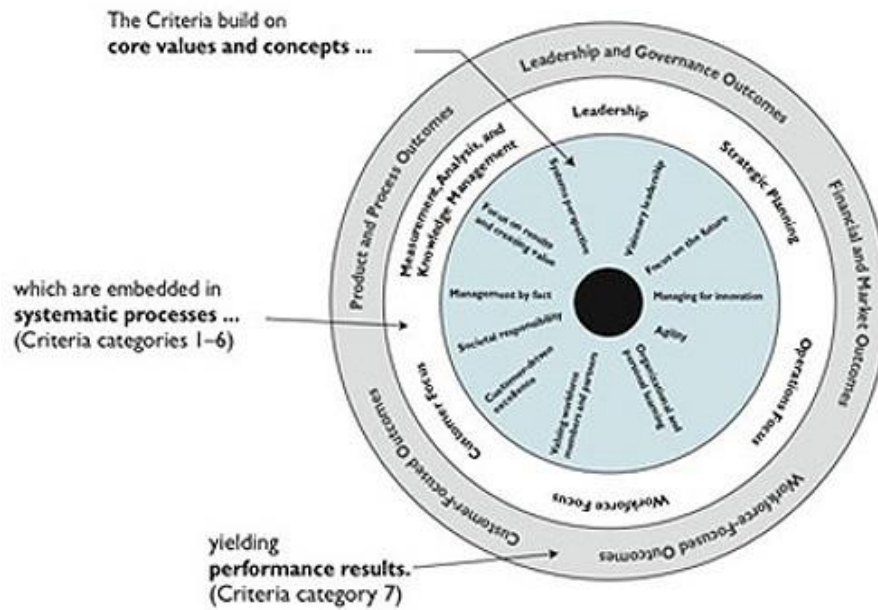
FIGURE 5 BALDRIGE BUSINESS MODEL

FIGURE 6 BALDRIGE CORE VALUES AND CONCEPTS, CRITERIA CATEGORIES, AND RESULTS

There are, of course, many other organizational performance assessment and improvement approaches. Some of the more familiar ones include the Balanced Scorecard, ISO 9001, Lean, Six Sigma, Business Process Reengineering, Total Quality Management, Activity Based Costing, and Quality Circles. These are more narrowly focused approaches that can be used within the context of the more holistic Baldrige framework. Additional information about the Baldrige program can be obtained from the Baldrige program web site: www.baldrige.nist.gov.

Where TOGAF and Baldrige Meet – Similarities and Differences

Anyone familiar with one framework – either TOGAF or Baldrige – will see some very familiar concepts in the other framework. One is the concept of preparation as a crucial prerequisite to any other activity. The basis for preparation in Baldrige is the Organizational Profile. This profile articulates the drivers or Key Factors that motivate the organization and its workforce to perform. Drivers include:

- Product offerings

- Purpose, Vision, Mission, and Values

- Workforce profile

- Organizational assets

- Statutory and regulatory requirements

- Organizational structure

- Customers, suppliers, partners, and other stakeholders

- The organization's competitive position, anticipated competitiveness changes, and data and information about competitors and other comparable organizations

- Strategic advantages and challenges

- The organization's performance improvement system.

