KPMG

Organizing for enterprise architecture success

Information technology services

— 712907

Contents

Executive summary

Architecture professionals often complain that their architecture functions are suboptimally positioned and unable to demonstrate the value their capabilities create. Moreover, many executives do not have a consistent view of what to expect from enterprise architecture (EA). The bottom line is that most organizations need a better model for their architecture functions, one that supports the strategic priorities of the organization and makes better use of EA's potential.

This paper introduces an assessment model to help EA stakeholders – including senior executives, business unit leaders, IT executives, and architecture professionals – build a common understanding about what EA can do for them, and most importantly, what they should do to better exploit EA's potential. Using the model, EA stakeholders can answer key questions:

— Does the EA function have the people, process and organization characteristics consistent with the organization's mandate?

— Is this function meeting the organization's expectations?

— Is the function positioned to succeed?

— Does the organization appropriately invest in the contributions with the highest value?

The model shows how architecture functions perform in terms of scope, complexity, strategic impact and effort versus their EA's potential, whereas the EA's potential is described using four contributing roles: methodology owners, domain experts, strategic advisors and transformation agents.

This paper is targeted at CIOs, leaders of EA as well as their application development, infrastructure and operations peers. It identifies a few common pitfalls, which pertain to establishing EA's mandate and contributions, and recommends a few actions that EA stakeholders need to take to improve the contributions of their architecture functions. These actions are intended to broaden the scope and increase the levels of specialization of EA contributions. They are expressed in terms of organizational, process, and people development requirements.
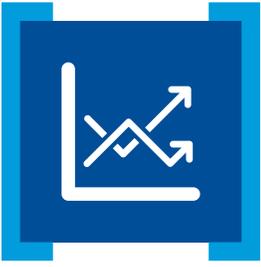
Smart EA investments contribute significant benefits

During the past 25 years, the EA field has evolved from some ideas, analogies, and models to a broad discipline for managing complex strategies. According to the Federation of Enterprise Architecture Professional Organizations (FEAPO), "Enterprise Architecture applies architecture principles and practices to guide organizations through the business, information, process, and technology changes necessary to execute their strategies."[1]

When well implemented, EA employs the architecture guiding principles and practices to articulate business and technology priorities and requirements, models, scenarios and road maps for change. EA also takes responsibility for planning change initiatives and providing guidance during their execution. Most often these initiatives concern the deployment of new and innovative capabilities, as well as the ongoing optimization of the architectures and technology portfolios supporting these capabilities.[2]

Research supported by numerous case studies clearly demonstrates that organizations that smartly use EA can achieve significant benefits.[3] The more focused their EA investments are, the more mature their architectures and portfolios, and the higher the benefits. Mature architectures are modular and use standardization and repeated and augmented composition to optimize the utilization of business and technology capabilities such as processes, applications, information, infrastructure platforms, expertise, relationships, and service contracts.

Potential benefits from investing in EA are:

— **Higher value from technology investments.** Organizations at lower levels of architecture maturity typically concentrate their EA efforts on cost cutting, through consolidation and rationalization efforts across business silos. At high levels of maturity, EA shifts its focus to streamlining cross-functional processes, provisioning convenient innovation platforms, and delivering portfolio optimizations.

— **Better IT governance and management processes.** As organizations increase their architecture maturity, EA's role shifts from guiding individual technology projects to developing and facilitating a holistic view of the organization's resources and processes, as well as the deployment of common processes for synchronizing and accelerating information access, reuse of resources, and ultimately better decision making.

— **Increased business agility.** Agility is about how to create resilient value chains, which can adapt quickly to change in technology, demand and products. In low levels of architecture maturity, EA sets up the foundation for agility as it drives standardizations and consolidations. At high levels of maturity, EA delivers the agility as it provides the organization's digitization road maps and platforms for innovation.

— **EA expertise as source of competitive advantage.** Organizations with high levels of architecture maturity are able turn their EA expertise into a powerful source of competitive advantage. Take, for example, Amazon. Using EA logic, the company was able to turn its internal IT capabilities into one of the most powerful and innovative suppliers of cloud services worldwide within a few years.

