

Is Your Enterprise Architecture All It Can Be?

Lessons From The Front-Line

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Is Your Enterprise Architecture (EA) All It Could Be?

The rapidly changing environment that all enterprises must operate in today creates a situation where enterprise architecture is an imperative to success. The paradox is that, the faster things change, and the harder it is to plan, the more necessary it is to embrace long-term tools like enterprise architecture. Enterprise Architecture can provide structure and direction to the decision making process. The key is to make enterprise architecture relevant to the near-term. This requires that enterprise architectures provide near-term actionable results. It also requires that they be effectively integrated with portfolio management and capital planning.

Given this “high bar” for success, most enterprise architecture programs to-date have not fully lived up to expectations. There are the obvious organizational change issues that limit the potential effectiveness of enterprise architectures, as politics will always trump architecture. However, there are also practices within the enterprise architecture community that result in “down-in-the-weeds” architectures that are of little use to the executive decision making process. Unfortunately, these EAs invariably provide tombs of information that is difficult to navigate and use in any effective fashion. Fortunately, there is a ground-swell of support for value chain based business process modeling and service based architecture techniques within the Federal EA community. Those who adopt these techniques, and implement them correctly, will provide for their clients aligned, actionable and agile EAs.

This white paper presents ways in which the above mentioned techniques, pioneered and proven by “big five” consultant firms in the early nineteen-nineties, can be adopted in the Federal EA space, and how some of the “pitfalls” of current practices can be avoided. It is based on our combined experience in introducing these techniques into the market place, and lessons learned in the process.

Lesson 1: The Big Picture is More Important than the Whole Story

Most enterprise architecture methods and frameworks currently in-vogue in the Federal EA market space rely heavily on segmentation of enterprise “components” to deal with the complexity of the enterprise and organize the work effort. The widely used Zachman Framework segments an EA into a six by six matrix of cells, each describing a particular aspect and view of the enterprise. While these cells can be useful in “thinking” about an enterprise architecture, excessive focus on filling out the cells, rather than properly aligning the people, process and technology aspects of the enterprise to business drivers, typically results in a lot of detail and very little insight. What is missing from EA frameworks, like the Zachman Framework, is a focus on an integrated view of the key components of the enterprise, and a way to align them with customer and business needs. What is needed is a common view of the primary resources of any enterprise: people, process and technology; a view that models how they

integrate to provide the primary drivers behind enterprise success. It's the combined workings of people, process and technology that provide value to the enterprise.

Separating the three into their own independent models, prior to modeling them in an integrated whole, is like architecting a building with each of the major disciplines, e.g., plumbing, heating, electric and construction going off on their own specifying their individual pieces of the project without the benefit of an overall blueprint. Not only is the "big-picture" missing, but subsequent useful relationships within "cells" tend to get lost.

Fortunately using a combination of well-tested techniques provides a mechanism for achieving an aligned, integrated and agile enterprise. The combination of a service based value chain modeling, decomposition based on business process modeling, and component based technology enablement provide a mechanism for achieving these results. As depicted in the model below, (Figure 1.) these techniques provide mechanisms for modeling the key value components of the enterprise (people, process and technology), while at the same time addressing the infrastructure cost components.

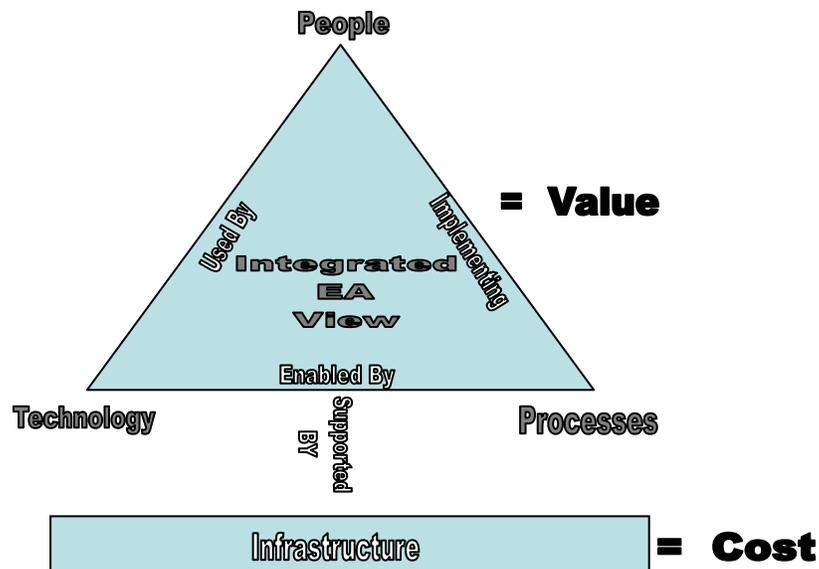


Figure 1.