Many of these same factors are identified or developed during the Preliminary Phase and Phase A. Architecture Vision of the TOGAF ADM (Figure 7).
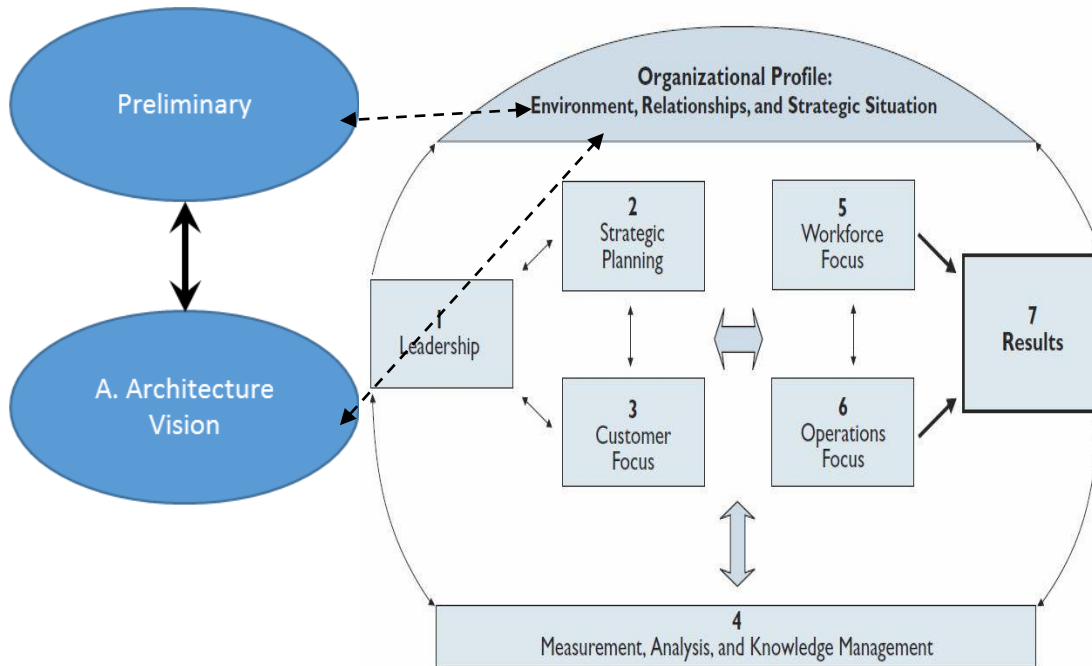
Another similarity between TOGAF and Baldrige is in the importance of Values, Principles, or Maxims to guide behavior of the organization and its workforce. The Baldrige method itself is based on 11 Core Values and Concepts: visionary leadership; customer-driven excellence; organizational and personal learning; valuing workforce members and partners; agility; focus on the future; managing for innovation; management by fact; societal responsibility; focus on results and creating value; and systems perspective (Figure 6).

Values appear prominently twice in Baldrige: first, in the Organizational Profile; and second, in Item 1.1 of the Baldrige *Criteria* (Senior Leadership). Since the organization's Values appear in the Organizational Profile, they are, by definition, key factors (drivers).

Item 1.1 of the Baldrige *Criteria for Performance Excellence* addresses how senior leaders set the organization's values and deploy those values throughout the organization and to key suppliers, partners, customers, and other stakeholders. Finally, Item 1.1 focuses on how senior leaders' actions reflect their commitment to those values. In TOGAF outputs of Phase A. Architecture Vision include architecture principles and refined statements of business principles. Principles or values in TOGAF and Baldrige are shown in Figure 8.
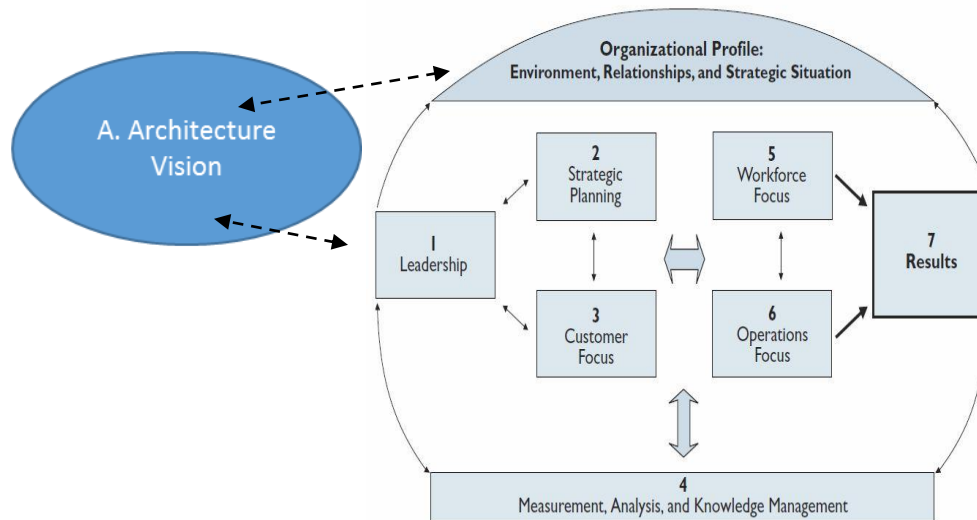
FIGURE 8: VALUES AND PRINCIPLES IN TOGAF AND BALDRIGE

One important difference: The Baldrige Criteria do not prescribe the form or format of organizational values. TOGAF, however, describes a specific format for principles (Table 3). TOGAF also specifies five characteristics of a good set of principles. Principles should be (1) Understandable – The underlying tenets can be quickly grasped; (2) Robust – Principles must be definitive and precise to support consistent decision making; (3) Complete – Principles must cover every situation perceived; (4) Consistent – Principles should not be contradictory; and (5) Stable – Principles should be enduring, yet able to accommodate change. A final difference between the treatment of principles by TOGAF and Baldrige is that TOGAF provides a detailed set of 23 typical principles; Baldrige provides no such prescription for organizational values (other than its own 11 Core Values and Concepts). As a result, values in organizations using the Baldrige methodology tend to be vague and not aligned with strategic drivers like the organization's purpose (Table 4).