---

[1] http://feapo.org/wp-content/uploads/2013/11/Common-Perspectives-on-Enterprise- Architecture-v15.pdf

[2] KPMG – Optimizing the Application Portfolio

[3] See Ross, Weil & Robertson, Enterprise Architecture As Strategy

Stakeholders must agree on how to apply EA

Given EA's potential benefits, very few roles seem to be as well positioned to contribute value to organizations as architecture functions. Yet many architecture professionals, including CIOs who typically own and lead EA's development, complain that their architecture functions are suboptimally positioned and unable to demonstrate the value their capabilities create. KPMG also discovered during client engagements that many business executives do not have a consistent view of what to expect from EA, and struggle to align the contributions of the architecture functions within their own strategy development efforts.

Many organizations need a better model for their architecture functions, one that supports the strategic priorities of the organization and makes better use of EA's potential. To develop this model, EA stakeholders – including senior executives, business unit leaders, IT executives and architecture professionals – need to build common understanding about:

— What initiatives need EA?

— What is EA's potential?

— What should the organization do to better exploit EA's potential?

Identifying initiatives where EA is indispensable

An organization with a mature EA function will have a clear definition of EA capabilities and processes. With this foundation established, EA can focus on larger program/projects, alignment of business and IT for a 3-5 year plan, and a major transformation events.

— **Transformation architecture support.** Leverage EA methodology to support organizations encountering a transformational change, such as a merger or significant shift in a business model. These events require new alignment in all aspects of the organization. EA provides a structured approach for analyzing the current state, detailing the transformative changes needed, and integrating different phases of transformation.

— **Strategy alignment support.** Apply EA methodology to strategy development and execution. This means defining a strategic vision and leveraging EA to build and manage the current, transitional, and future states for the business and IT as they progress in achieving the strategic vision.

— **Architecture development and analysis.** Provide solution architecture and alignment for individual projects and programs focusing on specific areas of scope or expertise. Examples include process improvement, application architecture development, and security architecture.

Transformation architecture support

Strategy alignment support

Architecture development & analysis

Enterprise Architecture capability setup
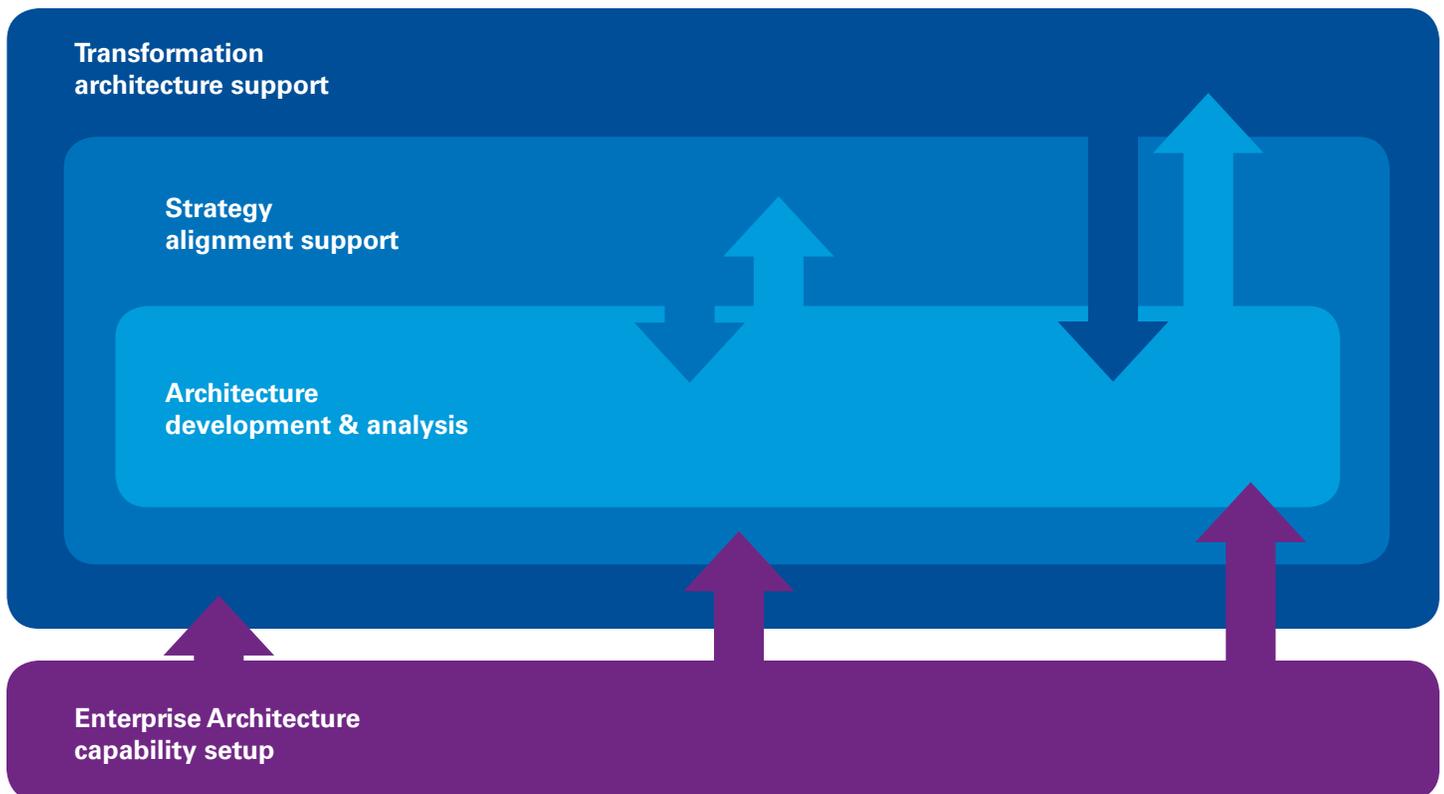
Understand EA's potential

