White Paper

The Architecture Repository is not an alias for a CMDB

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"An organization (or Enterprise) is the most complex structure man ever conceived" - a comment made by John Zachman1, the father of the Enterprise Architecture discipline, on more than one occasion when addressing executive management teams of large organizations.

It feels overwhelming to hear a statement like that when you are a mere mortal working towards creating a coherent architecture for your organization. You have to find a way of receiving context and intent and communicating architecture decisions with a wide range of stakeholders within and outside of the organization, whilst at the same time you must leverage architecture and solutions assets from within the organization and the industry at large.

It is in this context where silver bullets fired from consultants and colleagues alike (and from several different disciplines) provide more chaos than simple straight forward answers to the architectural problems in the organization.

In this white paper I want to position the Configuration Management Database or CMDB within the organization versus the Architecture Repository. In recent blog posts, vendor tool demonstrations and other web discussions I'm noticing a trend where organizations are trying to position the Enterprise Architecture Repository as a single version of the truth in the organization and by doing so, importing or merging data from several environments into one.

The main focus seems to be organizations trying to link and merge the CMDB with the Architecture repository. There are several reasons why I think it is a bad idea of which the simplest is that the information contained within the CMDB and the Architecture repository are supporting different decision makers and stakeholders within the organization. The granularity and type of information is very different in these repositories although on the surface it may seem very similar.

The Open Group's TOGAF 9 Architecture standard provides a very useful concept, the Enterprise Continuum, to assist Enterprise Architects to classify different information In the following sections I will position the CMDB, Architecture Repository and the Solution Requirements Repository within the Enterprise Continuum.

In the last section I will use the TOGAF 9 how the different repositories can be aligned when performing architecture work without the need to create a single integrated repository.

The Enterprise Continuum

The Open Group Architecture Framework (TOGAF) provides guidance for Enterprise Architects in a number of ways. The best known guidance is the Architecture Development Method (ADM) that is used by Architectures around the world as guidance when executing architecture activities.

One of the lesser known concepts is the **Enterprise Continuum**, a classification scheme that can be used by Enterprise Architects to classify different information assets within Enterprise Repositories.

Enterprise Repositories are used to store architecture and solutions descriptions, models, building blocks, patterns, viewpoints, and other artefacts from within the organization and from the industry at large. A key repository used within the Enterprise Continuum is the **Configuration Management Database (CMDB)** which contains Configuration Items, or information assets deployed within the organization or enterprise. The deployed assets described within the CMDB are used to create Architectural Context that influences the architectures contained within the **Architecture Continuum**, one of a further two continuums contained within the Enterprise Continuum, the other being the **Solutions Continuum**.

