

For: Enterprise
Architecture
Professionals

EA Methodologies Enlarge To Address The New Business Landscape

by Henry Peyret, May 21, 2013

KEY TAKEAWAYS

The Business Context EA Operates Within Is Changing, Requiring New Approaches

EAs now need to provide strategic architecture guidance in a context where IT is embedded in a company's products; the dependencies of the business ecosystem are rising in complexity; and rapid change means that a company must be stable and agile simultaneously.

EAs See That Their Existing Architecture Methods Are Falling Short

The stock-in-trade of target state and road map development, standards, and waterfall architecture reviews are less successful in this new context. The most widely used EA methods, unfortunately, are anchored in a traditional view of single top-down strategy and slow, measured change.

Three New Ways Of Thinking Are Appearing For EAs

New ways of thinking for EA are appearing, illustrated by frameworks we classify in three categories: 1) redefining EA foundations; 2) extending Lean/Agile methodologies; and 3) integrating with other IT best practices such as COBIT and ITIL. These new methods provide a palette of interesting concepts for EAs to draw on.



EA Methodologies Enlarge To Address The New Business Landscape

Landscape: The EA Method Playbook

by [Henry Peyret](#)

with [Alex Cullen](#), Mackenzie Cahill, and Emily Jedinak

WHY READ THIS REPORT

Digital is increasingly part of products and services offerings — provoking disruption to the old ways of doing things. Companies are facing uncertain market changes and economic conditions, which requires ongoing adaptation and innovation as they continue to optimize existing operations. Well-known enterprise architecture (EA) methodologies such as TOGAF and the Zachman Framework are good for stable and slowly evolving business environments but are ill suited to provide the agility required for continuous adaptation. This report of the EA method playbook reviews some of the innovative new EA methodologies redefining EA foundations, addressing the challenges provided by Agile methods, and integrating with other well-established IT best practice frameworks such as COBIT and ITIL.

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Forrester interviewed seven vendor and user companies, including Leffingwell, Pragmatic EA, Proact Business Transformation, and Tetradian.

Related Research Documents

[Develop A Business-Centered Enterprise Architecture That Boosts Agility](#)

August 31, 2012

[Make Software Delivery More Responsive To The Business](#)

April 25, 2012

[Use TOGAF 9 As Your Next EA Framework](#)

July 1, 2009

A RADICALLY DIFFERENT BUSINESS LANDSCAPE REQUIRES NEW EA APPROACHES

Facing forces ranging from economic uncertainty, the age of the customer, and globalization of markets and competitors and fueled by technology consumerization and the threat of digital disruption by new market entrants, businesses are seeing the need for new strategies and new approaches to strategy. Several factors are driving this:

- **Business leaders are beginning to appreciate their complex web of ecosystems.** Most large enterprises participate in several ecosystems involving customers and suppliers, governments, and societies. Business leaders recognize that their strategies must take into account these ecosystems. For example, despite the proliferation of interaction channels and networks, enterprises should still appear coherent to their different customers. The notion of ecosystems implies that impacts are bidirectional: Enterprises are affected by external factors, but changes within the enterprises imply changes of behaviors of suppliers or customers.
- **IT is embedded in products and services.** For many industries and manufacturing companies, the business is becoming a service business rather than a product business. For example, rather than selling tires, Michelin is selling “kilometers” with its Michelin Fleet Solutions, which includes on-site truck tire replacement.¹ For manufacturers, this provides recurrent revenue, and customers pay for what they consume. Making this work increasingly requires that IT be embedded in products and services — but as systems connected back to the provider, not as standalone components.
- **Rapid change demands that businesses become both more agile and more stable.** Enterprises are composed of capabilities that range from stable in terms of their “what and how” to very dynamic. Think of an insurance carrier with stable product administration but very dynamic agent and customer systems. With the stable capabilities, businesses need measured and controlled change, whereas with the dynamic capabilities, they need to support fast change, fast change-in-direction, and many changes occurring concurrently.

