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VOLUME 9 ISSUE 1

magazine

BUSINESS ARCHITECTURE

THE BLUEPRINT FOR SUCCESS?

**Business Architecture:
A Pragmatic Perspective**

**Mike Walker Talks Business Architecture and
the Best Practices for Using It**

Doing the Right Thing vs. Doing Things Right

**Business Architecture and the Five Benefits
of a Unified Approach to
Development Management**

PUBLISHER

Ben Geller & Ashlee Motola

EDITOR-IN-CHIEF

George S. Paras

MANAGING EDITOR

Holt Hackney

ART DIRECTION & DESIGN

BNewton Associates

Architecture & Governance

8601 RR 2222

Building 3, Suite 300

Austin, TX 78730

512-536-6270

www.ArchitectureandGovernance.com

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FROM THE EDITOR

The Business Architecture Opportunity

By George S. Paras

Business architecture (BA) plays an important role in enterprise architecture. It helps establish context, including the link to strategy. It is the glue that connects and holds everything else together. More than any other part of EA, it can be meaningful to executives, managers, and staff alike, spanning the organizational divide that exists between IT and the business. When done well and in clear business terms, BA can help put everyone on the same page. It drives informed, coordinated, and consistent decision making across the enterprise and is used to guide specific implementations. That is the business architecture opportunity.



The challenge is to make it work. Diagrams and models are a start but are not enough. Like everything else in EA, it is ultimately about participation and communications. BA can only really be successful when there is business ownership. An active partnership between business and IT-side personnel in a wider EA program is a goal. Many traditional IT-resident enterprise architects have been attempting business architecture work, by proxy, for years. There have been a few wins. Now, for the first time, we see enthusiasm among business-side executives, even to the point where they are initiating BA work. It isn't obvious, yet, that many of them really appreciate the connection to EA, but their interest is a positive sign. Clearly, this is an opportunity to help accelerate EA.

This issue of A&G features a contributed article on business architecture progress at Wells Fargo and part 1 of an interview with Mike Walker on business and information architecture. Part 2 of the interview and additional articles will follow in future issues. BA isn't just the latest hot topic. It is a fundamental part of EA, and we hope to make it a continuous presence in A&G. Please share this issue with your business-side colleagues! Perhaps your story, and their participation, will appear in a future issue. **A&G**

GEORGE S. PARAS is editor-in-chief of A&G and managing director of EAdirections.

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BUSINESS ARCHITECTURE

A Pragmatic Perspective

By Atul Bhatt

INTRODUCTION

Business architecture (BA) is no longer just an emerging discipline or an “interesting concept.” While far from being mature, it is increasingly being leveraged by enterprises to provide tangible value. And in the industry, business architecture has been gaining momentum, slowly but surely, through the activities of a growing BA community, involved in numerous efforts in or related to business architecture. This article examines the current state of BA in the industry and presents a pragmatic perspective to address the situation.

RATIONALE

Let us examine a few other aspects of BA’s current state in the industry.

- While instances of BA providing value are surfacing, the field itself is far from being mature. There are as many definitions and viewpoints as there are

practitioners. Good practices are being proven out and socialized, but standards are absent, and will take some time to develop and gain industry-wide acceptance.

- Numerous BA communities are being established to advance this discipline and help its practice. However, while being well-intentioned in their own way, they also tend to impose their own views and preferences, which might further confuse those wanting to get into this field as practitioners.
- The tools outlook is not rosy either. While the related fields of Business Process Management (BPM) and Business Rules Management (BRM) have fairly mature tools, generic BA tools are still not there in functionality, usability, and maturity. At best, the current enterprise architecture tool vendors (Sparx Systems EA, Troux, etc.) have been extending their existing toolsets to cover some of the BA aspects.

This loosey-goosey state of affairs is not atypical of new fields in their journey from nascence to maturity

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into robust disciplines and practices providing tangible value. But that does not really help a would-be BA practitioner who can end up spending an inordinate amount of time “agonizing” about this unsettling situation. One cannot afford to wait for a consensus on the fundamentals or for standards to be established. The practical need is to hunker down and start something or risk being left behind.