Lesson 2: Don't Reinforce Functional Stovepipes by Mimicking the Legacy Functional Hierarchy

A major objective of most enterprise architectures is to "tear down the functional stovepipes" that we in the industry have been threatening to tear down for the last twenty years. The irony is that, by segmenting enterprise architecture efforts by functional area, a common practice, we tend to reinforce the stovepipes and make them stronger. Functional stovepipes exist because money in an enterprise typically flows through functional areas. Human nature, being what it is, will justify using that money to optimize their own functional areas; possibly to the detriment of the overall enterprise. Having the same money pay for and control the enterprise architecture will inevitably lead to the same results.

Organize the Enterprise Architecture by Value Chain and Supporting Cross-cutting Processes

The answer to solving this problem is to first align the enterprise towards providing customer value using value chain analysis techniques (See next section), and then flush out the enterprise architecture based on crosscutting process areas that align to the value chain.

This approach was implemented at a major Federal Agency. The Agency identified the order-to-payment process as the first segment of the enterprise architecture. This segment was a major pain point across the many services provided by the Agency. Each service had its own order-to-payment process. Using value chain analysis and segmenting the EA by process, rather than function, resulted in significant improvements to the Agency's order-to-payment process. It was quickly realized that the agency had two variations on order-to-payment, rather than the many that wide-variety of practices in place at the time. Additionally, the Agency embraced the idea of separating the A/P and A/R process from the settlement process, which is a best practice in the e-commerce world that it was beginning to operate. (See Figure 2.)

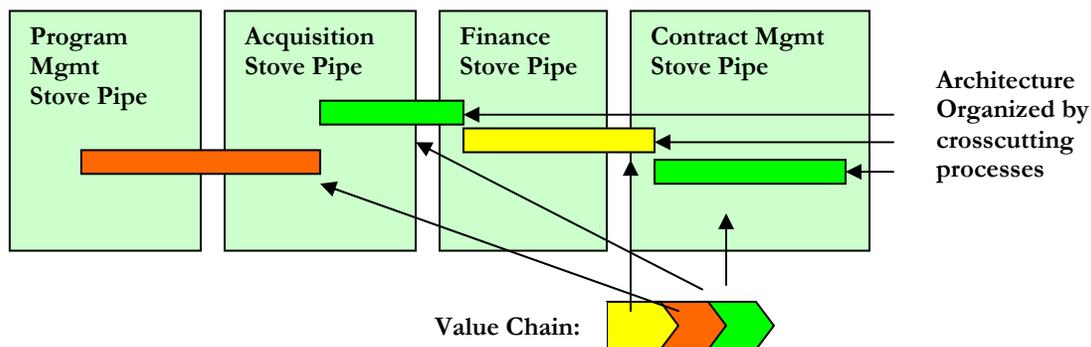


Figure 2.

Lesson 3: Business Processes Based Architectures are the Key to Realizing Business Transformation and Alignment

To truly discover opportunities for improved business alignment and transformation enterprise architecture needs to be based on business process decomposition rather than functional decomposition. Functional decompositions typically categorize or group activities by specialization. Using our previous order-to-payment example: function based decomposition would have segmented that process into its various stovepipes. There would be the finance, acquisition, inventory management and order processing stovepipes, and perhaps more. Somewhere spread across those stovepipes would be an order-to-payment process. Each stovepipe team would have naturally put their own particular "twist" on their segment of the process, and the chances of an integrated process reflecting an enterprise view would be pure happenstance. The net result is that there would have to be an awful lot of rework by an integration team in order to achieve integration, and the opportunity for transformation has been lost due to the balkanized view of the process. Furthermore, there is no objective reason to decompose by function, other than it was a technique adapted from information engineering that many practitioners are familiar with.