Here is where the Baldrige model can adopt a best practice from the TOGAF model. Specifically, a TOGAF like format for values in Baldrige could help organizations understand the connections between their values and their performance outcomes and thereby enable organizations to identify ways to leverage their values to improve performance.

TABLE 3: PRINCIPLES TEMPLATE IN TOGAF

Name	Should represent the essence of the rule and be easy to remember
Statement	Should be succinct and unambiguously communicate the rule
Rationale	Should highlight the business benefits of adhering to the principle using business terminology
Implications	Should highlight the requirements, both for the business and IT for carrying out the principle, in terms of resources, costs, and activities/tasks

Integrity: Keeping our word and dealing honestly and transparently with all stakeholders to build trust
Customer-driven focus: Providing Legendary Service
Management for results: Relying on data and holding people accountable
Operational excellence: Performing every process effectively and efficiently
Innovation: Constantly striving to improve and implement the best ideas from anywhere

The concept of reusable building blocks is found in both TOGAF and Baldrige. In Baldrige, these building blocks are referred to as best practices, and are addressed in Item 4.1, Measurement, Analysis, and Improvement of Organizational Performance, which focuses on using performance review findings to share lessons learned and best practices across organizational units and work processes. They are also addressed in Item 4.2, Management of Information, Knowledge, and Information Technology, which focuses on the rapid identification, sharing, and implementation of best practices.

The concept of knowledge management (KM) can also be seen in both frameworks. KM appears in TOGAF primarily in its guidance for developing and managing architecture content, and in developing the capabilities of an architecture practice. Also, reusable Architecture Building Blocks are an output of Phase F. Migration Planning. The Baldrige Framework does not prescribe specific tools, techniques, or methods, and that holds true for its treatment of KM. Instead, the Baldrige Criteria – in Item 4.2, Management of Information, Knowledge, and Information Technology – requires organizations to manage knowledge to accomplish several objectives:

- Collecting and transferring workforce knowledge

- Transferring relevant knowledge from and to customers, suppliers, partners, and collaborators

- Rapidly identifying, sharing, and implementing best practices

- Assembling and transferring relevant knowledge for use in innovation and strategic planning processes

A number of organizational management models use a hierarchical approach to organizational performance. These models treat organizational performance in three dimensions – strategic, operational, and tactical. Baldrige does not specifically focus on different dimensions – but its *Criteria* do focus separately on strategic planning in Item 2.1, Strategy Development, and on operational planning in Item 2.2, Strategy Implementation. The Baldrige *Criteria* address the tactical dimension by requiring the implementation of approaches (processes) to address the drivers enumerated in the Organizational Profile. Another hierarchical approach is apparent in the TOGAF Architecture Landscape (Figure 9), which includes three levels of granularity: (1) an Enterprise (or Strategic

Architecture, that provides an overall organizing framework; (2) Segment Architectures that provide an organizing framework at the program or portfolio level; and (3) Capability Architectures that provide an organizing framework for realizing capability increments.
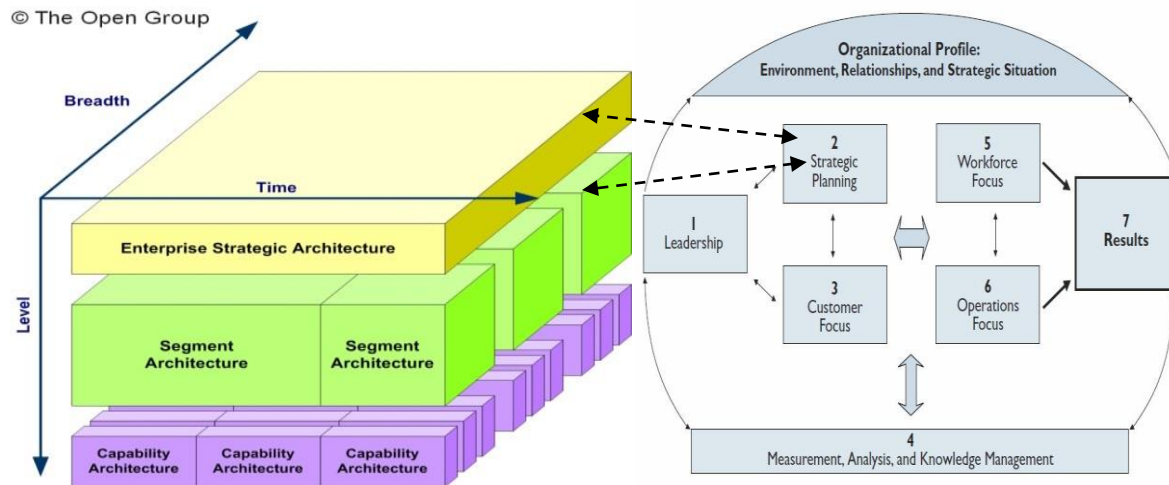