That sort of pragmatic approach is precisely what we are trying to adopt at Wells Fargo. And as one of the starting steps in this approach, we are establishing and socializing clear statements on the following four key aspects of BA:

- Definition and Components
- Value Proposition
- Key Activities and Deliverables
- Community of Practice

The rest of this article explores each of these aspects in further detail.

BA DEFINITION AND COMPONENTS

There are several “good” definitions, and most of them are valid and useful in their own right, while being limited in some ways. The point is to adopt a definition that

suits your environment, and be aware of its strengths and limitations. The following is a consolidation of several definitions that have been around in the industry, and it captures quite well the quintessence of BA:

Business architecture is a disciplined approach to creating and managing business-specific artifacts that serve as a formal blueprint for the planning and execution of strategy across the enterprise.

The *business-specific artifacts* may be grouped into the following three major areas:

- **Governance Structures:** Including the business context and organizational views showing the various structures; relationships among roles, functions, and business units; and their internal or external management.
- **Business Semantics:** Information about all the business entities that the organization depends on to communicate and structure the understanding of the areas they operate within. It includes the enterprise’s vision, mission, strategies, goals, offerings, customers, channels, costs, revenues, resources, principles, policies, culture, rules, events, etc.
- **Value Streams:** End-to-end collections of activities that deliver value to the enterprise’s main constitu-

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Figure 1: BA Value Proposition

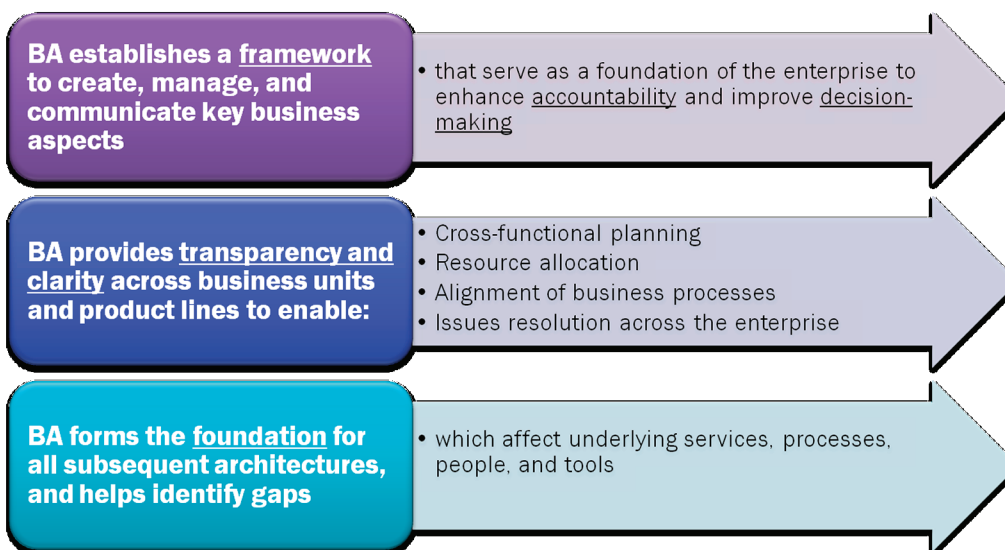


Figure 2: Deliverables for BA Activities

Activity	Deliverable/Artifact	Features
Business Capability Modeling & Mapping	Capability Taxonomy	Multi-level
	Capability Model	Hierarchical, value-chain
	Capability Map	To various entities such as processes, rules, products, information, applications, projects, etc.
Context Analysis	Context Model	Includes scope, key stakeholders, and interactions with other domains of interest.
Domain Analysis	Domain Model	For Vision, Mission, Strategies, Goals, Offerings, Customers, Channels, Resources, Constraints, Costs, Revenues, Competitive Posture, Principles, Policies, Culture, etc.
Business Vocabulary Development	Catalog / List / Ontology Model	For key enterprise assets such as Customers, Products/Services, Employees, Partners/Suppliers, and Business units
Governance / Organization Analysis	Organization Model	For various governance structures, such as mgmt/reporting, business units, accounting units, and risk mgmt units
Business Process Design & Modeling	Process Model	In BPMN (Business Process Modeling Notation) or other notation
Business Process Mining & Analysis	Analysis Results	
Business Rules /Events Capture & Modeling	Rules / Events Model	In DMN (Decision Modeling Notation) or other notation
BA Tools - Technology Selection, Usage, etc.)	Catalog / List /Contract	Licensing, support, training, etc.

ents—customers, shareholders, employees, and partners. They include functions, capabilities, processes, operations, etc.