EA Finds That Existing Methodologies Are Inadequate For This Environment

EAs and CIOs are giving us many reasons that existing EA methodologies do not seem adequate to address their dynamic enterprise challenges:

- **Planning and developing architecture takes too long.** Although companies can change strategies quickly, they then face the big slowdown of executing one or several strategies. For enterprise architects, this has traditionally meant defining a new target state, comparing it with the current state, and then developing a road map. But this multistep process is now perceived as taking too long — by the time EA has all of these documented and approved, the business will have moved on.

- **Current methodologies have difficulty dealing with multiple business strategies.** For the first time in economic history, companies must deal with innovation and cost rationalization at the same time; in previous crises, they focused on one or the other. The result is great uncertainty about decisions dealing with multiple or changing strategies. The current EA methodologies work well for well-defined, top-down strategy to IT — while in reality, changes occur at every level, sometimes with multiple stop-and-go initiatives, depending on current context.
- **Innovation happens outside of EA.** Digital disruption — the ability of small teams to leverage free or nearly free technology to innovate new products or services — means that innovation is distributed across the business and that many innovation activities occur in parallel. Time-to-market for new products or services becomes a weapon, and IT assets should be viewed as components to build within these products and services. Current EA methodologies, in contrast, are more adept at building on known requirements, stable environments, and slowly evolving ecosystems. EAs, to be seen as a value-add to innovation, need to ditch the methods that risk creating innovation silos.
- **Agile methodologies collide with established architecture processes.** Solution architects must deal with Agile methodologies with their quick decision processes. Project reviews enforcing standard solutions adoption are seen as slowing projects and putting solution architects in a no-win situation: sacrificing either the architecture or the project's schedule and budget.

Today's Methodologies Are Dominated By Yesterday's Thinking

Methodologies for enterprise architecture have never stopped progressing as the practice of enterprise architecture has continued to mature over the past nearly three decades. Each macro IT evolution has seen the emergence of an architectural methodology: IDEFx or Merise for the mainframe period; the Zachman Framework for client/server; and TOGAF for the Internet period. Each of these methodologies enlarged its coverage compared with the previous generation: Compared with IDEFx (covering the what and how dimensions), the Zachman Framework added multiple viewpoints and enlarged the dimensions (who, why, when, and where). TOGAF established several frameworks that were useful for technical reference and architectural documents and added the ADM process to the methodology (see Figure 1). Other methodologies important in specific markets arose, including US government agencies (FEAF or NASCIO) and military agencies (DoDAF or MODAF).² But they did not really enlarge the coverage but rather adapted it to the specific context by providing additional frameworks.