FIGURE 9 PLANNING IN THE STRATEGIC AND OPERATIONAL DIMENSIONS IN TOGAF AND BALDRIGE

Stakeholder management is a crucial aspect of both TOGAF and Baldrige. TOGAF initially identifies stakeholders and their concerns and requirements in Phase A. Architecture Vision, and revisits these topics throughout the architecture development process. The Baldrige *Criteria* single out two stakeholder groups for special treatment in Category 3, Customer Focus, and Category 5, Workforce Focus. Arguably, these are the most important of all stakeholder groups. Other stakeholder groups such as suppliers, partners, collaborators, regulators, and key communities are addressed in many places throughout the *Criteria* and, in particular, in the Organizational Profile. A significant difference is that TOGAF specifically addresses internal stakeholders, where the Baldrige *Criteria* do not, except in Category 5, Workforce Focus. Here is an instance where TOGAF and Baldrige can benefit from each other's approaches to stakeholder management and arrive at a synthesized, combined approach. In particular, TOGAF could devote more attention to external stakeholders, and Baldrige could increase its focus on internal stakeholders.

Governance plays a prominent role in both TOGAF and Baldrige. TOGAF ADM Phase G. Implementation Governance ensures all requirements and concerns are addressed, and that the implementation activities proceed according to prescribed rules and specifications. Governance in Baldrige, rather than addressing architecture in particular, focuses on organizational governance. The Organizational Profile specifically identifies Regulatory Requirements and Governance as Key Factors, and requires an articulation of the organization's governance system. Item 1.2, Governance and Societal Responsibilities, requires processes to be in place that address organizational governance, legal and ethical behavior of senior leaders, societal responsibilities and support of key communities. Item 7.4, Leadership and Governance Outcomes, requires organizations to collect and maintain results data that reflect current findings and trends in key measures or indicators of governance. Governance in TOGAF and Baldrige is shown in Figure 10:
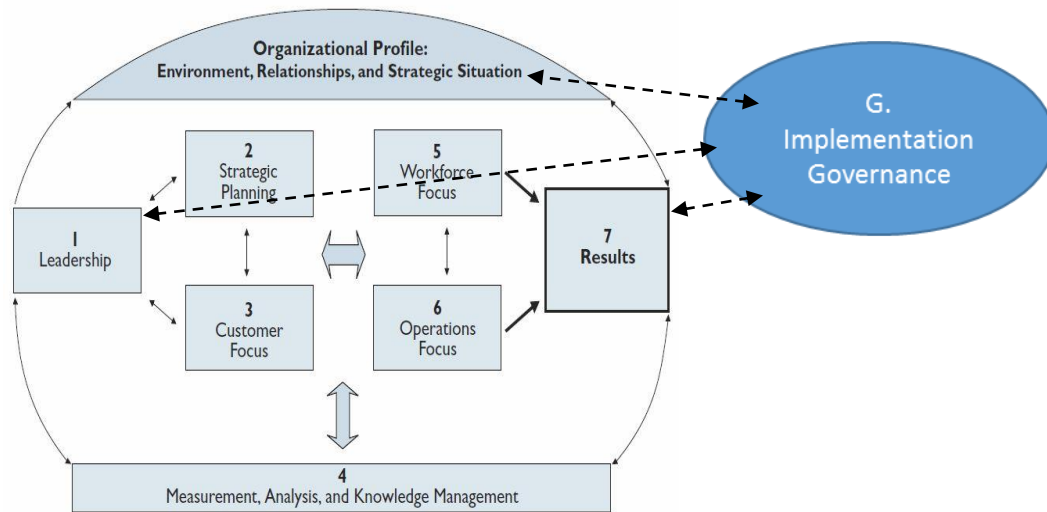
FIGURE 10 CORRESPONDENCE BETWEEN PHASE G. IMPLEMENTATION GOVERNANCE IN THE TOGAF ADM AND THE ORGANIZATIONAL PROFILE, LEADERSHIP, AND RESULTS ITEMS IN THE BALDRIGE MODEL.