BA VALUE PROPOSITION

The overall value of BA is in establishing a framework to create, manage, and communicate key business aspects that serve as a foundation of the enterprise to operationalize strategy, enhance accountability, and improve decision making. Dominant BA activities, both in Wells Fargo as well as in the industry, have been centered on business capabilities, processes, and rules—their modeling, mapping, evaluation, monitoring, etc.—with gradual branching out to other areas of BA such as modeling organizations, governance, and key enterprise assets. As in the case of BA definition, BA value proposition statements abound in the industry. Figure 1 attempts to consolidate many of those into three major categories.

BA KEY ACTIVITIES AND DELIVERABLES

Figure 2 describes the deliverables for the main BA activities and the corresponding salient features of those deliverables.

BA COMMUNITY OF PRACTICE

The final key step is to establish a collaborative community of practice with specific objectives and plan of action spearheaded by a core group.

The prime purpose of the core group, of course, is to support the enterprise’s community of BA practitioners, consumers, and enthusiasts, and advance the practice of business architecture. Specifics of this purpose and role are shown in Figure 3.

One of the first goals of the BA core group is to clarify the field of BA, particularly its relationship to other domains that have been around for a lot longer, such as Business Process Management (BPM) and Business Rules Management (BRM). Both BPM and BRM have had active communities of practice within the industry. Their main focus, however, has been on the evaluation and use of the vendor tools for accomplishing various aspects of these areas. The “business” aspects of BPM and BRM often get overshadowed or neglected, resulting in solutions to business problems that are driven primarily by technology tools.

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Figure 3: Role of Business Architecture Core Group

Define and clarify the discipline and practice of BA	<ul style="list-style-type: none"> • Scope, components, value proposition, deliverables, etc.
Support current BA efforts within the enterprise	<ul style="list-style-type: none"> • Maintain inventory • Provide guidance and coordination across business lines
Identify opportunities for collaboration	<ul style="list-style-type: none"> • Among various BA efforts • Between BA and related efforts
Help develop enterprise-wide BA strategy and road map	<ul style="list-style-type: none"> • Current and target states • Gaps and future direction
Develop templates for various BA views/models	<ul style="list-style-type: none"> • Context, domain, governance, capabilities, processes, rules, events, etc.
Knowledge transfer	<ul style="list-style-type: none"> • Case studies, panel discussions, webinars, etc.
Best practices, methods and standards	<ul style="list-style-type: none"> • Glean, develop, share
Tools and techniques	<ul style="list-style-type: none"> • Evaluate, recommend, socialize, support

Given that both business processes and rules are key components of business (see the BA definition), one of our strategies at Wells Fargo is to position BA as the overarching discipline that includes the existing efforts in BPM and BRM, especially the “business” aspects of those disciplines. Consequently, we are in the process of consolidating the existing BPM and BRM communities under the umbrella of the BA community of practice. **A&G**

ATUL BHATT is a senior enterprise architect in the enterprise architecture group at Wells Fargo and is responsible for all aspects of developing and promoting the use of architecture strategies, solutions, standards, and practices across the enterprise. Dr. Bhatt has more than 33 years of systems architecture, technology planning and integration, and business strategy experience in computers and communications across various industries. He can be reached at atul.bhatt@wellsfargo.com.

Analyst: Enterprise Architecture Practitioners Significantly Influenced \$1.1 Trillion of Worldwide Enterprise IT Spend in 2012

Fifty percent of enterprise architecture (EA) practitioners have “a significant impact” on enterprise IT budget activities and decisions, according to a recent survey by Gartner, Inc. A July 2012 Gartner survey of EA practitioners found that half of EA practitioners have an influence over their organization’s IT budget allocation that is either “final decision maker” or “great deal of influence.”

Based on the EA survey results from Gartner events in North America and Europe, analysts estimate that

EA practitioners have a “final decision-making” influence on \$331 billion in worldwide enterprise IT spend and a “great deal of influence” on \$774 billion in worldwide enterprise IT spending. Overall, EA practitioners have an influence that is either “final decision maker” or “great deal of influence” on \$1.1 trillion in worldwide enterprise IT spending.

