

THE CASE FOR ARCHITECTURE THINKING

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“Nothing is certain, except death and taxes”, so said Benjamin Franklin. For consultants, one can add one more certainty to this short list: any assignment they work on will have an architectural element to it that requires planning for change at an enterprise level. To make this happen, more and more parts of the technology industry are advocating a lean and agile approach known as ‘architecture thinking’.

Architecture change can have different consequences at solution, system, enterprise and industry level. While planning change at a technology solution level is not necessarily easy, it is specific and well-defined both in scope and time. Change at enterprise level is another story!

For innovation to drive an enterprise, it needs a map, and building that map for the enterprise IT infrastructure is where enterprise architecture (EA) comes in. Frameworks for EA cover different aspects of architecture practices, such as:

- methodologies for creating architectures
- a collection of viewpoints
- a language for describing architectures.

Two of the major open standards for EA are the TOGAF framework¹ and the ArchiMate modeling language²:

- the core of the TOGAF framework is the Architecture Development Method (ADM) which is an approach for EA development and implementation. The framework describes viewpoints, techniques, and reference models, as well as a content framework that identifies the types of building blocks that make up an architecture. The standard takes 46 chapters and over 500 pages to describe.
- The ArchiMate standard is a graphical language that provides a uniform representation for models that can support the complete architecture development cycle. The specification consists of a core language, aimed at the description of Business, Information Systems, IT, and physical Technology Architectures, and their inter-relationships. All in all, the standard defines no less than 18 viewpoints to describe an architecture.

Clearly, these standards are rather voluminous and can seem unwieldy. Sound judgment is needed when using them to avoid getting bogged down into lengthy and unproductive exercises or to get trapped in silos, missing out on real cross-business lines buy-in.

Given cycle times and the amount of effort & collaboration involved in applying these standards, things can and often do go wrong in EA land. For example:

- Too much investment in ‘architecture’ upfront of a project in a vain attempt to come up with a view that is complete and final instead of focusing on a process of continuous evolution. As a result the architectural model is outdated after a few iterations
- Focus on today’s project requirements only; the architecture is designed not considering what would fit well with the enterprise infrastructure and constraints
- Missing interaction between project teams and enterprise architects i.e. no feedback loop between them. Developers consider architects locked up in an ivory tower and architects consider coding beneath their status.

The spirit of our times favors speed of innovation above all – it finds its expression in ‘out of the box’ and team-based design thinking, agile development and DevOps team organization, assembling business and IT people in one and the same goal-oriented team.

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Unless you are a greenfield start-up, you will need to think about integration of the old with the new, and reducing ‘technical debt’. Focusing only on new ways to create customer value, without seriously considering sustainability and architectural integrity, creates point-solutions and enormous costs in the long-term. As Alan Perlis, a computer scientist and first recipient of the Turing Award, once said, “Fools ignore complexity. Pragmatists suffer it. Some can avoid it. Geniuses remove it.”

Clearly, complexity drives cost and being on top of understanding complexity, measuring it and forcing it down over time is a key aspect of any architecture exercise. Capco developed a model³ to capture IT complexity along four dimensions:

- **Function** – relates to functionality or the business and process logic supported by the IT asset.
- **Interfaces** – relates to interoperability between the IT assets.
- **Data** – relates to logical and physical data objects.
- **Technology** – relates to the underlying technology infrastructure (hardware, middleware, system-ware).

This means organizations need to strike the right balance between investing in the architecture process and reaping the benefits in terms of innovation and complexity reduction. How can this quest for balance be applied to the enterprise architecture process?

The Architectural Thinking Association⁴ has recently published a beginning of an approach which carries some promise, based on following tenets:

- **Lean:** each architectural model, map, principle, and integration artifact and its significance must be self-explanatory and understood by relevant stakeholders within a minute.

- **Collaborative:** 80 percent of architectural work is done by the many, i.e. by autonomous, cross-functional teams.
- **Business-orientated:** workforces must be encouraged to start thinking in architectural structures that are connected to each other. They should be treated as part of the architected system not only as a user; architecture artefacts must be mostly business related.

This approach defines five key deliverables, which will ensure that solutions and systems fit together and into the architectural picture of an enterprise:

- **‘business capabilities’** describe what a business needs to do in order to generate customer value.
- **‘value streams’** define how the processes of the company create this customer value.
- together they define what **‘business objects’** are needed. These objects encapsulate the information needed to drive capabilities and value streams.
- **‘applications’** are computer programs that support value streams and business capabilities and store/manage business objects in the form of data.
- **‘technology components’** support applications.

By focusing on these essentials, an ‘architecture thinking’ approach promises to maximize return on investment. At the very least it should help with applying established architecture frameworks more economically, as it aligns effort where it matters most. It might be worth your time to invest some of that effort getting to know this approach and, why not, contribute your ‘architecture thinking’ to further the cause!

REFERENCES

¹ TOGAF® Version 9.2, an Open Group Standard (G116), published by The Open Group, www.opengroup.org/togaf

² ArchiMate® 3.0 Specification, an Open Group Standard (C162), published by The Open Group, www.opengroup.org/archimate

³ Peter Leukert, Andreas Vollmer, Mat Small, Peter McEvoy, March 2012, “IT Complexity: Model, Measure, Manage, and Master” The Capco Institute Journal of Financial Transformation #34, 6-10

⁴ Foundations of the Architectural Thinking Framework®, architectural-thinking.com

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