The impact of EA on a project and organization depends on the scope of the EA's influence. Frameworks like the Federal Enterprise Architecture (FEA), Gartner, TOGAF or Zachman abundantly document EA's potential and provide a variety of taxonomies, processes and practices for exploring it[4]. For practical purposes, this paper uses a simple view focusing on EA's:

— **Scope of contribution.** Gartner articulates EA's scope as: "leading enterprise responses to disruptive forces by identifying and analyzing the execution of change toward desired business vision and outcomes"; providing "signature-ready recommendations for adjusting policies and projects to achieve target business outcomes that capitalize on relevant business disruptions"; and steering "decision making toward the evolution of the future state architecture"[5]. Not many architecture functions are positioned to deliver this breath of contributions. Some organizations limit EA's contributions to enabling capabilities with little opportunity to demonstrate value while other organizations allow EA to have a transformational scope. Examples of transformational scope include contributions such as leading the due diligence prior to an acquisition and technical integration after a merger.

— **Complexity of contribution.** EA contributions vary in complexity based on the analytical sophistication associated with EA's work. For example, at a low level of complexity, EA functions in a support role defining methodologies and standards. At a high level of complexity, the EA function provides deep technical and functional expertise. Often organizations with highly complex EA contributions demonstrate expertise in all EA domains and have a strong understanding of the business practices and processes that an enterprise's technical architecture must support.

---

[4] http://msdn.microsoft.com/en-us/library/bb466232.aspx

[5] http://www.gartner.com/it-glossary/enterprise-architecture-ea/

Identify the pitfalls that most EA functions face

When addressing the question "What should an organization do to better exploit EA's potential?" stakeholders need to start with an assessment of the organization's effectiveness. Given the EA mandate and expectations, how do the EA function's contributions stack up? Is the function underperforming, meeting, or exceeding expectations? Does it have the right processes, people, and organizational structure to succeed? Experience shows that the common pitfalls, which pertain to establishing EA's mandate and contributions directly relate to poor governance practices. They include[6]:

— **Unclear technology agenda.** Despite acknowledging the importance of technology, many executive teams still do not have clearly articulated and agreed-upon technology agendas. Such agendas, which senior executives need to consistently communicate across the organization, must be based on deep knowledge of the organization's business needs, capabilities and architecture maturity. With unclear technology agendas, architecture functions will have a hard time building EA discipline, prioritizing and quantifying change investments, standardizing and consolidating processes and resources, and finding the right balance between new and existing, and distributed and centralized solutions.