Philip Allega, managing vice president at Gartner, said EA practitioners are “overwhelmingly focused on delivering on business value and strategic transformation. Gone are the days of just ‘doing EA’ with little value or impact. Sixty-eight percent of organizations surveyed stated that they are focusing their EA program on aligning business and IT strategies, delivering strategic business and IT value, or enabling major business transformation.” **A&G**



MIKE WALKER

PART ONE

Walker Talks Business Architecture and the Best Practices for Using It

Visit the home page of “Mike the Architect” at www.mikethearchitect.com/, and at first glance, the building on the site might suggest that the author is an architect—the kind who designs buildings.

But make no mistake. Mike J. Walker is an enterprise architect, one with few peers when it comes to being a leader, innovator, and expert in the technology industry.

In the summer of 2012, Walker became director of enterprise architecture at Dell, leaving a successful career behind at Microsoft for a move to the Austin technology company. With leadership positions at Dell and Microsoft on his résumé, as well as many other respected companies, we at *Architecture & Governance Magazine* sought out Walker to get his thoughts on the industry, with a special emphasis on business architecture. What follows is part 1 of our interview, with part 2 to follow in the next issue.

A&G: What are your definitions for business and information architectures?

WALKER: I really think it’s as simple as this: Business architecture is a disciplined approach for distilling a company’s corporate strategy into an architecture that’s implementable in IT terms. This is rationalized through specific methods, models, and tools. An example of some of these models would be business capability models, OMG motivational models, strategy maps, etc. These are a way for architects to understand what the company wants to do. So BA brings that strategy into something useful and implementable.

Information architecture is again a disciplined practice that consumes a business architecture and finds

the information strategy that is required to implement these new capabilities that the business wants to bring on board. Business architecture prescribes the IT capabilities that will be required to define information architecture going forward. So to bring these two together, business architecture helps us understand what the business wants. Information architecture now takes that definition of what the business wants, its goals or objectives and strategies, etc., and says, “Okay, how do we implement this from an IT perspective?”

What this means from an industry perspective is traditionally we’ve been leading with “applications drive the information requirements.” What we’re seeing here is architecturally that’s wrong. Architecturally, if you start with applications, you’re going to miss a lot of the requirements that are needed from the business.

A great example of this is regulatory compliance. If I start with “I want to move to the cloud,” but I haven’t looked at my compliance requirements, most likely I’m going to run into problems with implementation. So that is a very real example of why information architecture should prescribe the IT capabilities and the application architectures that we build.

As you go through the architecting process, you start with business architecture that’s going to define your information architecture, and from there, you start to get into the technology world. From information architecture and behind, it is mostly business oriented; very, very little IT-oriented things. So you’re dealing with “What is the definition of my information?” “How should I

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classify my information?” “How should it flow?” “What type of resiliency should I have around my information?” A lot of those nonfunctional things will be addressed as well as a lot of the compliance and the security issues.

All of those areas usually link up to areas in the organization that can say “no” to moving forward with an architecture. So, an auditor has the ability to stop a project right where it’s at. If you’re going to break the law because you’re trying to pass information out of Germany and Germany has data summary laws that say your data must stay in Germany, that will be a show stopper. So we start with information architecture so we don’t run into those challenges. A lot of the detailed architecture technology work happens from the application architecture world and below.

A&G: What key models/representations do you think are the best for expressing BA/IA’s?

WALKER: For business architecture, you’ll have things like OMG motivational models, value chain models, benefits dependency networks, and business capability models.

In the information architecture world, you’ll have information segmentation models, data dissemination models, and enterprise data models. And to qualify the enterprise data models: An enterprise data model is not an ERD. An ERD represents a physical implementation of the description of the data. This is purely the taxonomy, oncology, of the corporation’s information assets.

Those are the primary ones, although obviously there are a lot more models out there. But those are some good ones that we would use in each discipline. Probably another good one for information architecture would be the data migration models that really go into how data and the life cycle around that data evolves as it goes through our capabilities and our systems.

A&G: Do you believe BA/IA is useful and, if so, what value do you think it might bring to the work of EA practitioners? To the enterprise?