One final area where TOGAF and Baldrige are alike is in their focus on the future, which is one of the 11 Baldrige Core Values and Concepts. TOGAF in Phases B. Business Architecture, C. Information Systems Architectures and D. Technology Architecture) develops Baseline (as-is, or present) and Target (desired to-be, or future) Architectures. The Baldrige framework does the same: The Organizational Profile, the six process categories, and the Results Category describe a Baseline Architecture, while the desired outcomes described in the organization's Purpose and Vision (Organizational Profile, Category 1) and Objectives and Goals (Category 2) describe a future state – a Target Architecture.

TOGAF provides an enterprise architecture framework. Baldrige provides a business architecture framework. The TOGAF ADM is a process that, among other things, leads to the development of a business architecture, then information systems (data and application) architectures, and finally technology architecture. Baldrige stops at the business architecture (Phase B in TOGAF). But Baldrige is in some ways more specific in this area. Baldrige provides an overarching "systems approach" (TOGAF would call it a "viewpoint") that prescribes eight major segments of a business architecture. First, Baldrige requires an Organizational Profile. Then Baldrige specifies six process categories, each consisting of two Items that prescribe the generic processes that the organization must use to address its drivers. Finally, the Baldrige Criteria specify in Category 7 the types of Results that the organization must measure and analyze. Only in Category 4, Measurement, Analysis, and Knowledge Management, does Baldrige even touch upon Data, Applications, or Technology. Even here, Baldrige limits its coverage to

- Data properties such as accuracy, timeliness, and security

- Data availability

- Collection and transfer of knowledge

- Hardware and software properties

- Emergency availability of information resources and technology.

This is where Baldrige has the greatest opportunity for improvement. Here, Baldrige can use Phases C and D of the TOGAF ADM to enhance its treatment of data, applications, and technology.

TOGAF also surpasses Baldrige is in change and requirements management. TOGAF devotes an entire Phase of the ADM to architecture change management. While Baldrige is itself, an organizational change management approach, the connection between change management and performance assessment and improvement is tenuous. Similarly, while TOGAF focuses on requirements management throughout the ADM, Baldrige only addresses this concept in Item 2.1, 2.1, Strategy Development, by focusing on the needs of key stakeholders in strategic planning. The Baldrige approach could be enhanced by emulating the TOGAF focus on change and requirements management.

A Strategy for Success: Integrating EA and Organizational Performance Assessment and Improvement

So, the question arises: If TOGAF and Baldrige have so many overlapping activities, and if there are so many opportunities for synergy between the two frameworks, why is there no evidence of organizations integrating the two approaches? TOGAF and Baldrige are highly complex, difficult for many to understand, and difficult to implement alone, let alone together. Both frameworks have the overarching purpose of transforming the enterprise. Organizational transformation adds another roadblock to the process: the all-too-human tendency to resist change. Accordingly, implementation of TOGAF ® and Baldrige must be accomplished in the context of a change management effort, such as Kotter's eight-step method. In short, implementing TOGAF or Baldrige is difficult and expensive in terms of time, effort, and funds. It is also risky: change management expert Ken Blanchard estimates that as many as 70% of all major organizational change implementations fail or are abandoned.

Nevertheless there is an opportunity here. TOGAF and Baldrige can separately lead organizations to higher levels of productivity, quality, and cost savings. Implemented in tandem, they could raise organizational performance exponentially by complementing each other. Specific examples are shown in Table 5.

TABLE 5 HOW TOGAF AND BALDRIGE COULD COMPLEMENT EACH OTHER

Concept or Activity	How TOGAF and Baldrige Could Complement Each Other
Planning and Preparation	Following the steps in the TOGAF Preliminary Phase and Phase A. Architecture Vision could result in a more precise and meaningful Baldrige Organizational Profile.
Principles and Organizational Values	The TOGAF approach to principles could strengthen the Baldrige focus on values in the Organizational Profile and in Item 1.1, Senior Leadership.

Concept or Activity	How TOGAF and Baldrige Could Complement Each Other
Building Blocks, Best Practices, and Knowledge Management	The robust TOGAF focus on reusable building blocks could strengthen the Baldrige focus on best practices and knowledge management
Hierarchical Approach to Organizational Management	The TOGAF concept of the Architecture Landscape could enable Baldrige to more effectively focus on strategic, operational, and tactical operations, enabling organizations to more effectively plan and prioritize activities and resource allocation.
Stakeholder Management	The TOGAF focus on internal stakeholders could strengthen stakeholder management in Baldrige.
Stakeholder Management	The Baldrige focus on external stakeholders could strengthen stakeholder management in TOGAF.
Governance	The Baldrige focus on Business Governance could strengthen the TOGAF focus on architecture implementation governance.
Change Management	The TOGAF focus on architecture change management could strengthen the Baldrige approach to organizational change management.
Requirements Management	The continuous focus on requirements management in the TOGAF ADM could enable Baldrige to strengthen its focus on requirements.

