The Enterprise Architecture vacuum

Abstract

Architecture in computing is an often misunderstood concept. Many of those who work in Information Systems and Technology Departments do not necessarily come from a software or systems architecting and engineering (specifically coding) background. They find it difficult to fully appreciate many of the subtleties of Architecture because they do not have a Modelling or Systems thinking background.

This paper shows how due to misunderstanding the breadth and depth of the various architectural concepts it is easy to overlook a fundamentally important and strategic part of the Enterprise as a whole; in particular Enterprise Architecture.

Introduction

Terminology in this area is rather too generic and unhelpful. General consensus based upon Job advertisements I've read in the last year or two, appears to think that Enterprise Architecture is simply, "Architecting Enterprise Systems or Applications". Realistically that is only about a quarter of what is actually done in Enterprise Architecture.

Enterprise Architecture is about "Architecting the Enterprise as a whole". All things Architecture; Business and Technical - Full stop. The enterprise can be viewed from many view points into a common cauldron of inter-related concepts; Business Architecture, Applications Architecture, Security Architecture, Data Architecture, Services Architecture, Infrastructure Architecture, Integration Architecture, Project Solution Architecture, the list goes on.

What is Enterprise Architecture?

As mentioned above, Enterprise Architecture is concerned with multiple facets that all interrelate and interconnect dependent upon which dimension you happen to view them from. They are many and all interwoven;

1. **Time Dimension** is about Business / IS / IT Strategy, past, now and the future; also has an element of Technology Innovation (horizon scanning) and hype cycle management.
2. **Project Implementation Dimension** is about IS/ IT Solution Architecture and Governance on projects.
3. **Pure Architectural Dimensions** are about partitioning and reducing enterprise complexity generally;
   a. **Structure, Behaviour and the inter-relationships** of all Enterprise layers;
      i. Business Architectural elements,
      ii. Information Systems - Application Architectural elements and Data Architectural elements,
      iii. Infrastructure Technology Architectural elements (communications, hardware and software)
   b. **Component Architecture dimension** - Loose coupling, highly cohesive entities and event driven.
   c. **Services Oriented Architecture dimension** – This is another view on the two above.
4. **Control dimension** is about IS / IT Governance, Risk & Issue management, Planning, Change Control and Configuration control management of Architectural items.
5. **Compliance dimension** is improvement, metrics, feedback and measurement to see how you are performing in order to improve.
6. **Abstraction dimension** – Contextual, Conceptual, Logical and Physical. Idea to product. Context to reality.
7. **Size and Granularity dimension** - Galaxy, Planet, Boulder, Stone, Pebble, Sand to Dust. Levels of detail.
8. **People dimension** is about human resources concerns such as motivation, team spirit and line management of Architectural personnel.

All the above needs to be implemented in some form of daily controlled centrally owned model that is kept up to date and that feeds information in from and out to all the relevant business as well as IT|/IS organisational areas so that the information they require is at their finger tips daily.

This is a broad subject and spans the management of **all business behaviour** within the enterprise. Not only the main operational aspects of the particular business *e.g. Deliver product*, but also the support activities of the business such as *e.g. Control Inventory of Software Applications*.

Ideally this involves a Visual modelling tool system and EA database repository that allows Architectural information to be organised and managed. Just as the financial department might manage the company finances using a software application, so too should Architecture be managed by a software application.

Enterprise Architecture overlaps

The simplified diagram below, depicts an example of overlaps typical of the organisational areas:
- A typical organisation IS /IT department organisation (four large blue boxes). Rest of the Business (Purple)
- The smaller rectangle shapes describes the work done by each organisational area (black rectangles).
- The red shading in the rectangles shows the Architectural aspects each area requires or affects daily.
- Where they all overlap is where the Enterprise Architecture (EA) vacuum of control occurs.

