Top Ten Indicators of Enterprise Architecture (EA) Maturity – 2016 Results

Abstract

The *Top Ten Indicators of Enterprise Architecture Maturity* is a survey instrument developed by the EPRI Enterprise Architecture Interest Group[1] to provide a means to do a "back of the envelope" maturity assessment, and then use that assessment to benchmark against the average and range of responses for all participants. In 2016 data from 17 utilities was used to compile the results. As in 2015, the findings from this survey inform into enterprise architecture collaboration activities to determine how to best help utility enterprise architecture teams make improvements to their practices.

A Faster Assessment of Maturity

Benchmarking against your industry peers within a few moments rather than spending days sitting in a conference room? Yes. This is what the *Top Ten Indicators of Enterprise Architecture Maturity* can accomplish. Instead of coming from a viewpoint that a deep dive needs to be performed to analyze an enterprise architecture strengths or weaknesses, this survey comes from the perspective that enterprise architects inherently know what these are; they merely need to take a few moments to assess them. The real work begins when determining what should be done about the results.

The genesis of this approach was the result of a review by the EPRI Enterprise Architecture Interest Group (EAIG), the technical transfer outreach of the EPRI Enterprise Architecture and Integration research program (P161E), in 2015 of the various enterprise architecture maturity models that are available. Unlike some areas where an industry or professions has coalesced around a specific maturity model, such as the Ca-

pability Maturity Model for process maturity, or the Smart Grid Maturity Model for the utility industry, over a dozen maturity models can be used to evaluate the maturity of an enterprise architecture practice. Some of these models were robust and mature, others less so, but it was also clear that outside of agreeing that the maturity level paradigm original developed by the Software Engineering Institute be used, there was less agreement on the content.

Indicators of Maturity: Value to the Organization

Because of this finding, the EAIG then had a conversation about the types of indicators that reflect whether an enterprise architecture practice has been successful in an organization. In the utility industry, enterprise architecture usually evolves out of the information technology (IT) area and tends to focus on IT assets and developing architecture. It is not uncommon to see such a practice labeled "enterprise architecture" when in fact, it is only IT architecture. If a nascent enterprise architecture practice has some success this is usually the result of begin-

[1] Top Ten Indicators of Enterprise Architecture (EA) Maturity, Electric Power Research Institute, Palo Alto, CA. Product ID: 3002007400, http://www.epri.com/abstracts/Pages/ProductAbstract.aspx?ProductId=000000003002007400

ning to involve business leaders, developing business as well as IT architectures, and assisting the organization with business capability assessment. In short, as the enterprise architecture practice demonstrates value, the team grows, it reports higher in the organization, is consulted by peers throughout the organization, and there are fewer conversations about what enterprise architecture *does* and more conversations about how enterprise architecture can help a given project be successful.

It was this conversation that led the EAIG to create a "top ten" list. The idea being, if one could limit the indicators to a set list, and if someone did not like an indicator, they had to suggest which existing indicator had less value. Then, through multiple sessions with ESIG members and visits with utilities, the attributes (answer to any given indicator) were refined to provide clarity around the resulting indicator of maturity.

The result was a survey instrument that takes a member of the enterprise architecture team less than ten minutes to complete.

The results can then be benchmarked against other utilities. The initial maturity survey was conducted in Q4, 2015, with 15 utilities participating, and again at the close of 2016 with data from 17 utilities represented. A dashboard for each utility was then created showing the range of results, and for a given utility, how far above or below the resulting average.

An example for a generic "XYZ" utility is shown below in Figure 1, using the results from the 2016 averages.

Reading the Chart

Gray line – Range of responses

Gold bars – Starting at the average, the length of the bar represent the distance *below* the average