Integrating enterprise architecture and organizational performance assessment and improvement will yield a number of tangible benefits. By linking what is traditionally viewed as an IT function (EA) to something that is primarily business-oriented, IT and other parts of the enterprise will become more efficient and effective. Such integration would greatly facilitate communication and collaboration, which would benefit the enterprise through more effective planning, budgeting, and resource allocation, and through better sharing of information for decision making.

But what would this new organizational infrastructure look like?

The typical infrastructure today tends to resemble Figure 11 below, below, with the organization's C-level officers providing significant input to the strategic planning process, but the Chief Information Officer nearly independently managing the enterprise architecture effort. The connection between strategic planning and enterprise architecture may be weak as shown by the dashed line in Figure 11. The CIO's input to the strategic planning process may include, or be based on, the enterprise architecture, but EA and strategic planning are not fully aligned or integrated. Rather, they are two separate and distinct processes – with drivers, operations, and outcomes unaligned, as in Figure 12.
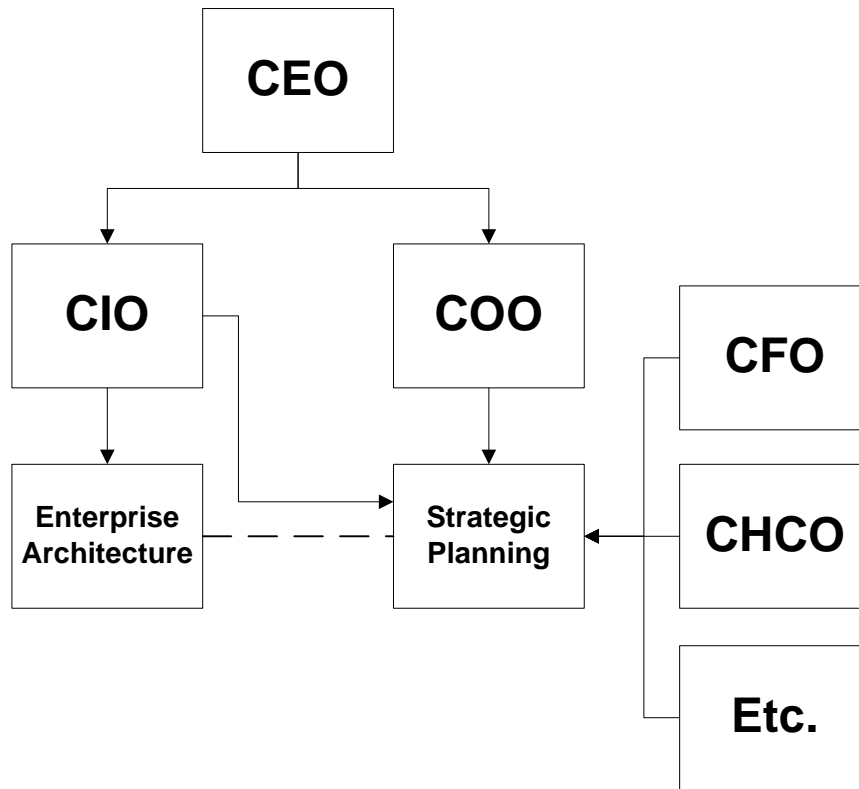
CEO

CIO   COO   CFO

CHCO

Enterprise Architecture   Strategic Planning

Etc.

FIGURE 11 TYPICAL ENTERPRISE ARCHITECTURE AND STRATEGIC PLANNING RELATIONSHIPS

Strategic Planning Drivers → Strategic Planning Process → Strategic Plan

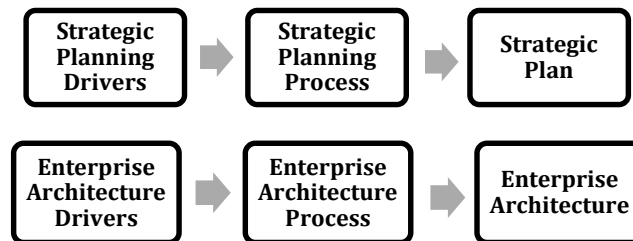Enterprise Architecture Drivers → Enterprise Architecture Process → Enterprise Architecture