If the goal of the EA is business transformation and improved business alignment, then more powerful analytic tools are required. Common approaches that have been proven in private industry include:

1. Using Michael Porter's value chain analysis approach to drive and organize the EA.
2. Decompose based on processes not functions.
3. Define process areas in terms of the service they offer, and desired performance characteristics, and use those definitions as the design parameters for business processes.
4. Incorporate roles and technology enablement into the business process models.

A value chain organized EA cuts across the core processes of an enterprise as defined by the enterprise's customers, and provides both "middle-up" alignment to the Mission, Goals and Objectives of the organization; and "middle down" alignment of supporting processes. (See Figure 3.)

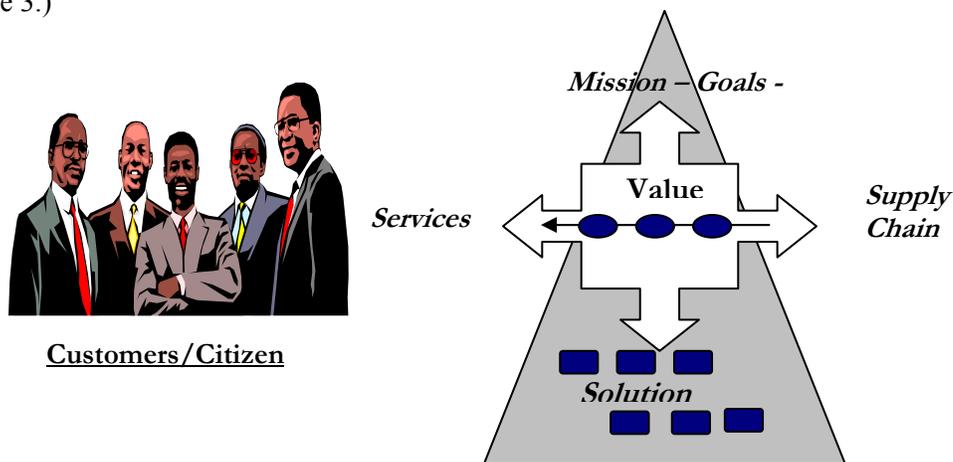


Figure 3.

Lesson 4: Develop a Performance Based Enterprise Architecture

A performance based EA is one where a quantifiable baseline and target is defined for each of the major business areas and their supporting infrastructure. Those performance targets are then also applied to any program efforts designed to support the achievement of the business targets. Once again, basing business areas on processes, verses functions provides for a better outcome.

Business processes are by their definition a set of activities that result in a definitive outcome. The outcome of a process is a measurable and can be tied to enterprise performance goals. This is difficult to do with a function, since functions typically do not provide a single defined outcome, but support multiple process areas that do. While you can attribute cost to both functions and processes, it is much easier to attribute defensible performance targets to a process.

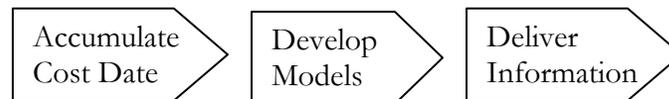
Lesson 5: The Business Process and its Technology Enablers are One and the Same

Technology is such a pervasive part of the business process that modeling one without the other is almost futile in today's environment. There are strong reasons why you would want to model business processes independent of the technology, e.g., desire to focus on the business and limit the potential of technology becoming the driver of the process, and the desire to keep technology options open until the business needs are clearly understood and articulate. These are noble

goals, but difficult to achieve if you are going to model your enterprise at a reasonable level. To illustrate, we provide two examples of why a technology neutral approach is, at best, extremely difficult.

Example 1. Trying to be technology agnostic

On a recent project, a functional team was asked to model the processes for accumulating and modeling enterprise costs (Cost Management). The direction was that they would model the processes from a logical perspective, focusing on “what needed to be done,” rather than on “how to do it.” The architecture was to model the business processes, and remain technology neutral. The resulting high-level model was:



A rudimentary analysis of the process model by any technologist would clearly lead to the conclusion that the three processes modeled would almost certainly be automated using some data extraction and data-warehousing tool. The irony of the effort is that in an attempt not to model technology, the only thing that truly did get modeled was the automated processes. The actual activities of the people that would utilize the automated tool were not even represented in the model.