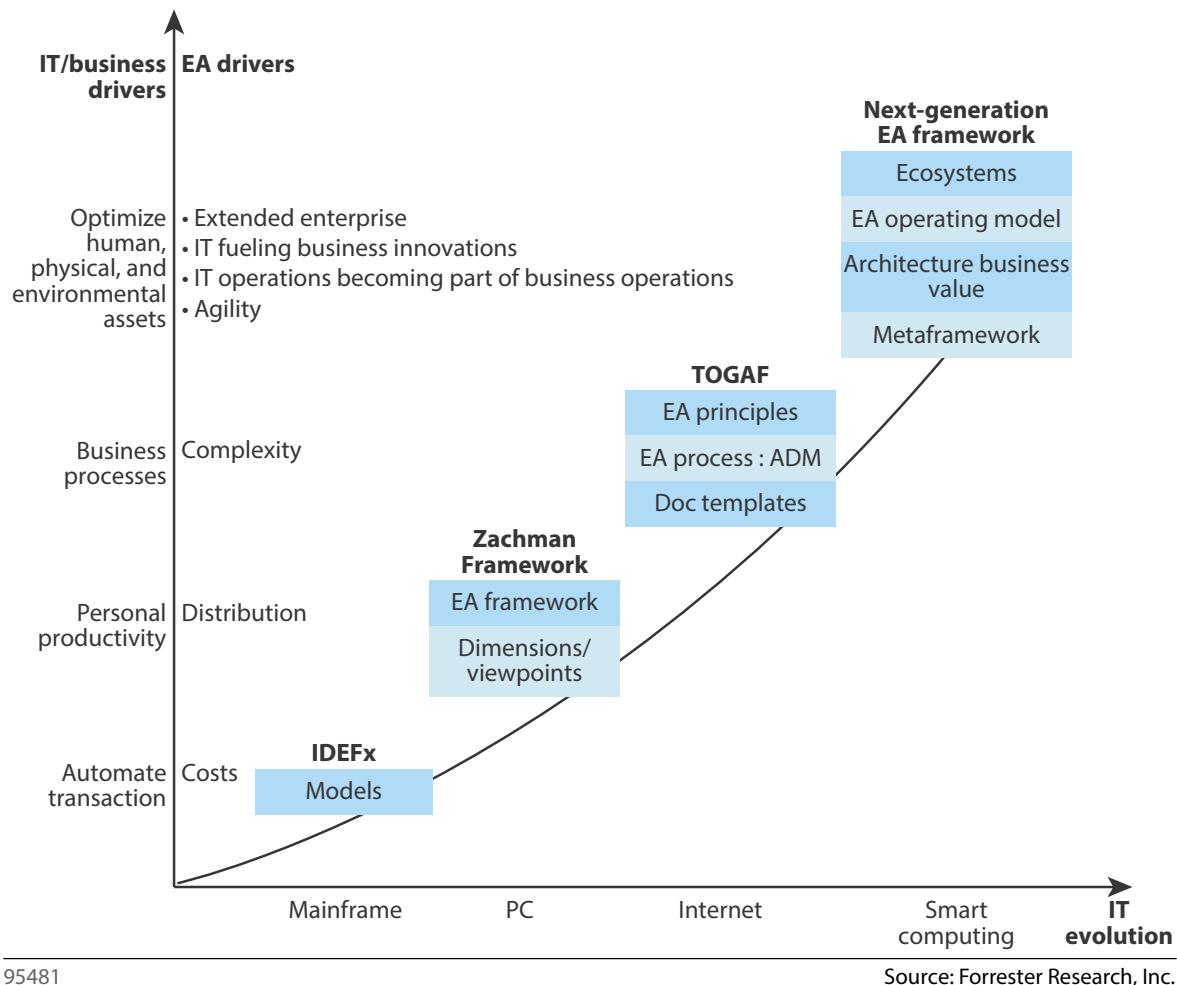
TOGAF has become the most-used EA methodology. However:

- **The current TOGAF version has problems addressing new challenges . . .** Although TOGAF is today's most-adopted EA methodology for generalist EAs, we are seeing more companies frustrated by the limitations of the current version, TOGAF 9, in the areas of business

architecture coverage, EA metrics, and communication. In addition, practitioners would like more-pragmatic guidance for adapting TOGAF to business and/or IT objectives and want useful results sooner to demonstrate EA value. As a result, many enterprise architects dealing with the new enterprise challenges are seeing the need to develop their own approaches.

- **... and the next TOGAF release will not address these challenges, either.** The main objective for the next release is to continue to simplify and organize the content into concepts, guidance, and examples. On the content front, TOGAF continues to progress around subjects such as security connecting with SABSA, SOA, and Cloud subjects. Despite this progress, the next TOGAF will definitely address neither the identified enterprise challenges nor the need for business architecture, architecture value, communication and metrics, and EA governance.

Figure 1 Each Computing Era Requires A Different EA Method



NEW WAYS OF THINKING ARE EMERGING

Kevin Smith (the founder of PEAF, which is an EA bootstrap to allow easier implementation of other frameworks such as TOGAF) inventoried more than 70 EA frameworks in a wider set of more than 800 transformation frameworks.³ Among the new enterprise architecture methodologies, three scenarios seem prevalent that address, at least partly, the enterprises challenges described above:

- Redefining enterprise architecture foundations.
- Extending Lean and/or Agile methodologies practices to architecture.
- Integrating with other IT best practices such as COBIT and ITIL.