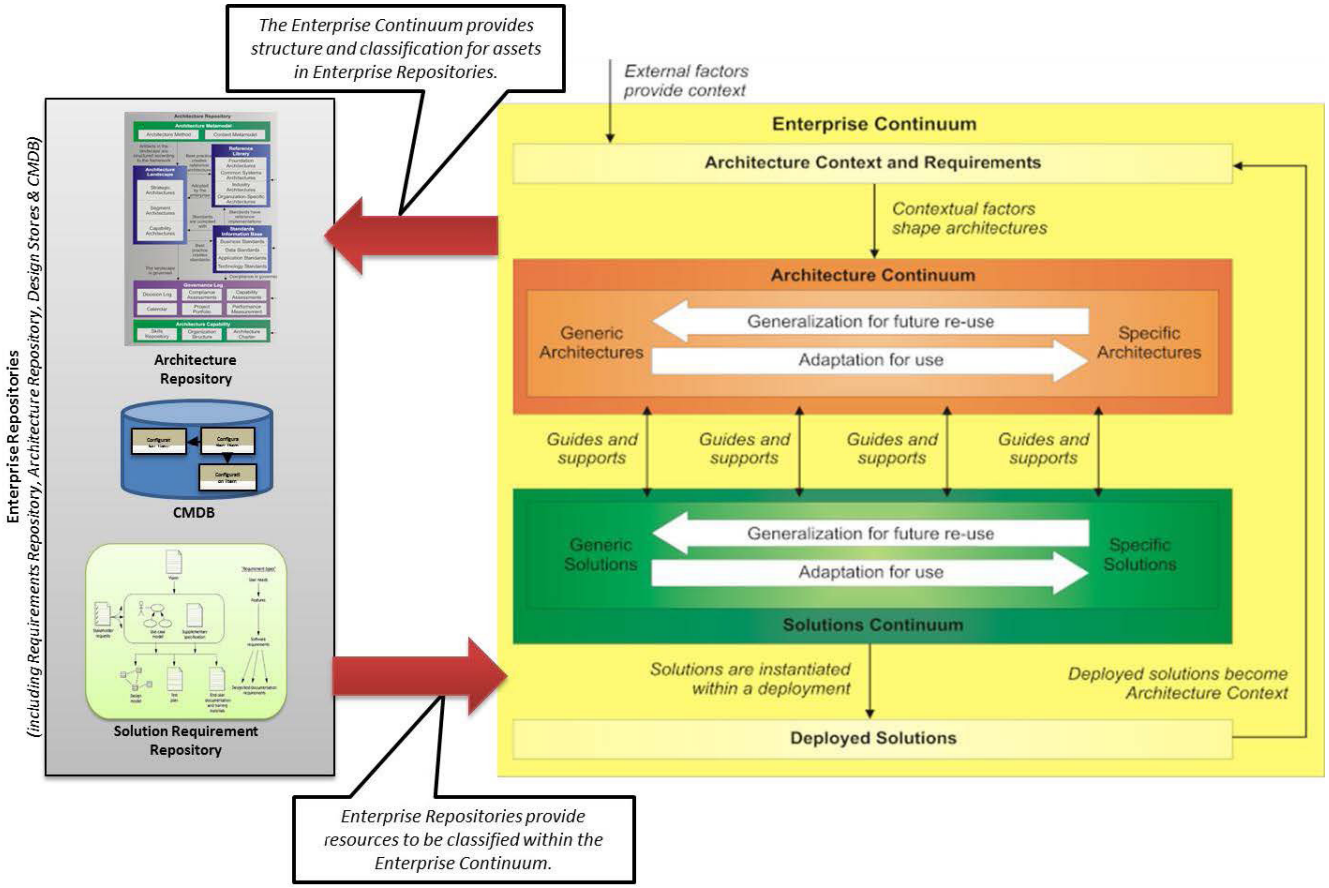

Figure 1: Enterprise Continuum

The Configuration Management Database (CMDB) is an enterprise repository (figure 2) used by the IT Operations Team to support the Configuration Management discipline. The purpose of Configuration Management is to identify, record and report configuration items to enable a team's capability to perform risk analysis, and change and release management.

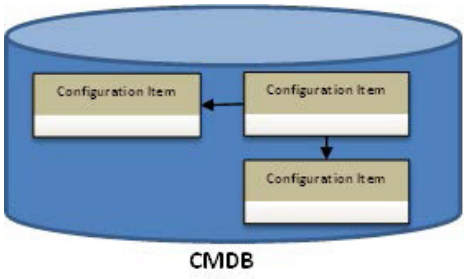

Figure 2: Configuration Management Database

The basic structure of the CMDB is subject-oriented, not functional or application driven. Data stored in the CMDB is also volatile and can be updated directly within the CMDB or from source system feeds during the day. The result is an enterprise repository, which contains detailed information that can also be used for analytics and decision making. The information gathered and stored in the CMDB can be used as context when Enterprise Architects start a new Architecture Vision phase.

The Architecture Continuum

The Architecture Continuum is (see fig 1 again) is used to classify and identify architectural content within the Enterprise Continuum. The Open Group, in the TOGAF 9 standard, proposed a structure for an Architecture Repository (see fig.3 below). The Architecture Repository specifically includes a Reference Library section divided into the architecture classification schema, as defined within the Architecture Continuum.