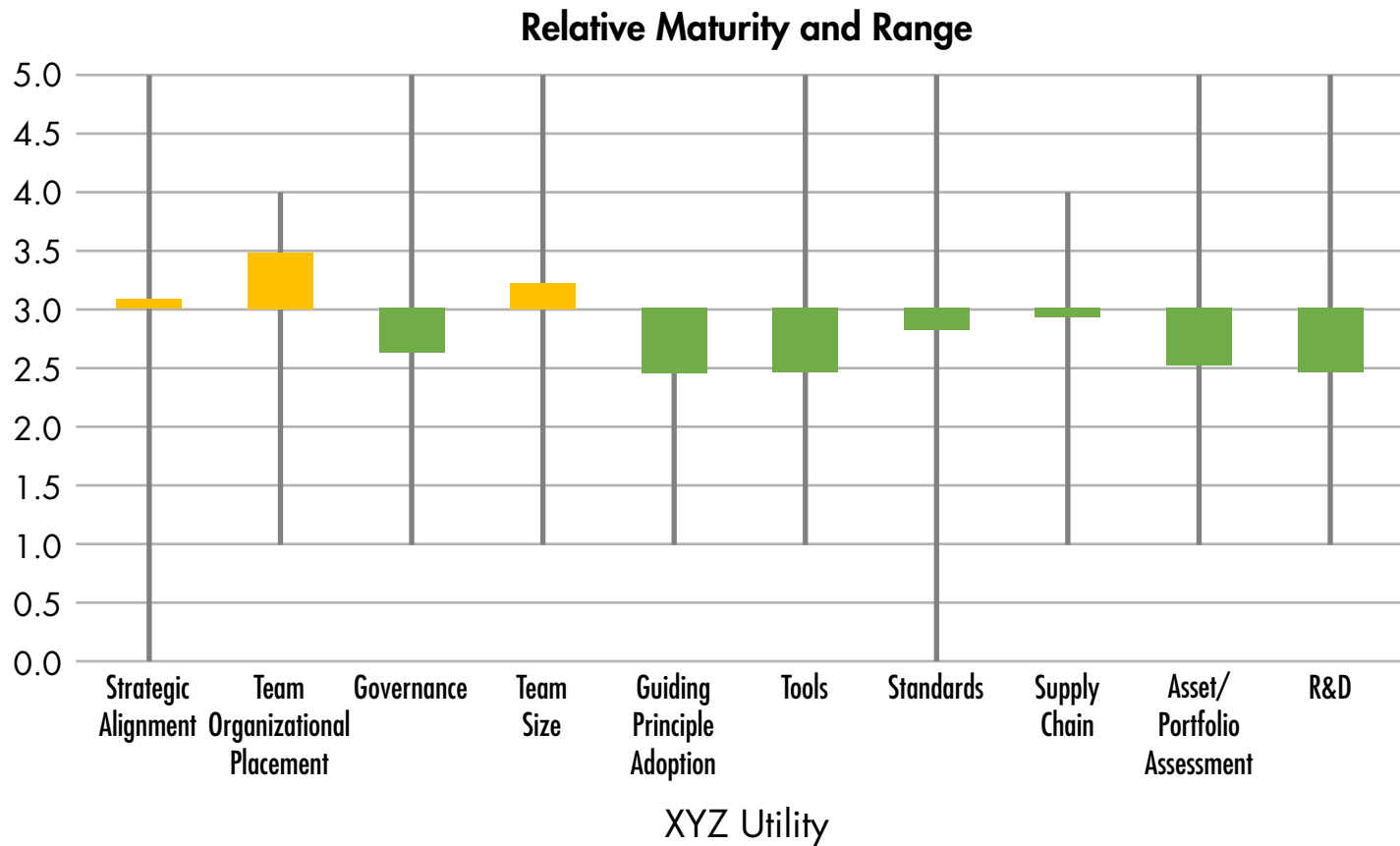*Green bars* – Starting at the average, the length of the bar represent the distance *above* the average

Relative Maturity and Range

Figure 1. Example dashboard for a generic "XYZ" utility based on 2016 results

The ten indicators that the EAIG settled on are:

- **Strategic alignment** – This reflects whether a discernible strategy exists, where the enterprise architecture team contributes to its development, and how well the team aligns to its vision.

- **EA placement** – This reflects where enterprise architecture reports in the organization.

- **Governance** – This reflects how architecture reviews are conducted.

- **Team size** – This is an indicator of the depth and breadth of enterprise architecture expertise and process for determining team engagement in organizational projects.

- **Guiding principle adoption** – This is an indicator of whether the team has created guiding principles, who knows about them, and how they are used.

- **Tools** – As the enterprise architecture team matures, there is an evolution from using Microsoft Office applications to using an application specific to managing enterprise architecture resources.

- **Standards** – One of the most prevalent activities of an enterprise architecture team is the assessment of standards, what fits best in the organization, and what should be avoided to minimize risk and maximize the value of utility investments.

- **Supply chain** – This is a factor of successful governance. This indicates whether an enterprise architecture team can impact purchasing decisions for systems that do not conform to the enterprise standards.

- **Asset/portfolio assessment** – This is an indicator of how the portfolio of enterprise assets and applications is managed.

- **Research and development** – At the highest level of maturity, enterprise architecture teams are usually charged with assessing new technologies for their impacts on business capability.