WALKER: Generally speaking, the value these activities, these architectural efforts, bring is they’ll be able to understand value. They can understand and realize

value in a more repeatable and predictable way. If we don’t go through the process of understanding why the business wants something, how can we get to the point where we are realizing that value that we’re expecting? Business architecture is really translating the needs, the wants, the motivations, and the drivers from the business. If we don’t do that well, the solutions that we deliver won’t match the expectations of our executives and our shareholders.

If we don’t do information architecture well, then we will have suboptimal solutions to solve the business’s problems. We’ll have higher degrees of risk in our system because we haven’t understood and classified the information that we want, or we don’t understand the way that information should flow within our enterprise. By doing these activities, we are able to elevate the enterprise architecture or practice into a trusted partner for the business.

A&G: What roles should be involved with BA/IA activities?

WALKER: It largely depends on the organizational operating model. Typically, you’ll have the role of the enterprise architects who focus on all architectural domains broadly. They have to understand what information architecture is, how to build one, etc.

You’ll also have what I would refer to as domain architects. Domain architects are architects with a specialty. And these architects go really, really deep into their subject areas. For example, you could have an EA that’s wide but very shallow, but then you would have a domain architect, a business architect, and an information architect that are very deep in that discipline. That provides scale in an enterprise architecture department: they can scale these resources. The department relies on these information architects for their deep expertise in those domains—not only how to perform those practices but also the emerging trends in that practice, etc. And that’s typically from an EA perspective of the role.

There are a lot of secondary relationships of people that connect in, like stakeholders, but as far as primary relationships those are the two roles that interact with those disciplines. **A&G**

Doing the Right Thing vs. Doing Things Right

By Ben Geller, Vice President,
Marketing, Troux

“Management is doing things right; leadership is doing the right things.”¹ Businesses have always had tremendous decision-making challenges due to lack of relevant, complete, accurate, and timely information. And this problem has become more acute as businesses expand or downsize, the pace of change increases, and the breadth of change expands.

So with all of this change and chaos swirling about, it’s not difficult to understand why some business leaders get caught in the trap of spending precious human resources, time, and money on doing a lot of things right. After all, what harm can come from being efficient? Efficiency equates to a smooth-running organization. Efficiency means optimal performance. Efficiency illustrates competency and expertise. Certainly all of these attributes represent qualities we expect business leaders to establish within their enterprise.

But is this enough?

If executives are fully occupied with execution and doing things right (e.g., processes, projects, and production), how will they know when time, effort, and money are being spent on areas that are not truly important to the business?

While efficiency, doing things

right, is certainly vital for business success, perhaps it’s even more important for executives to take a step back on a routine basis and ask themselves a few important questions such as:

- Where are all business assets (people, processes, technology, applications)?
- How much does all this cost?
- Are all of these assets vital to my business—are there areas of obsolescence, redundancy, or waste?
- What assets are really needed to operate and grow the business?
- What are our plans to introduce assets that are missing, optimize critical assets, and safely decommission the rest?

Answering these questions will help ensure precious resources (time, people, and money) are being directed toward areas that will help the business grow and better compete.

By adopting an Enterprise Portfolio Management (EPM) approach, leaders can make more informed business and technology strategy decisions by gaining insights into the key areas (portfolios) that characterize their business. This transparency delivers executives with a clear, real-time view into their assets (tangible and nontangible) and illustrates how and where they are spread across their business.

An EPM approach shows decision makers how assets support corporate goals, strategies, and core business processes. With this newfound clarity, decision makers have the ability to better understand which assets are required to operate and grow their business and which are not. This level of visibility equips business leaders with the ability to take action by making well-informed investment and divestment decisions. Hence “doing the right thing.”

It is equally important to recognize that doing the right thing also means avoiding “doing the wrong thing.” Unfortunately, it is not at all uncommon to hear examples of two project teams whose actions are in direct conflict with each other. Imagine the savings and benefits in time, money, and morale that would be achieved by eliminating one unneeded project.

Using an EPM approach, business leaders and decision makers no longer have to assume they are doing the right thing. Decisions that affect the business can now be consistently made on facts rather than “gut-feel.” Business leaders will be armed with the confidence that the time, money, and effort they are responsible for governing are being spent in the right places. Once executives know the right things to do, they can focus on doing them right. **A&G**

¹ Peter F. Drucker, *Essential Drucker: Management, the Individual and Society*



Business Architecture and the Five Benefits of a Unified Approach to Development Management

By Phil Marshall

(Editor's Note: The concepts discussed in this article, while illustrated through a banking example, can be broadly applied across other industries.)