Example 2. Excessive Abstracting of Roles

On another EA, a modeling methodology was deployed that “abstracted-out” roles in a collaboration model so as to whether or not a role is automated would not be addressed in the model. This is similar to UML use cases where actors can be systems or people. The problem with this approach is that collaboration between a human and a system, a human and a human, and a system and a system will all more than likely differ, even though the same objectives are being pursued. Let’s look at an automated and manual Procure Food process

1. Manual Procure Food Process from a Grocery Store:



2. Automated Procure Food from a Vending Machine:



Lesson 6: The EA Must be Specific to the Enterprise and Resonate to its Particular Circumstances

The EA must solve real-world business problems

An EA that truly aligns to the business needs of an enterprise will be based on a comprehensive understanding of the business and its particular strengths, weaknesses and opportunities. This requires that some level of current state analysis be performed, if only to establish a performance baseline and identify performance gaps and improvement opportunities. Without an analysis of the business, the only option is to base the future state architecture on best practices and/or a set of perceived targets; neither of which can approximate the legitimacy of an effective analysis of the existing business's shortcomings and opportunities. This is not to say that exhaustive documentation of the current state is required, it is to say that the team needs to be populated with people who have a solid understanding of the enterprise, and that the team needs to establish both a performance baseline and targets prior to defining the future state.

Beware of the “world class” trap

Absent an effective baseline understanding of the current state and near-term improvement opportunities, many EA programs fall back on being “world class” as a target for the future state architecture. In our opinion world class, in itself, is not a valid target. To begin with, being world class usually costs money and a large amount of management commitment. Unless there is a comparable return in value to the customer, then it may not be worth the additional cost. Secondly, to provide a rich enough palate of targets, world class based EAs usually pick from multiple sources. The net result is an impossible set of targets that no one has come close to approximate. Finally, without an understanding of the current state baseline, there isn't the required perspective to determine even if a world-class capability could be achieved across the enterprise. One part of the enterprise value chain may be the equivalent of a one hundred dollar set of speakers, while another, the equivalent of a ten-thousand dollar stereo amplifier.

Lesson 7: Make an immediate impact

An architecture that does not provide substantial impact until two to three years out will quickly become “shelf-ware.” The EA must have immediate significant impact on the organization within the first six-months of its completion. Additionally, the EA process needs to be “baked in” to the overall management and planning structure as a continuous improvement program that invites participation across the enterprise, even if on an ad hoc basis. The EA should become a tool for stakeholders, regardless of where they sit in the corporate hierarchy, to propose improvements. While many of the well thought out and performance justified objectives of the EA may be quickly made obsolete by changes in the market place or technology; the discipline and structure provided by a well implemented EA and portfolio management program, backed into the governance structure, will provide an excellent ROI.

Conclusion

Most Enterprise Architectures have yet to deliver measurable results; however, given the body of knowledge obtained in the Federal Government since the passing of Clinger – Cohen, it is time to apply lessons learned, and improve on outcomes. An effective EA starts at the planning stage

with the creation of a vision for results-oriented business-driven services based architecture. Use the vision as the foundation that links your business needs to your information technology investment portfolio. Remember that EA is not self-sustaining; garner support from your executives by focusing on their “pain points” not yours. Use “pain points” to develop solutions to prove the ROI of EA.

Stay away from pure top-down approaches that tend to treat all aspects of the enterprise with equal importance and a similar level of introspection. This approach tends to produce reams of documentation with little business context. Integrate your EA into your ongoing management process and apply it across the enterprise as a continuous improvement program, rather than a periodic “clean-out-the-attic” event.

Enterprise Architecture requires a serious thoughtful commitment. It is a long road to build buy-in and credibility. Stay away from the mile-wide inch-deep architectures that are of little value to your stakeholders. Rather, focus on emerging opportunities that create value, even if you wind-up going a mile-deep and an inch-wide

As authors of this white paper, we believe that using the lessons-learned proffered would result in significantly improved outcomes. However, we invite a dialogue with all who are dedicated to advancing the field of business process management and enterprise architecture. Please feel free to respond through the provided e mails.

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