— **Lack of recognized mandate and authority.** Architecture functions need the mandate and authority to develop and manage the architectures and associated methodologies, which best support the organization's technology agenda. Moreover, the organization as a whole, from executives to employees, across business units and IT functions, must accept this mandate and authority. Senior executives need to actively sponsor, communicate and support EA's mandate, and also enforce it when necessary. Without this mandate and authority, architecture teams risk trying to become "everything to everybody" – reactively consuming most of their resources and skills on fixing issues and other operational tasks at the expense of leading change through strategy development.

— **Lack of people, process and organization coherence.** Ideally an EA organization will be "tuned" to provide the contributions that are most valuable to the enterprise. EA groups can be methodology owners, domain experts, strategic advisors, transformation agents or

---

[6] See Thomas Ertl, SOA Governance

combinations of these things. These contributions have very different implications for people, process and organization, however. For example, an EA organization which has the primary contribution of being a domain expert needs to hire technologists, invest in the ongoing technical development of its team members, and provide processes for the development and governance of technical standards. An EA organization focused on the contribution of a "strategic advisor" may hire generalists, focus team member development on consultative problem solving, and provide processes for project delivery. Oftentimes, EA organizations do not distinguish between these contributions or their implications. This results in a lack of organizational coherence that confuses EA's "customers" and challenges EA's ability to be effective.

— **Ineffective allocation of resources.** The allocation of resources must be consistent with the impact of EA's contributions. In general, organizations should allocate resources to those contributions that have the most tangible, direct impact. Are most of the resources being invested in the contributions with the highest value?

— **Over-bureaucratization and misguided documentation and tools.** Sometimes EA spends significant efforts creating highly structured and detailed methodologies, processes, tools and documentation and views this as its contribution and value when in reality these are only the means, not the ends. When attempting to enforce these kinds of deliverables as "standards policy", architecture functions run the risk of compromising EA's popularity and authority forever, quickly losing stakeholders' acceptance and support from senior management.
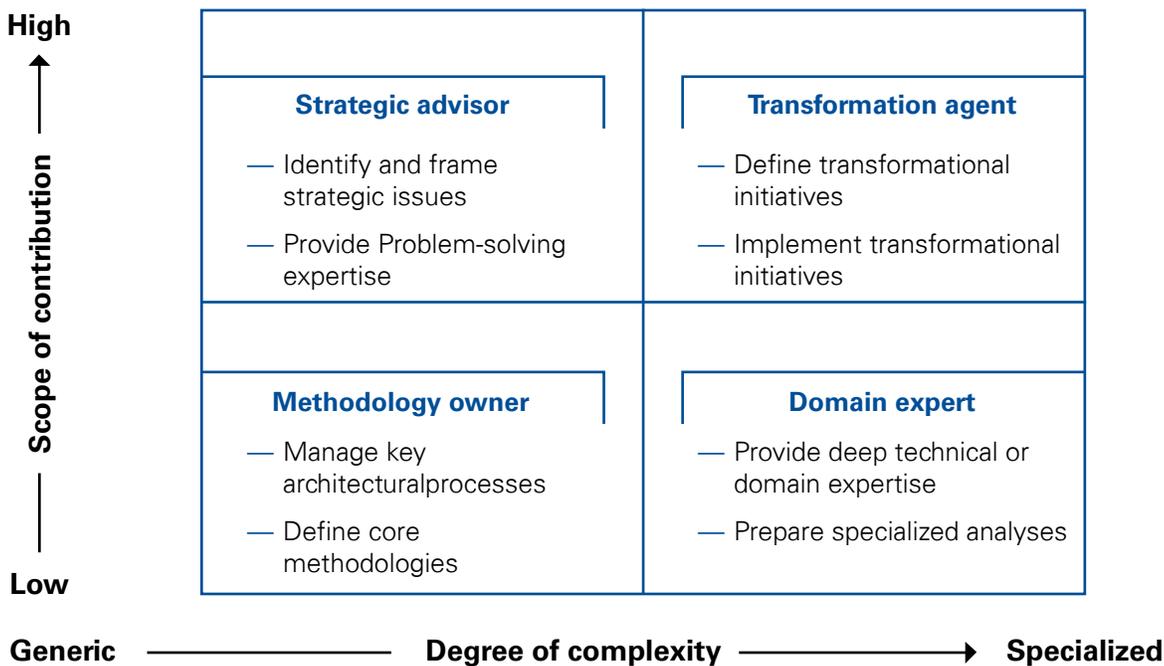
Assess the potential of EA functions