Ernst & Young's 2012–2013 *Global Banking Outlook* shows that increased competition among banks and nontraditional new entrants, such as other financial services providers or technology companies, has created risk for industry participants unless they are able to adapt and execute a credible strategy for managing IT costs. With spending under heavy scrutiny, banks must think about software differentiators and technology expenditures differently. Instead of being a cost to manage, IT spend must be viewed as an investment necessary to support growth and new business development.

Banks have a secret arrow in the cost-control quiver—open source software (OSS). OSS is in wide use on Wall Street—Red Hat Enterprise Linux runs the NYSE, for example—but for many institutions, OSS use is tactical and ad hoc, largely because it's viewed as a disparate set of solutions to specific problems rather than as an integrated platform. The increasingly popular use of projects such as SpringSource, JBoss, MySQL, ActiveMQ, and Camel, which offer open source equivalents to commercial application servers, databases, message brokers, and integration brokers, and the IBM-backed Eclipse toolset, are being used widely by enterprises and financial services institutions.

Despite the popularity of these projects and toolsets, few banks have taken the step of betting the enterprise on OSS, whether at the application level or by providing

development teams with methods and technologies to integrate OSS components into proprietary apps. The difficulty of integrating disparate projects, security issues, and a lack of organizational and cultural support have been traditional barriers to OSS adoption in financial services. Another barrier is the need to govern and manage the use of OSS to ensure compliance with both internal and external standards and regulations.

Where OSS shines, and where it will finally break through, is in its flexibility, adaptability, strong community support for innovation, security, and low cost. Increasingly enterprise architects are working through architecture review boards to make the case that OSS is, in fact, ready for prime time. A successful outcome will require EAs and IT to adopt a unified approach to development management, while changing the institutional perception of the relationship between cost and value.

IT: COST CENTER OR SOURCE OF INNOVATION?

IT spend can account for up to 20 percent of an institution's fixed costs. Some organizations go so far as to measure IT spend as a percentage of revenues, a somewhat controversial approach. In fact, in 2011, Gartner reported most enterprises allocate 3.5 percent of revenue to IT spend, but noted that in technology-enabled industries like financial services the number is closer to 6 percent. An alternate approach is to measure and forecast IT investment based on contributions to enterprise productivity and innovation.

Regardless of approach, however, most analysts and

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institutions agree: controlling IT costs must be a continuous initiative. Accomplishing this means managing the cost of ongoing development and maintenance, which can account for as much as 50–70 percent of IT's time. Here again, a centralized approach to development management is EA's best friend.

CHALLENGES TO A UNIFIED APPROACH TO DEVELOPMENT MANAGEMENT

Among the significant challenges to OSS use via centralized development management are structural issues:

- Bank IT groups tend to be naturally siloed, leading to reduced cooperation and sharing across departments. Such common barriers reduce the potential for realizing the benefits of sharing code and methods across organizational boundaries as well as the efficiency of centralized governance and management.

Cultural challenges stem from the multigenerational, distributed workforce characteristic of most development organizations. OSS is a preferred development

method for younger developers and enterprise architects due to its collaborative nature. A larger OSS development community contributes not only to working better, faster, and more cost effectively, but also to producing code of higher quality and better security.

Centralized governance, architecture, and development management provide consistency cross-silo while demonstrating to developers that the entire organization shares challenges, enabling them to break out of old thinking and be more innovative.