Redefining Enterprise Architecture Foundations

The usual layering of infrastructure, data, application, and business domains, each independently defined and evolved, does not work as EA evolves toward a business focus. Data and application are really IT-centric and tend to disappear or at least make it more difficult to establish clear boundaries. New methods are taking different approaches to improve how enterprises “think” and how they connect business change to enterprise architecture. Of particular interest are Proact, Tetradian, Zen Arch Architecture, and Business-Centered Enterprise Architecture (BCEA) (see Figure 2).⁴

Figure 2: Four Methodologies That Are Redefining Enterprise Architecture Foundations

Proact	<p>This is a framework that provides four architectural views of the enterprise (business, operational, systems, and technology). This EA methodology plans and organizes capabilities and requirements at each view, based on evolving business and opportunities. These are used to holistically plan and prioritize opportunities for large- and small-scale transformations. Proact is integrated with Troux Technologies as one of the toolings to deliver out of the box industry reference models and related tool support for the methodology.</p>	<p>Strength: It is one of the most finalized of the methodologies, in use by several large enterprises. Capabilities are the center — on each of the four BOST layers are capabilities that address corresponding requirements.</p>
Tetradian	<p>This method introduces some conceptual models to help deal with the new enterprise challenges. Tom Graves is an established enterprise architect thinker with more than 12 books published. Recognizing some changes at the societal level, he is leaning on four disruptive principles that he is applying to enterprise architecture practice. He does not claim to provide a complete methodology but different ways of thinking that can be particularly useful.</p>	<p>Strength: An EA philosophy replaces EA principles. The EA philosophy should reflect the vision, mission, and values that a CEO puts in place to drive a sustainable business. It provides a model for business service definition around value (proposition, creation, and governance) and how customers, suppliers, investors, and beneficiaries articulate the flow of exchanges between the stakeholders.</p>

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Source: Forrester Research, Inc.

Figure 2 Four Methodologies That Are Redefining Enterprise Architecture Foundations (Cont.)

Zen Art Architecture	This method represents the enterprise as a system of systems assembling an ecosystem, a sociosystem, a biosystem, and a technosystem. All these subsystems are connected to produce performance. Alan Hakimi, the developer of Zen Art Architecture, is a senior architect at Microsoft.	Strength: It recognizes that an enterprise participates in and is composed of multiple ecosystems. It addresses the balance of freedom for innovation and discipline for consistency and control. Weakness: Principles about entropy, balance, and what is making the Zen beauty, introduced at the beginning of the new method, do not translate into EA domains.
Business-Centered EA	This is a Forrester-developed method based on the business model as described by a business capability map. Capabilities are delivered via operational business services, described in a contract combining business and IT elements for current state and target reference state. It includes how to provide Agile governance using the method.	Strength: It is based on business model and business outcomes. It addresses pervasive change across planning, design, implementation, and optimization. Weakness: This is a new method with few customer references. It requires a philosophic shift in the purpose of EA, away from specification and control toward enabling business change.

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Source: Forrester Research, Inc.

Extending Lean And/Or Agile Methodologies Practices To Architecture

Adopting Agile and Lean methodologies for application development and extending to the planning and operations puts some pressure on enterprise architecture.⁵ Agile and Lean often clash with long-term standards-enforcement-based decisions from enterprise architects, often putting solution architects in a difficult position.

Recognizing that clash with architecture, some of the Agile methods practitioners have defined and extended the methods to increase compliance with architecture. Among these numerous extensions, we have chosen two frameworks available in the public domain, Scaled Agile Framework (SAFE) and Process Unifying Methods of Agility (PUMA) (see Figure 3).⁶ These frameworks are, at best, for solution/project architects and not for enterprise architects (even if they are touted for enterprise architects). The frameworks try to deal with agile business requirements but also with some longer-term requirements, such as the ones coming from EAs.