To increase EA's demonstrable value, KPMG recommends using an assessment model to determine how current architecture functions are positioned and performing in terms of their impact and effort versus their potential. The model helps EA stakeholders identify improvement actions using a two-by-two matrix (see Figure 1) to:

— **Increase the complexity of EA's contributions from "generic" to "specialized".** Generic contributions are limited to delivering methodological support or broad consultative recommendations, while specialized contributions are about providing deep insights into how processes and the underlying technologies work and need improvement.

— **Increase the scope of EA's contributions from "low" to "high".** The difference between "low" and "high" scope is given by the breadth of contribution and degree of ownership of the contribution's outcome. For example, providing methodology support is "low scope" while the deployment of cloud computing across the organization is "high scope" because it involves a broad contribution and significant ownership role.

Figure 1: EA Assessment matrix

	Generic → Degree of complexity → Specialized	
High	**Strategic advisor** — Identify and frame strategic issues — Provide Problem-solving expertise	**Transformation agent** — Define transformational initiatives — Implement transformational initiatives
Low	**Methodology owner** — Manage key architecturalprocesses — Define core methodologies	**Domain expert** — Provide deep technical or domain expertise — Prepare specialized analyses

Scope of contribution (vertical axis: Low to High)

Degree of complexity (horizontal axis: Generic to Specialized)

Source: Adapted from "The Corporate Strategy Function: Improving Its Value And Effectiveness", Brunsman, DeVore and Houstan, *Journal of Business Strategy,* Vol. 32 No. 5.

The two-by-two matrix describes four basic roles that EA organizations can adopt based on their contribution:

— **Methodology owners** take responsibility for the governance processes as well as development and adoption of the EA methodology, which is typically based on reference frameworks, like FEA, Gartner, TOGAF, or Zachman. The Methodology Owner role is a rather generic, low complexity contribution with respect to the development and execution of strategy.

— **Domain experts** provide deep expertise in one or several architecture domains including business process management, service oriented architecture or cloud computing. Many of these highly complex contributions cover narrow pieces of the organization's strategy.

— **Strategic advisors** are architecture practitioners that extend their contributions beyond that of "methodology owners" by actively identifying and solving problems the organization faces. Addressing these problems typically requires methodological skills and results in recommendations for a significant course of action.

— **Transformation agents** have authority and insights into organizational specifics while commanding the level of accountability required to drive the implementation of transformational solutions from target identification to operational integration.

Assessing the role of the architecture function with the assessment matrix involves four steps:

— **Identify EA's contributions.** This step is typically executed through interviews with the EA stakeholders. The outcome is a list of activities that need to be articulated in language that makes sense to all stakeholders.

— **Assess the impact of each EA contributions.** Impact is the tangible business value of the contribution, which is evaluated in terms of scope and complexity. For example "Standards Development", though important, is low-scope and generic.

— **Assess the level of effort associated with each contribution.** Interviews with the EA stakeholders, in particular with a practitioners staff will provide this information. The outcome is the percentage of time the function spends on each of its contributions.