Another representation of the data is shown below in Figure 2, with the "radar" chart. This chart shows only the average values for each characteristic.
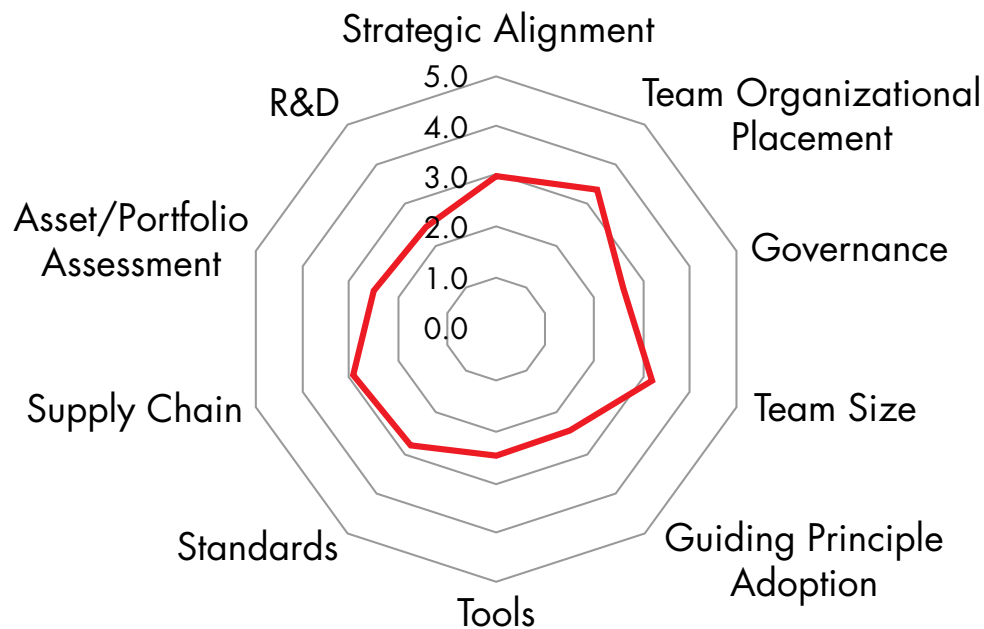

Figure 2. Utility average results for 2016

The resulting survey instrument is included at the end of this paper for reference.

For more information about the EPRI Enterprise Architecture and Integration program (P161E) or the EPRI Enterprise Architecture Collaboration Group supplemental, please contact: Dr. Gerald R. Gray, 865-218-8813, ggray@epri.com

Top Ten Indicators of Enterprise Architecture (EA) Maturity

How to use this survey: Rather than an in-depth all-day or multi-day maturity assessment, this is designed more as a "back of the envelope" assessment that gives a sense of an organization's EA maturity. The idea is that this assessment should be able to be completed within a matter of minutes.

The answers "scale up". For example, **a respondent should not answer "c" unless they have already satisfied the criteria for "b" (the lower level)**. To satisfy the criteria for a response, for those answers that have multiple criteria, *all* criteria must be satisfied.

For each question select the *one* response that best fits your organization.

1) Strategic alignment

a. ☐ There is no documented organizational or IT strategy to rely on.

b. ☐ The architecture team develops IT architecture but in isolation from any organizational strategy.

c. ☐ The architecture team develops architecture but on some strategy but on an ad hoc or project basis.

d. ☐ The architecture team develops architecture but only for IT systems, aligning with IT strategy only.

e. ☐ The EA team not only develops IT architectures but is equally adept at business architecture.

f. ☐ The EA team works collaboratively with both the IT and business strategy leaders in crafting architectures and standards that align with organizational strategy.

2) EA team placement in the organization

a. ☐ The organization is considering creating an EA team or re-forming the EA team after a failed initiative.

b. ☐ EA is just a concept to someone as a part-time job.

c. ☐ EA reports to some fractional (part-time) manager.

d. ☐ EA reports to a Senior Manager within IT.

e. ☐ EA reports to the CIO/CTO or equivalent.

f. ☐ EA reports to the COO.

3) Governance

a. ☐ There is no architecture review.

b. ☐ The architecture review is ad hoc but perhaps held for big projects.

c. ☐ There is an Architecture Review Board, but it only contains IT membership.

d. ☐ There is an Architecture Review Board chaired with Enterprise Architecture leadership with business membership as equal partners.

e. ☐ There is an Architecture Review Board with business membership and coordination with other governance functions, e.g., PMO.

f. ☐ There is an Architecture Review Board, and the CxO advocates for its recommendations.