Figure 3: Two Methods Bring Elements Of EA To Agile And Lean Methods.

Scaled Agile Framework (SAFe)	This is a framework to scale Agile methodologies to the enterprise level. It connects Agile development practices to project portfolio management, deployment, and testing.	Strength: It connects to the architect role and works particularly well for systems architects and perhaps for enterprise architects — mainly through the standards elements.
PUMA	This is a framework extending Agile methodologies to make the enterprise business agile.	Strength: It is pragmatic, iterative, adaptive, and driven by experiments and change management. Weakness: PUMA is not a framework for EAs.

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Source: Forrester Research, Inc.

Assembling Other IT Best Practices That EA Method Can Benefit From

COBIT v5 and ITIL v3 are making a greater place for the enterprise architect's role in their processes, greatly contributing to EA role recognition in the IT group. Forrester regularly receives inquiries on issues arising from connecting architect practices to other practices such as project portfolio management, security (COSO or SABSA), operations (ITIL), sourcing and vendor management, legal, governance, risks, and compliance. These inquiries often reflect a misalignment of maturity between a firm's implementation of these other best practice frameworks — provoking misunderstanding and political battles around loss of power and resulting in loss of efficiency. PETF/PEFF integrates these and other best practices with EA (see Figure 4).⁷

Figure 4: One Approach Integrates COBIT, COSO, ITIL, And Other Best Practices With EA

PETF/PEFF	PEAF is an interesting complement to TOGAF that includes some missing parts for EA metrics; for example, EA communication. PEFF/PETF is a framework to define frameworks. PETF specifically focuses on enterprise transformation.	Strength: It connects EA to other IT management practices such as PPM, APM, ITIL, COBIT, COSO, and others. Weakness: It is still a work in progress — complex and theoretical.
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Source: Forrester Research, Inc.

RECOMMENDATIONS

EXTEND YOUR EXISTING EA METHODOLOGY TO DEAL WITH CHANGES

The focus of enterprise architecture methodology should evolve from quality-like practice (for example, as framed by the ISO 9000) emphasizing documents and content to “metaframeworks” that are targeting business outcomes and business change. The success of an EA program does not really depend on how close you are to a bible of content. EAs are judged on the results of projects or initiatives, the success of deliverables adoption, or the usefulness of the insights provided for decisions.

- **Enhance your current EA methodology with new elements.** There are good ideas to consider in all the methods described in this report. And there are other methodologies coming that will introduce useful concepts to address new enterprise challenges; for example, from design thinking. But none is complete or finished, adequate, or adapted to enterprise architecture for any one type of enterprise. Business-centered EA aims to solve these new enterprise challenges by introducing new concepts and seeking to find the right balance between concepts and pragmatism, simplicity and power.
 - **Frame the new EA methodology elements by articulating coherent architectural zones.** Forrester recommends architectural zoning as a best practice because one-size-fits-all does not work in the new normal of ecosystems, disruption, and change. For companies that are required to keep a stable back office with, for example, a front office requiring agility, we recommend zoning to keep TOGAF for stable zones. And start adopting these new EA methodologies, concepts, or complements for the zones requiring the most agility.
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SUPPLEMENTAL MATERIAL

Companies Interviewed For This Report

American Express

Proact Business Transformation

Leffingwell

Tetradian

Pragmatic EA

ENDNOTES

¹ Source: “Michelin Fleet Solutions: a model for sustainable economy,” Michelin (<http://www.michelinchallengebibendum.com/en/Michelin-s-involvement/Products-and-services/Michelin-Fleet-Solutions-a-model-for-sustainable-economy>).

² TOGAF v9 describes an EA methodology, an EA content framework, reference model, an architecture capability framework, and a controversial Enterprise Continuum. Forrester recommends TOGAF, though we advise EA teams to plan to adapt TOGAF's various models, its architecture development method (ADM), and its document templates to their organizational constraints and EA objectives. See the July 1, 2009, “[Use TOGAF 9 As Your Next EA Framework](#)” report.