— **Plot the contributions on the matrix.** The individual contributions of the architecture function are mapped as bubbles onto the matrix. The size of the bubble is used to indicate the level of effort the function devotes to the contribution.
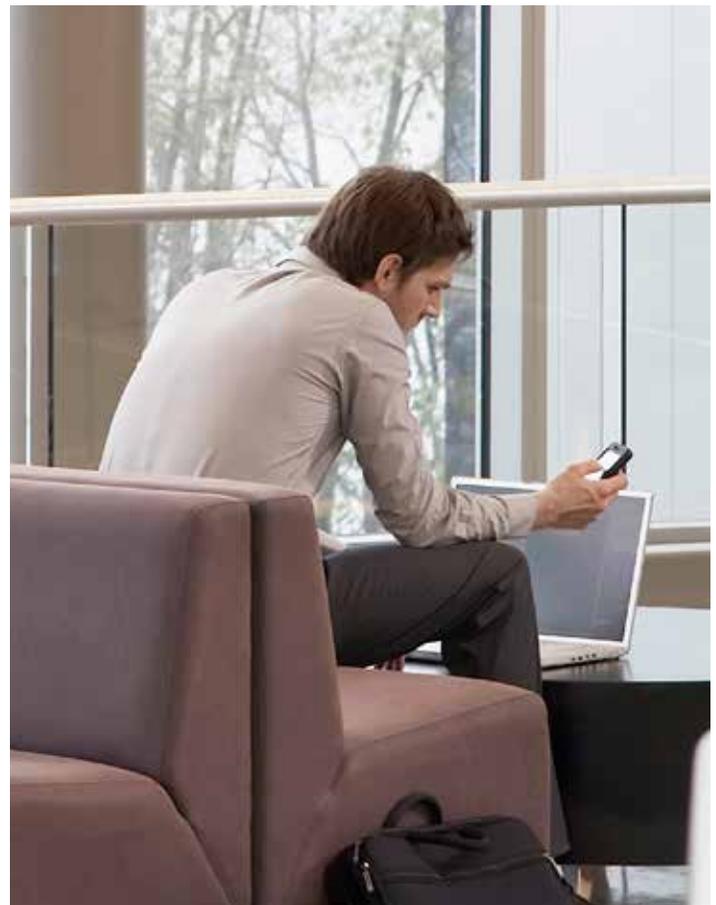
The case study of a retail organization

Emerging circumstances at a large retailer highlight the growing need for EA contributions. The past few years have witnessed a rapid shift in how consumers purchase goods from shopping at physical stores to ordering online driven by the success of Amazon. In order to compete and maintain or grow market share, retailers have had to augment their physical locations with an online presence. For this retailer, successfully executing its business-critical multichannel strategy strongly depended on its ability to quickly deploy and integrate Web- services with existing applications. This business imperative and the consolidation of ERP and other enterprise applications and data demanded enterprise governance. Moreover, to keep pace with recent technological developments, the organization is shifting towards a cloud-based model and looking at EA as a critical capability for bringing technology and operational considerations into solution design, verify the relevance of technology innovation, eliminate unnecessary duplication and improve conformance with standards.

However, existing circumstances made these EA contributions very difficult to provide. The organization's culture is one of relatively autonomic organizational silos and low enterprise maturity. The retailer's focus on line of business project funding makes investments in enterprise solutions more difficult to justify. In the past, technology standards were viewed as optional and, as a result, contributions by EA and the associated benefits were unrealized. It was clear that the retailer needed to reposition its architecture capabilities. Seeking outside guidance, the VP of EA partnered with KPMG to perform an assessment of the existing architecture function and provide recommendations for improvement.

The retailer and KPMG identified key stakeholders from across the retailer's business organization and IT, and interviewed them regarding the expectations of EA and the value provided by its constituent teams, including current contributions, focus, levels of performance, challenges and opportunities. In addition, key activities within the architecture function were analyzed to understand where the practitioners spend time and effort and how each activity aligned with complexity and strategy.

Figure 2 illustrates the summary of the findings. EA's activities are generally split between the Methodology Owners and Strategic Advisor quadrants. Based on these findings, KPMG and the retailer developed an action plan centered on the retailer's EA governance and management processes, organization structure, and people development. When devising the plan the engagement team took into account the organization's existing low level of architecture maturity. The firm was extremely cost focused, yet no single organization really "owned" total cost of ownership (TCO). The EA stakeholders decided to focus on improving the ability of the architecture function to act as a strategic advisor initially by harnessing EA's perspective, skills, and processes to help the rest of the organization drive down TCO. EA's contribution would have a direct impact that could be quantitatively measured by the scope of effort (the number of business units with active TCO reduction initiatives) and the value of the cost savings realized.