Architecture overlaps in the organisation (IS & IT centric)
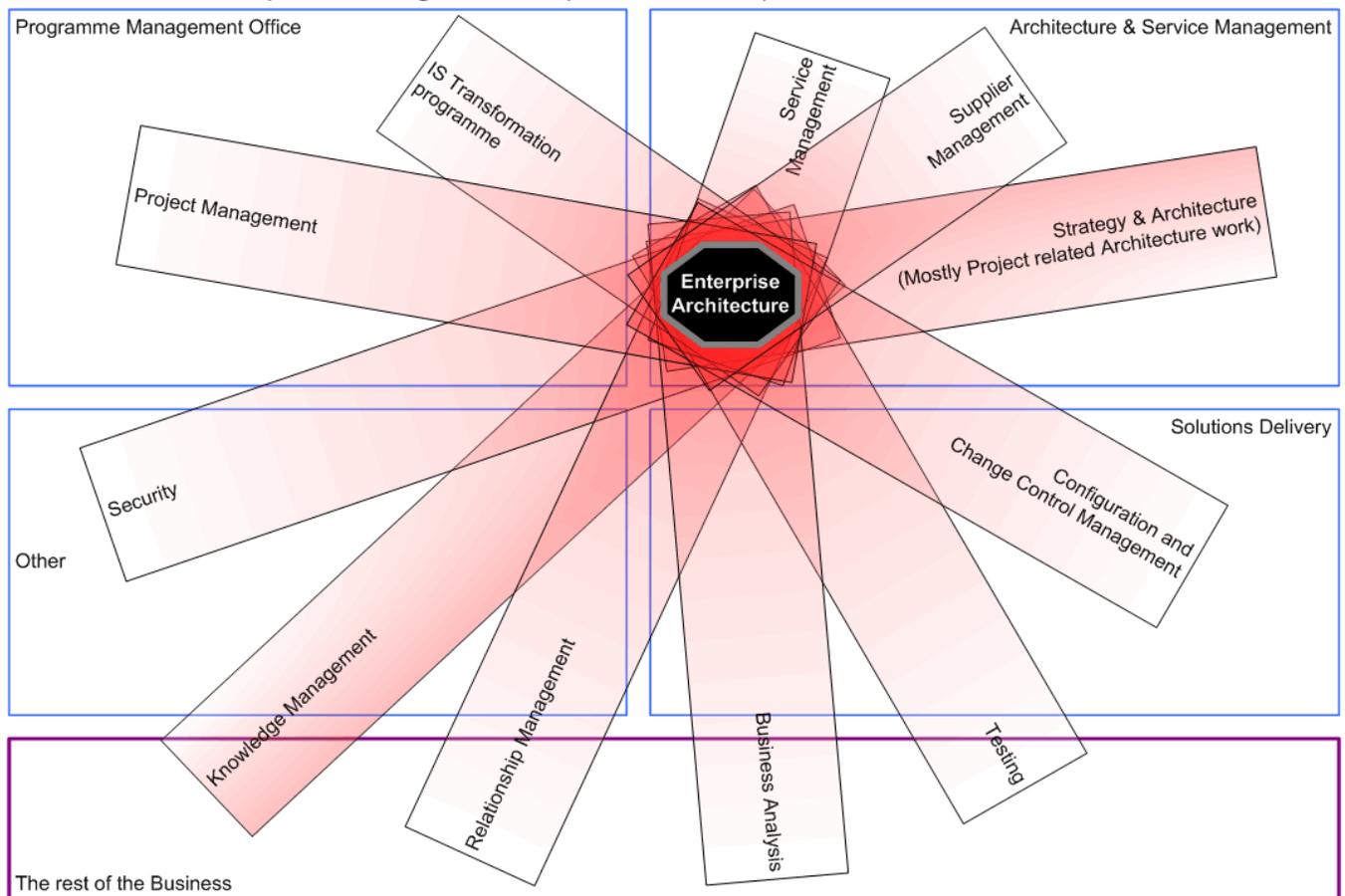
This paper contends that as a start to controlling the EA and in order to affect a sustained control on EA, this area has to be a business as usual, on-going, funded organisational area somewhere in the business, initially IT/IS.