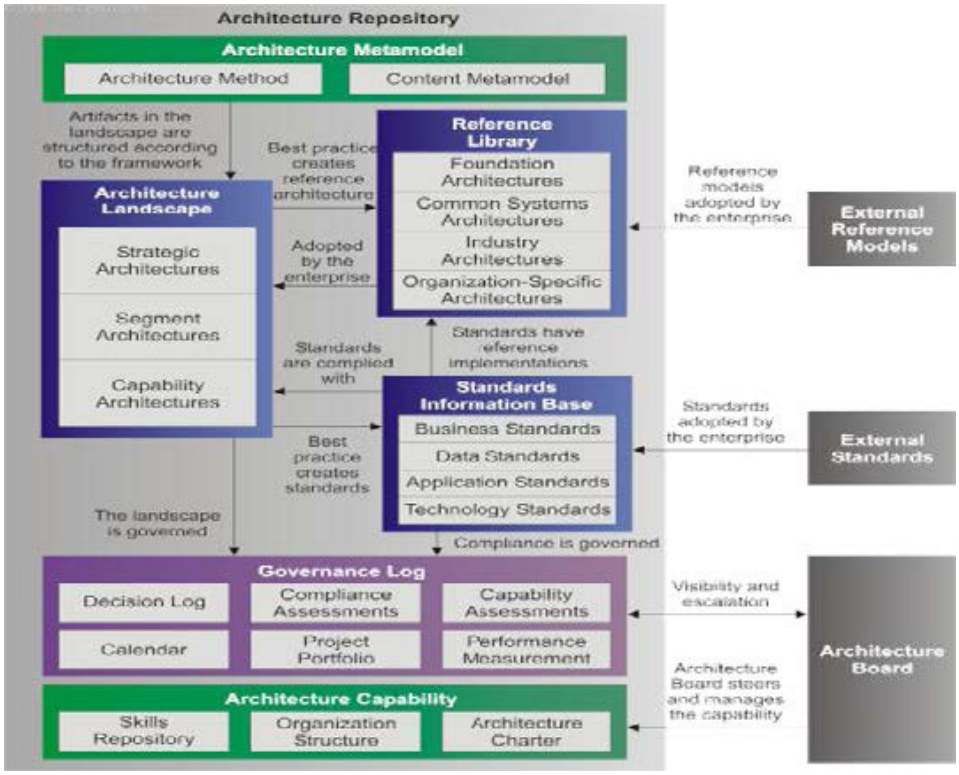

Figure 3: TOGAF Architecture Repository

The Solution Continuum

While the Architecture Continuum is used to classify architecture repositories the Solution Continuum is structured around current organizational solutions (re-usable solution building blocks) and potential solution libraries and building blocks available from the industry. Figure 1 at the beginning of the white paper clearly shows how the Solution and Architecture continuums are classified from generic architectures on the left to specific architectures on the right. This means any solution or architecture re-used from the Organizational Specific area is more concrete that an architecture or solution classified as being Foundational.

Figure 4 below is an example of an Enterprise Repository that can be classified within the Solutions Continuum.

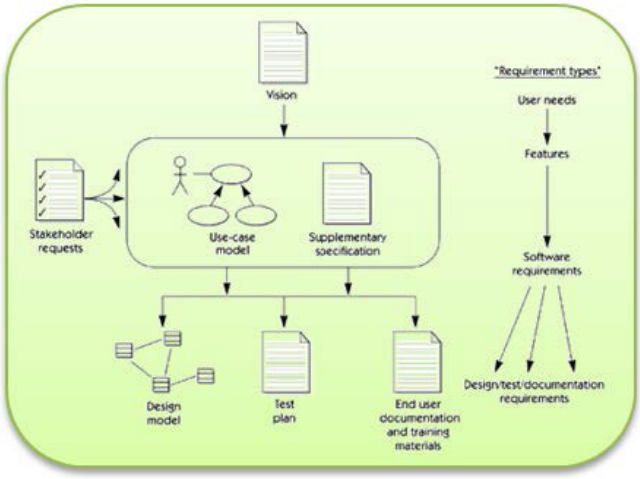

Figure 4: Solutions Requirements Repository

The content in the Enterprise Repositories within the solution continuum, are shaped by the Architectures used within the Architecture Continuum. The Enterprise Repository used in this white paper is the Solutions Requirements Repository that contains the business and systems requirements, solution software libraries build code, test plans and references from the organization and also software patterns and libraries from the industry at large.

All the solutions configured and constructed within an organization are based on the building blocks identified within the Architecture Continuum (see figure 1 again).

The solutions classified within Solution Continuum are not all deployed within the organization. Deployed solutions are registered within the CMDB. This brings us full circle back to the deployed solutions being used as input for the architecture context and requirements.

THE TOGAF ADM and Repositories

In the previous sections I described the different parts of the Enterprise Continuum and associated different Enterprise Repositories with each part. From the description of each part it should be clear that the content within the Enterprise Repositories are quite different, although complimentary.

The difference between the CMDB and the Architecture Repository can be more clearly described by way of an illustration. The list of Enterprise Repositories is not exhaustive, and there might be a bit of an overlap, but in figure 5 below the different phases of the Architecture Development Method are linked to specific Enterprise Repositories:

- ADM Phase A – E Architecture Repository
- ADM Phase F –G Solution Requirements Repository
- ADM Phase H CMDB