Figure 2 case study: Assessing the EA contributions at retailer
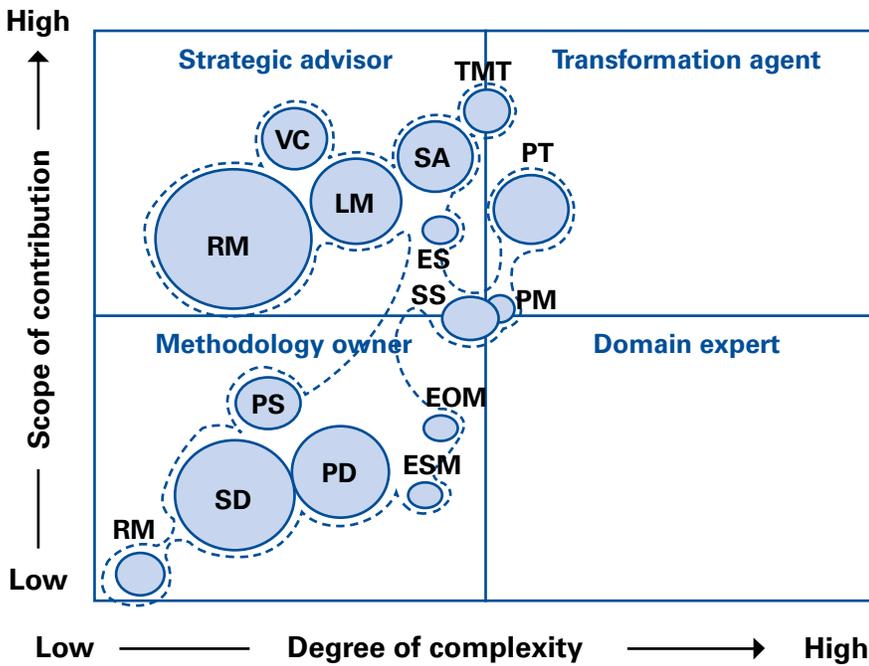
Legend	
Bubble = Activity	
Size of bubble = Percent of EA department effort	
AG = Architectural governance processes	PM = Project management
EOM = EA operations model	PT = Prototyping
ESM = EA services model	RM = Road mapping
ES = EA strategy	SD = Standards development
LM = Life cycle management	SA = Strategy analysis
PD = Policy development	SS = Solution selection
PS = Process support	TMT = Technology market/trends
	VC = Vendor collaboration

Source: KPMG

Optimize EA's impact in terms of scope and specialization

The EA model introduced in the previous section helps stakeholders establish and improve EA's mandate and contributions with help from a few questions:

— Is this the architecture function that EA stakeholders intend to have?

— Is this function consistent with the organization's expectations?

— Which are the most critical contributions and which are outside the mandate?

— Is the function positioned to succeed?

— Does the organization appropriately invest in the contributions with the highest value?

The matrix also suggests that the strategic impact of the architecture function increases as the complexity of contributions moves from generic to specialized and the scope from low to high. Increasing EA's impact requires stakeholders to bring a significant commitment to address the pitfalls, which pertain to establishing EA's mandate and contributions. The actions to consider include a few basic governance and management practices focusing on the organization structure, process and people competencies that limit the ability of architecture functions to have higher impact (see Figure 3).

Figure 3: Actions for improving the EA contributions of architecture functions

Actions	Increase the level of specialization	Increase the scope
Organization and Performance	Address the organization needs of a specialist community	Establish position as a trusted advisor.
Processes	Focus on architecture maturity and differentiation	Develop processes that are common to consultancies.
People development	Enhance EA's specialization through focused HR actions	Enhance problem-solving skills

Increase the level of specialization

Moving to the right of the framework means increasing the complexity of the contributions of the architecture function by expanding its level of specialization. The implications of this choice for organization, processes and people are:

— **Address the organizational needs of a specialist community.** First, the EA organization needs to be constructed in a way that supports a function with very distinct capabilities to make contributions in different areas, including business, applications, technical and information domains and at different levels of detail, from developing business capability maps to establishing technical standards. Second, funding and accountability models need to be established for specific outcomes. Last, but not least, the performance measures need to be aggregated at the level of the architecture function and tied to the potential benefits expected from EA: increased business value from investments, more agility and effective decision making, and differentiation.