FIGURE 12 TYPICAL INDEPENDENTLY OPERATING STRATEGIC PLANNING AND ENTERPRISE ARCHITECTURE PROCESSES

A better-integrated infrastructure would look more like Figure 13, where all C-level officers collaborate on a single process that combines strategic planning and enterprise architecture. The combined process is illustrated in Figure 14.
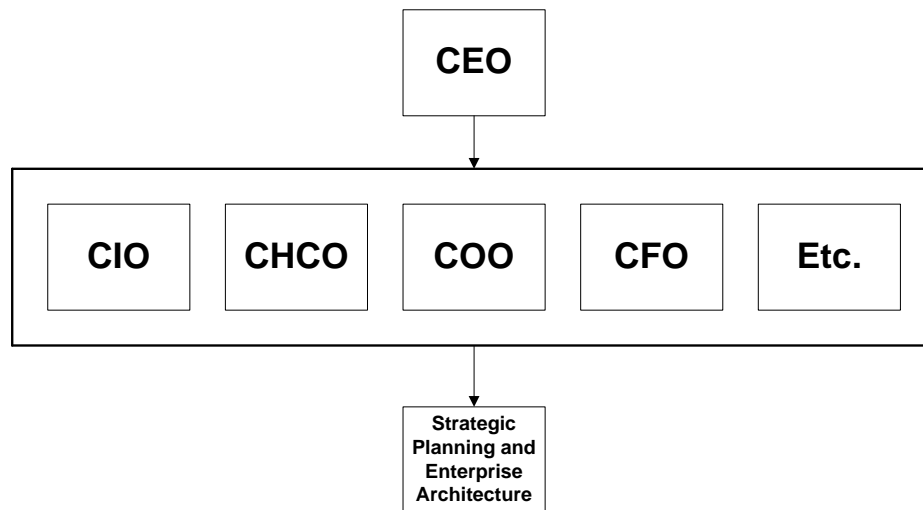
FIGURE 13 PROPOSED ENTERPRISE ARCHITECTURE AND STRATEGIC PLANNING RELATIONSHIPS

FIGURE 14 COMBINED STRATEGIC PLANNING AND ENTERPRISE ARCHITECTURE PROCESS

With the combined approach of Figures 14 and 15, organizations will better integrate the knowledge, skills, and abilities of both IT and other parts of the business. Integrating EA and strategic planning will enable senior leaders to better set organizational direction. Planners will have greater knowledge of the operations of the entire organization, and will be able to leverage that knowledge to develop more comprehensive plans and produce objectives that are more specific, measurable, achievable, realistic, and time-bound (SMARTer). Business managers, working in concert with enterprise architects, will better characterize the solutions necessary for successful business operations. Enterprise architects will guide more cost-effective procurement of information technology. Organizations will be better able to develop and implement strategic plans, and better able to improve their operations.

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About the Author

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THOUGHT LEADER INTERVIEW: MIKE CALLAHAN ON BUSINESS ARCHITECTURE

By Iver Band

Mike Callahan is a recognized business architecture expert and co-founder of AgileLayer, a provider of business architecture methodologies, software and consulting services. Mike and his colleagues have introduced a number of industry-first business architecture methods and tools over the past ten years in the areas of methodology, governance and maturity models, as well as capability modeling, assessment and roadmapping. Mike is based on Boston, and holds a BS in computer science from the Boston College School of Management.

EAPJ: How do you define business architecture?

MC: A business architecture describes and aligns an enterprise's current and target state capabilities, services, structures, motivations and value streams, as well as internal and external drivers. Business architecture guides and supports planning and execution across company domains and disciplines. The capability element of business architecture is foundational and is instantiated by or composed of people, process, technology, as well as other assets and constructs such as policies, information and skills.

EAPJ: How did you get started in the field?

MC: I was an early practitioner in the service-oriented architecture field, where I hoped that the business services abstraction could be a mechanism to better align business and IT. This, needless to say, proved difficult, but in the process, about six years ago, we understood that business capabilities could be a cornerstone for improved Business-IT collaboration and alignment, and a foundation for business architecture.

EAPJ: What types of organizations should consider doing business architecture?

MC: I believe all organizations can benefit. Clearly, though, with larger, more complex and dynamic enterprises, the potential value increases exponentially.

EAPJ: Could you please give a brief example of an organization that has derived great value from business architecture?

MC: One pharmaceutical customer has driven significant operational streamlining and organizational simplification through business architecture. This was accomplished by working with business leaders on a phased capability rationalization and innovation program that become a core discipline in a newly formed enterprise transformation office.