FIVE BENEFITS TO A UNIFIED APPROACH TO DEVELOPMENT MANAGEMENT

For many financial services organizations, the key to successful OSS implementation requires a unified approach to development management. This strategy acknowledges that IT really serves three constituencies: business process owners, information specialists, and technology implementers. Such an approach delivers clear benefits:

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1. **A robust, engaging, centralized IT strategy.** When a unified approach is accepted across the organization, it solves a number of problems. It mitigates the risk of rogue IT purchasing seen since the advent of cloud computing and BYOD. IT's efforts can be diverted from spending on core infrastructure and focused on end-user driven projects such as business intelligence, analytics, collaboration systems, and customer relationship management systems.
2. **Cost-effective approach that supports business goals:** A centralized development management process should include governance and management of OSS across the development life cycle while building in compliance, from search and selection to implementation, integration, and validation, in addition to a software catalogue and inclusion in a bill of materials enabling organizations to benefit from code reuse and standardization.
3. **Differentiation from competitors:** Banks must differentiate themselves both internally, through development of innovative software, processes, and policies, and externally, through customer-facing services (e.g., mobile banking), which feature ease of use. Some 90 percent of mobile apps are OSS-based, and savvy bank EAs have charted a path to development for mobile using OSS components.
4. **Motivated development teams:** Developers don't want to spend the bulk of their time maintaining old systems—they want to develop challenging and valuable software. OSS, which powers the cloud, big data, and also mobile, provides developers with a wealth of options for developing innovative new systems that will help banks differentiate their service offerings. A centralized development management function recognizes that OSS is where developers want to work, especially millennials.
5. **Increased innovation with less risk:** Creating differentiated service offerings requires an innovative approach to software development. EAs create centralized development management strategies to bridge the gap between business strategies and technical requirements, using IT to drive business adaptability while reducing the complexity of existing IT systems and improving the innovation and agility of new systems. Leveraging OSS components, rather than reinventing the wheel, helps to free develop-

ers to spend time innovating and assembling rather than writing code.

IT ARCHITECTURES, GOVERNANCE AND MANAGEMENT

To compete in fast-changing global financial markets, banks must create an IT architecture with appropriate governance and management that spans:

- **Generational expectations.** Use of OSS as a core development tool helps bridge the gap between managing millennials and graybeards. There are inevitable differences between developers in multigenerational workforces, but a consistent and measured approach to architecture and governance can smooth over generational differences.
- **Cultural expectations.** Using OSS vs. proprietary solutions not only meets the needs of developers (especially younger ones), but it also offers EAs and banks the flexibility and agility to solve problems more quickly, and at lower cost, than would be possible with most commercial/proprietary systems.
- **Organizational expectations.** Achieving more, better, and faster with less cost and risk is a mantra for today's CIOs. High-impact projects such as workforce mobilization, big data management, BI, and analytics and cloud computing are simpler to develop and manage using OSS with an appropriate, centralized development management approach.

Today, creating a best-practices approach to developing an IT architecture to support a bank's business goals requires CIOs, enterprise architects, and developers to unite in their efforts to centralize development management while leveraging the considerable power and benefits of OSS and open development methods. Open source software is both commoditizing commercial software and providing building blocks to speed development of new banking applications. By turning to OSS, banks can reduce their software costs and rapidly develop new applications, trading platforms, and applications—while writing less code and producing more functionality at less cost. **A&G**

PHIL MARSHALL is a senior manager at Black Duck Software (www.blackducksoftware.com).

A&G CALENDAR

Troux Worldwide Conference

Austin, Texas
March 19–20, 2013
www.troux.com/resources/events/conference2013/

CIO Summit

Island Hotel, Newport Beach, California
April 8–10, 2013
www.ciosummitna.com/

Forrester's Forum For CIO, EA, Security & Risk, Infrastructure & Ops, And Sourcing Professionals

Washington, DC
May 6–7, 2013
www.forrester.com/Forresters+Forum+For+CIO+EA+Security+Risk+Infrastructure+Ops+And+Sourcing+Professionals/-/E-EVE5099

Gartner Enterprise Architecture Summit

Park Plaza Westminster Bridge, London
May 14–15, 2013
www.gartner.com/technology/summits/emea/enterprise-architecture/

Gartner Enterprise Architecture Summit

National Harbor, Maryland
May 22–23, 2013
www.gartner.com/technology/summits/na/enterprise-architecture/

IRM UK's Enterprise Architecture Conference

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- **Craig Martin**, CTO of Enterprise Architects, talks about the evolving roles and responsibilities of the enterprise architect.
- **Frank Malta**, executive director of EA and chief architect at Merck, discusses enterprise business capability modeling at Merck and provides advice to EA teams looking to get traction on their EA efforts.
- **Dave Sanford**, security strategist and founder of Austin Computer Security, discusses the biggest threats that architects need to have on their radar over the next few years.

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