4) EA team size

a. ☐ There is no formally recognized architecture function or capability.

b. ☐ EA responsibilities are attended to on a part-time basis and tend to reflect "accidental" architecture.

c. ☐ There is at least one FTE who is responsible for EA on a full-time basis, and this person relies on dotted-line SMEs to augment their capability.

d. ☐ The team has membership that includes expertise in some of the major architecture domains.

e. ☐ The team has membership with expertise in each of the major architecture domains: business, data, applications, and infrastructure.

f. ☐ The EA team has expertise in each of the relevant domains and there is a process to determine EA involvement in various projects (that ranges from "no involvement" to assigning full-time architects), and the EA team has the staffing to meet the needs of the demands placed upon it.

5) Guiding principle adoption

a. ☐ No documented guiding principles exist.

b. ☐ Guiding principles are in development or not fully formed (containing title, description, rationale, and implications).

c. ☐ Guiding principles exist but only the EA team knows what they are or where to find them.

d. ☐ Leadership is aware of them, but they aren't used for system selection.

e. ☐ IT leaders are familiar with the guiding principles and routinely use them when making roadmap decisions.

f. ☐ Business and IT leaders are familiar with the EA guiding principles and use them for system adherence.

6) Tools

a. ☐ The team only uses office suite applications, e.g. Microsoft Office, to document architecture.

b. ☐ The EA team only uses MS Office and perhaps a tool that uses standard UML for architecture diagrams.

c. ☐ The EA team uses a collaboration portal, e.g. Microsoft SharePoint, in addition to MS Office and UML support.

d. ☐ The EA team maintains a collaboration portal that is also used by the rest of the organization, in addition to MS Office tools and UML support.

e. ☐ The EA team has a collaboration portal and the EA team uses an entry-level EA tool that supports the ArchiMate EA diagramming standard, in addition to collaboration tools and MS Office.

f. ☐ The EA team uses an "enterprise level" (all of the above) EA tool that supports ArchiMate, business process information, and application and infrastructure configuration management.

7) Standards

a. ☐ There is no coherent set of organizational standards or understanding of their role in planning or portfolio management.

b. ☐ There is a list of standards, but it is incomplete and has not been updated in more than a year.

c. ☐ The value of standards is understood, and the organization is working to create a comprehensive list and plans to update the list on a periodic basis.

d. ☐ There is a list of standards, updated at least annually, but with no exemption/exception process or implications for non-compliance.

e. ☐ There is a list of standards, and it is updated in real time (as the standards change), and there is an exemption/exception process for any system under consideration, with the financial implications for non-compliance understood.

f. ☐ There is a list of standards updated in real time with an exception/exemption process, and the standards are tied to investment decision-making processes.

8) Supply chain

a. ☐ The EA team has no visibility into purchasing decisions.

b. ☐ The EA team is beginning to establish relationships wherein people in other parts of the organization let the EA team know when something that conflicts with the nominal standard is being acquired.

c. ☐ The EA team is consulted for *some* investment decisions but only *after* purchase decisions have been made.

d. ☐ The EA team is consulted for *most* investment decisions but only *after* purchase decisions have been made.

e. ☐ The EA team is consulted on *all* investment decisions with architectural implications (regardless of IT/OT source) *before* purchases are made.

f. ☐ There is alignment with the PMO, sourcing, and senior managers about investment decisions.

9) Asset/system portfolio assessment

a. ☐ There is no enterprise list of applications that are supported in the organization.

b. ☐ Different parts of the organization may have lists of applications but share that information inconsistently.

c. ☐ The EA team is working with other teams in the organization to begin cataloging all of the systems that are supported in the enterprise.

d. ☐ The EA team makes portfolio recommendations but has difficulty in getting decision makers to the table to align on the investment, maintenance, and retirement decisions.

e. ☐ The EA team considers portfolio impacts but only for a subset of systems, e.g., only headquarters IT systems or only business (operational) systems.

f. ☐ The EA team leads business capability assessment in collaboration with senior managers to determine application portfolio impacts.

10) Research and development

a. ☐ R&D activities are not recognized as being important by the organization.

b. ☐ R&D is fragmented or not coordinated across organizational silos.

c. ☐ The rest of the organization does their own R&D and may let the EA team know about their activities.

d. ☐ The EA team manages the relationship with R&D organizations (Gartner, Forrester, EPRI, etc.) on behalf of the enterprise, and this informs EA architecture, standards development, and impact assessments.

e. ☐ The EA team manages the relationship with other R&D organizations, investigates new technologies, and is consulted by business and IT regarding pilot activities.

f. ☐ The value of technology assessments is understood, there is a funded mechanism for performing them, and the EA team is engaged in their execution.