It also contends that it could be done as a virtual team from many of the other organisational area's or controlled by an EA team, but whatever happens it should be Architected by the Architects, and have collaboration and input from all other areas.

(Actually, ideally this EA group should be part of the CEO's office in the business and sit on the **Demand side** of IS/IT, as opposed to the **Supplier side**, which is the whole of IT/IS, however that is a subject of a separate debate.)

Why is it typically a Vacuum?

Well, because many firms only fund the Architecture team to manage Project Architectures and Governance. Which as one can see from the list in "What is EA?" above, only has one entry about project Implementation (no.2). All the rest cannot be coordinated without a sustained, managed, on-going effort, so consequently the firm ends up with each organisational area having to gather architectural information for their own needs or to "fend for themselves" architecturally. This leaves a vacuum.

This vacuum implies multiple disparate, non-uniform, non-aligned duplicated work effort occurring between organisational areas. Not saying this happens in all organisations but for example, these types of things occur:

- **Project Management** collects spreadsheets of Infrastructure and Application Systems for costing purposes.
- **Supplier Management** collects spreadsheets of Infrastructure and Application Systems for upgrade and licensing purposes.
- **Service Management** collects spreadsheets of IT Services for Service level agreements.
- **Business Analysis** collects mappings of Applications to Business Processes in spreadsheets.
- **Relationships Management** collects Business Services and business input to Strategies and Project demand requirements.
- **Knowledge Management** collects data architectural information in an Entity relationship modelling tool.
- **Security** collects Infrastructure Technology Systems and Applications information for security compliance.
- **Solution Architecture** collects Architectural Baselines to govern the Services and Projects but also in some spreadsheet.
- **Other areas** collects other information, Finance for hardware and other Asset management, HR for handheld device management, Legal for contract appendices listing items, etc.

If all of these factors are not controlled and managed in some form of central sustainable practice, under strict version and configuration management control, then we have a vacuum in the Architecture of the Enterprise.

Life without Architecture

On one of the EA forums on the internet, a lovely quote from Jeanne Ross [1] was cited:

"We tell this story about the Sarah Winchester house in California. This woman bought a six-bedroom house in 1864 that wasn't finished. When she moved in, she fired the architect, brought the foreman in and said, "Okay, here's what I want you to do tomorrow." She did this every day for 36 years, then hired 22 carpenters and kept them busy full time.

When she was done, she had a house that, by most counts — and it's hard to count — had 160 rooms, every heating mechanism ever devised by man, stairs and doorways that led to nowhere … just nonsense all around.

Basically, that's the way companies use IT. They wake up in the morning and they say, "Wow, our customer wants us to send them this information. We don't have it. IT, go do that." Then tomorrow, it's a different thing. "

While the iterative and continuous idea is great, the lack of organisation, structure which is Architecture is completely lacking.

Conclusion

The question one has to ask is;

"Do we cover all these aspects from a central EA function?" more importantly "Are we able to manage complexity?".

If the answer is No on both counts, then we have an Architectural vacuum.

This EA vacuum, leads to lack of information, duplication of work while the same info is gathered by many areas, multiple versions and list of information trying to approximate the truth, multiple sub-sets of information that do not add up to a comprehensive whole. These information items cannot even be easily merged because each instance uses different terminology and naming.

The answer is to replace the vacuum with a knowledgeable team, with the correct tools and processes to establish a Core EA, from which all the other organisational areas, can both feed from and feed into.

The Core EA would control a small enough and manageable enough set of Core information items, around which all the rest of the organisation would add their own relevant detail. Together all of this then becomes the overall Architecture for the enterprise.

References and Related reading

[1] Jeanne Ross : http://mitsloan.mit.edu/faculty/spotlight/ross.php

[2] Edwards, Charles, www.AgileEA.com, July 2008: Changing The Culture – Enterprise Architecture Systems. http://www.agileea.com/portal/index.php/whitepapers/41-communication.html

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