— **Focus on architecture maturity and differentiation.** EA processes naturally increase their levels of specialization as the organization increases its architecture maturity. Organizations with mature architecture use customized planning, budgeting, portfolio optimization and risk management practices to make faster and better architecture decisions, as well as a few sophisticated development and operations processes to improve their business agility and develop services, products and capabilities for sustainable competitive advantage..

— **Enhance EA's specialization through focused HR actions.** Providing architecture professionals with a satisfactory career path is essential. Related actions include attracting talent, developing practitioners' architecture skills, and providing support and recognition for the individuals' and teams' accomplishments in specialized areas, for example web architectures or business analytics. Experience shows that organizations using EA as a strategic differentiator,

develop a first-class architecture curricula, start with the recruitment of top talent and continue with their personalized development, emphasizing and rewarding architecture skill- building and credentialing.

Broaden the scope of contribution

Moving up in the framework means increasing the scope of the organization's contributions. This shift has a few additional implications for the organization model, process, and people:

— **Establish strong presence at the executive level.** When the balance of contributions shift from providing methodological support to delivering specialized expertise and strategic recommendations for change, the visibility of the architecture function across the organization needs to increase significantly. Architecture functions adopting the role of strategic advisors need direct reporting lines to senior executives, such as the CEO, COO, or CIO, and a clear mandate to solve challenging, strategic problems.

— **Develop processes that are common to consultancies.** Architecture functions evolving into strategic advisors and transformation agents roles need to deploy working processes, similar to those of consultancies to manage client relationships, deliver projects on time and according to pre- agreed service levels, manage the "pipeline" of work, and optimize the utilization of the team.

— **Enhance leadership skills.** The development of the architecture function into the strategic advisor role requires the recruitment of practitioners with deep knowledge of the industry, as well as the organization's processes, structures, culture, and technology needs. Practitioners should ideally have a consulting background and a high level of seniority. Additional HR activities supporting the implementation of this role are: offering formal training focusing on leadership and problem solving, job rotation programs, and career growth opportunities for high-potential employees joining the architecture function.

CIO leaders drive EA's development

Increasing EA's impact has clear strategic benefits: more value from technology investments, better decision-making processes, higher business agility, more mature architectures, and better capabilities able to meet the organization's unique needs. Harvesting these benefits, though, is challenging as it requires focus on the development of a few organizational characteristics.

CIOs and VPs of EA are predestined leaders to bring this focus. Moreover, these executives are inherently positioned to lead technology-driven transformation initiatives at the enterprise level and across multiple lines of business. Additionally, they need the EA capabilities and more architecture maturity as a strategic prerequisite for leading technology-driven change initiatives to success.

To increase the impact of EA, CIOs need to:

1. Assess the contributions made by architecture function versus EA's potential in terms of scope and complexity and decide on the contribution that makes most sense for their organization

2. Evaluate and adjust the key factors related to organization's readiness, performance, processes and people that determine the feasibility of the contributions

3. Expand the existing contributions and deploy new ones paying attention to their complexity and scope to maximize their strategic benefits

Contact us

Barry Brunsman
KPMG LLP, CIO Advisory
Principal
T: +1 612-232-0072
E: bbrunsman@kpmg.com

Matt Bishop
KPMG LLP, CIO Advisory
Principal
T: +1 972-679-4091
E: mbishop@kpmg.com

Marc Snyder
KPMG LLP, CIO Advisory
Managing Director
T: +1 978-807-0522
E: msnyder@kpmg.com

http://www.kpmg.com/us/IT

Some or all of the services described herein may not be permissible for KPMG audit clients and their affiliates.

kpmg.com/socialmedia