EAPJ: There are many prominent approaches to organizational improvement. In this issue, Mike Novak compares and integrates the Baldrige approach to organizational performance improvement and The Open Group Architecture Framework (TOGAF), which includes business architecture as the foundation for application, information and technology architecture. How

should organizations integrate business architecture with their approaches to quality and performance management and enterprise and solution architecture?

MC: Regarding quality and performance management, our baseline business architecture metamodel specifies alignment of business performance and quality metrics with business capabilities, describing and tracking type and level of alignment. Also, we recommend, over time, the introduction of capability-specific performance and quality metrics as well as service-level agreements. Metrics in use today don't typically correlate 1:1 with capabilities since they were based upon other constructs such as processes and value. However, as business architecture practices mature, we're seeing companies develop and manage capability-specific KPIs while continuing to track and manage how capabilities impact core performance and quality metrics. Regarding business architecture and EA, you could certainly do one without the other, but no business roadmap is devoid of a technology component, and quite often that component is the most substantive and complex element of the roadmap.

Regarding the integration of business architecture with other approaches, the challenge is less with positing an acceptably broad metamodel than with the handoffs and governance Integration involves many stakeholders touching the planning and design pieces, such as business experts, consultants, business analysts, business architects, enterprise architects, program and project managers and solution architects.

A related integration matter pertains to stakeholder deliverables and views. Companies continue to struggle with expressing digestible, informative and actionable views that provide cohesion and clarity across value scenarios, business architecture, planning and EA domains. We spend a lot of time on this: evolving our software, templates and methods.

EAPJ: How should an organization develop a business architecture capability?

MC: Senior sponsorship is required and there needs to be an early win producing and showcasing significant value from the application of the business architecture discipline. Early on, many are reluctant to tackle a significant scenario, but you can't gain momentum and credibility without taking on a high-profile pain point or program.

EAPJ: What skills are needed?

MC: Most important and lacking are management consulting skills. These skills include: relating emerging industry trends and practices to your organization's transformation progress; working closing with senior business leaders to identify highly differentiating and innovative approaches to delivering on strategic imperatives; and synthesizing cross-domain business drivers and requirements into unified, aligned capability development programs.

EAPJ: Where in the organization should the business architecture team be located?

MC: In the business; although we do see some successes when it's housed in IT. I think you'll see more and more companies incubate business architecture in IT and then move it into the business, using a federated cross-domain model.

EAPJ: When is it time to move the incubated business architecture team from IT into the business?

MC: Generally speaking, when you've had two or more strategic successes and have sponsorship from multiple heads of businesses.

EAPJ: And what is a federated cross-domain model?

MC: This model centers on a small central business architecture function to produce and inculcate methods, best practices and frameworks. This function is aligned with business architects practicing management consulting that matrix report into it and directly report into line-of-business leadership.

EAPJ: What motivated you to start Agile Layer?

MC: My colleagues and I saw an opportunity to create a specialist consulting firm that focused heavily on the creation and delivery of intellectual property and related enablement programs instead of providing staff and delivery services. We've kept very focused on business architecture for the last six years and continue to refine and extend our intellectual property and approach.

EAPJ: What advice do you have for individuals interested in becoming business architects?

MC: If you don't have management consulting skills, develop them! You need to be fully focused on solving significant business problems and providing business stakeholders with actionable insights and alternatives. Think in terms of game-changing capabilities, innovations and new business models. Look outside your company and industry. The business side typically lacks this kind of internal advisory service, and business architecture done well can fill the gap and then some!

About the Author

Iver Band, the EAPJ editor, is also a senior advisor with EA Principals, a training and consulting firm, the elected Vice Chair of The Open Group ArchiMate Forum, and a full-time enterprise architect at Cambia Health Solutions, where he focuses on business applications as well as architecture tools and techniques. Previously as an enterprise architect at a diversified financial services company, he focused on application architecture, and prior to that, infrastructure. Prior to his work in financial services, Iver had a lengthy career at Hewlett-Packard with roles ranging from IT Director for a global business to HP Labs Visiting Technologist. He is TOGAF and ArchiMate Certified, a Certified Information Systems Security Professional (CISSP), a Certified Information Professional, and a Prosci Certified Change Consultant. He speaks and publishes regularly on EA, and has co-developed the ArchiMate certification examinations.

CALL FOR SUBMISSIONS AND REVIEWERS

By Iver Band

The Enterprise Architecture Professional Journal welcomes contributions in its *fields of interest*, which are enterprise, business, application, information, integration, technology and security architecture, as well as the strategic management of business and technology transformation. EAPJ publishes peer-reviewed material that advances its fields of interest and supports the careers of its readers.

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