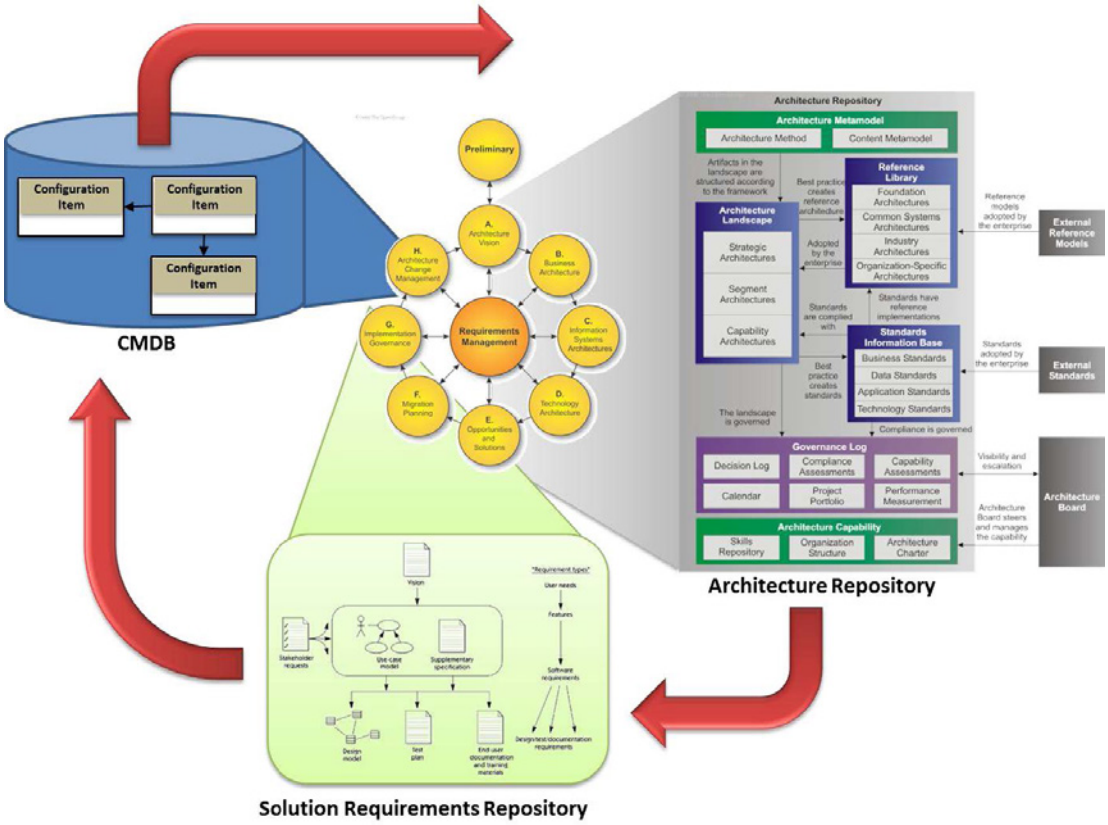

Figure 5: TOGAF ADM and Requirements Management

ADM Phases A – E

Phases A – E are the core phases of the TOGAF Architecture Development Method with regards to developing new architecture within the organization. Information collected within these phases includes baseline information from the organization as well as future state requirements. The information collected is translated and aligned within a team scenario to produce a deliverable that is expressed in diagrams and words in the form of requirements statements.

The Architecture Repository is the primary repository containing information on different that is both conceptual and logical and even a bit physical, depending on the scope of the project determined in Phase A. The purpose of the architecture repository is to give architects better re-use, an easy platform for collaboration and the ability to transform the architecture into tangible products.

ADM Phases F– G

Phases F- G are more solution focused. Most organizations have their own internally developed version control and project management systems.

Although TOGAF and the tool vendors of EA software usually try and match functionality of both development and solutions architecture tools with Enterprise Architecture solutions I still believe that solution modeling need to be performed in a modeling tool that cater for a full Software Development Lifecycle.

The requirements collected within the Architecture Repository can easily be transferred to the Solutions Requirements Repository (my favourite export format is the volere template) where it can then be allocated to specific project teams.

Managing Solutions Architecture deliverables within an Architecture Repository is simply not feasible with the sizes of Architecture teams that are available in organizations.

ADM Phase H

Phase H is focused on change management and operations. I can see the need for the service to have a record of all the configuration items in the organization. The records are updated from a range of live data feeds and manually within the organizational model.

Change requests are captured within the CMDB, and relevant information is forwarded or recaptured within the organization.

Conclusion

Enterprise Repositories are important in our fast-paced world where organizations are now paying information professionals even more than before to optimise and streamline their systems and processes. Vendors and organizational teams are collectively trying to link as much information together as possible, without properly analysing if it makes sense to do the same environment. This leads to complex repository environments filled with repositories with information that is of little value to most stakeholders (other than the Architects themselves).

In this white paper I highlighted the fact that by using a simple classification schema, it is possible to understand why you don't combine a CMDB and an Architecture Repository.

"The trick to forgetting the big picture is to look at everything close-up."

- Chuck Palahniuk

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