³ Source: Pragmatic EF (<http://www.pragmaticcef.com/frameworks.htm>).

⁴ Proact Business Transformation is a North American boutique EA consulting company founded by Art Caston, co-author of *Paradigm Shift*, successful with large companies. Source: Proact Business Transformation (<http://www.proact-ea.com/html/compoveryview.html>). Source: Don Tapscott and Art Caston, *Paradigm Shift: The New Promise Of Information Technology*, McGraw-Hill, 1992.

Tom Graves is a longtime enterprise architect writer with more than a dozen books published over the past 15 years. Recognizing some changes at the societal level, he establishes four disruptive principles that he is applying to the enterprise architecture practice. Graves introduces some conceptual models to help deal with the new enterprise challenges and, more particularly, Enterprise Canvas, helping to specify business services. He does not claim to provide a complete methodology but rather different ways of thinking that can be particularly useful. Source: Tetradian (<http://www.tetradian.com>).

Alan Hakimi is a senior architect at Microsoft and a blogger. He presented at the Open Group conference Newport Beach 2013; the “Architectural Zen” presentation is available on the Slideshare website. He represents the enterprise as a system of systems assembling an econosystem, a sociosystem, a biosystem, and a technosystem. All these subsystems are connected to produce performance. Source: Alan Hakimi, “Architectural Zen,” Open Group Conference Newport Beach 2013, January 21, 2013 (<http://www.slideshare.net/alanhak/hakimi-open-group-zen-and-the-art-of-enterprise-architecture-newport-beach-2013>).

⁵ The modern world requires app delivery not only to be efficient but also to deliver faster and more flexibly. Lean is an effective approach to bringing this change, but realizing its promise requires delivery leaders to: 1) empower a strategic team focused on bringing change; 2) realign software delivery with the business; 3) introduce Agile processes that focus on people; and 4) instill the right architectures and tools to support flexible and responsive processes. Forrester’s Agile and Lean transformation playbook provides an end-to-end solution for creating or improving your Agile and Lean delivery capability. See the April 25, 2012, “[Make Software Delivery More Responsive To The Business](#)” report.

⁶ SAFE is a framework to scale Agile methodologies to the enterprise level. It is not specifically for enterprise architects, but it connects Agile development teams to project portfolio, deployment, and testing, the same direction than Forrester developed in its Agile and Lean playbook. In addition, SAFE connects to the architect role and practices particularly well for systems architects, and also to enterprise architects, mainly through the standards elements. Source: Scaled Agile Framework (<http://scaledagileframework.com/>).

Jean-Pierre Vickoff published several books around Agile methodologies, with the objective of achieving a better business agility that cannot happen by merely adopting Scrum or Xtrem programming. He developed PUMA, assembling several practices at the enterprise level. Source: Jean-Pierre Vickoff, “PUMA Essential,” PUMA (<http://www.entreprise-agile.com/en/Essential/PUMAessential.htm>).

- ⁷ Kevin Smith launched PEAF (an EA bootstrap to allow easier implementation of other frameworks like TOGAF) in 2008. It includes some missing parts for EA metrics; for example, EA communication. Smith is launching the Pragmatic Enterprise Family of Frameworks (PEFF) a family of metaframeworks to assemble different frameworks. Source: Pragmatic EF Ltd (<http://www.pragmaticef.com/>).

One of these is PETF (the T stands for transformation), which aims to connect all the different elements regarding enterprise transformation, such as project/program management, with all other frameworks, including EA frameworks. PETF is a metaframework that describes the basic structures that frameworks should contain. The metaframework explains the way to assemble the different components of your own framework while improving coherency between those. It describes the rules and quality that the resulting framework, adapted to your own objectives, should follow. Source: Pragmatic EF Ltd (<http://www.pragmaticet.com/>).

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