Overcoming the challenges of APM modeling with a tool

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APM
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SERIES

Introduction

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Modeling Application Portfolio Management (APM) data using an EA tool is challenging. The meta-model is designed to store artifacts across a number of domains and, depending on the product, usually in a lower level of detail than portfolio managers require.

There may be challenges around the tool chosen, for example perhaps some meta-model customizations aren't supported. This is just a small part of the issue, the way you get data in and out presents its own set of challenges.

This eBook helps to outline some of the challenges and offer some guidance as to how the challenges may be overcome. It may be most useful to teams beginning their APM effort in a new tool, but should be of interest to anyone involved with APM.

Challenge 1: Selecting the Best Meta-Model

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Once a tool is selected, the next step is usually to decide how to structure the meta-model – although some of the more prescriptive tools mandate a meta-model, this may not always be the case.

This is often the biggest challenge to overcome since it defines the structure of the data and therefore heavily impacts the effort required to manage the data.

Further to this, the meta-model selected will affect the ease at which users can access the APM data, to some degree the complexity of the data capture, and input exercise along with the effort required to construct any custom viewpoints.

There are of course numerous meta-models which offer support for application architecture, most of which are vendor specific. Some standards do exist in this area in the form of the TOGAF content meta-model and ArchiMate's meta-model also provided by the Open Group. Using these standards comes with its own set of challenges.
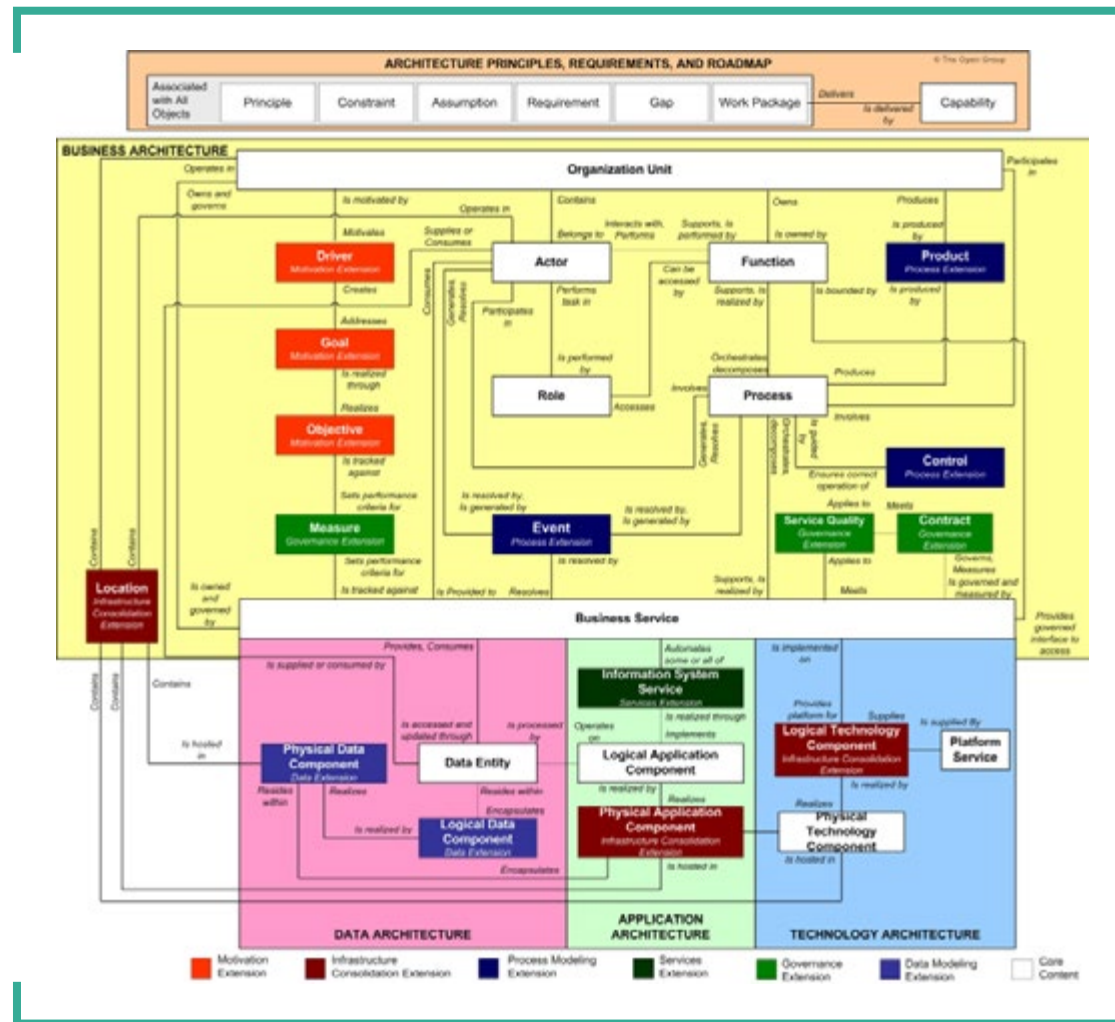
TOGAF Content Meta-Model

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Pros: Easy to Use; Easy to Learn

Cons: Perhaps overly simple compared to ArchiMate; Limited Attribution defined on object types

Summary: TOGAF offers an extremely simple meta-model, providing only three object types in the application architecture area (Logical Application Component, Physical Application Component & Information System Service), with only three relationships between these objects.

This makes the TOGAF meta-model easy to learn and easy to format / load data. With this simplicity comes an inability to model things such as application functionality explicitly.

TOGAF Content Meta-Model
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ArchiMate
Meta-Model

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Pros: More Descriptive; Well designed for Ease of Use

Cons: More Complex compared to TOGAF; Limited Attribution defined on object types

Summary: ArchiMate provides a more complex meta-model, allowing for more object types and subsequent relationships in the application architecture area such as Application Interface, Application Function, Application Service, etc. With this complexity comes both the ability to become more descriptive and the requirement to learn more about how the model can be built.

Although this meta-model is more complex it has been constructed with a great deal of logic, and includes concepts such as relationship strength, which helps simplify the otherwise complex meta-model.

It should be mentioned that although these meta-models are commonly used, it is possible in some tools to design and build a custom meta-model. This undoubtedly takes more time and requires significant effort, but it means the meta-model can be constructed in a way that simplifies data management, capture and load.

This also enables organizations to use terminology they are familiar with rather than learning a whole new language.

Challenge 2: Viewpoint Selection

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When content is stored in the selected model using the selected tool, the next challenge is the selection of suitable viewpoints. These viewpoints will expose the information collected through reports, diagrams, documents, and such.

Since these viewpoints will become views and expose the content captured to the organization, it is imperative that they are well received to ensure the messages contained in them are understood.

Further to this, the meta-model selected will affect the ease at which users can access the APM data, to some degree the complexity of the data capture, and input exercise along with the effort required to construct any custom viewpoints.

Whilst there are many factors impacting the success of Enterprise Architecture (EA) departments, one critical enabler is the accessibility, readability and clarity of deliverables such as application architecture viewpoints.

With some suggesting that the failure rate for EA departments sits at around 40% and that successful teams are struggling to have impact and gain recognition [1], viewpoints could be an important area for EA teams to focus their attention.

When it comes to viewpoints, there are a number of them suggested by both TOGAF and ArchiMate, but most of these viewpoints aren't focused purely on Application Portfolio Modeling (APM). With a few exceptions, TOGAF and ArchiMate viewpoints show cross domain linkages or the environment of the application.
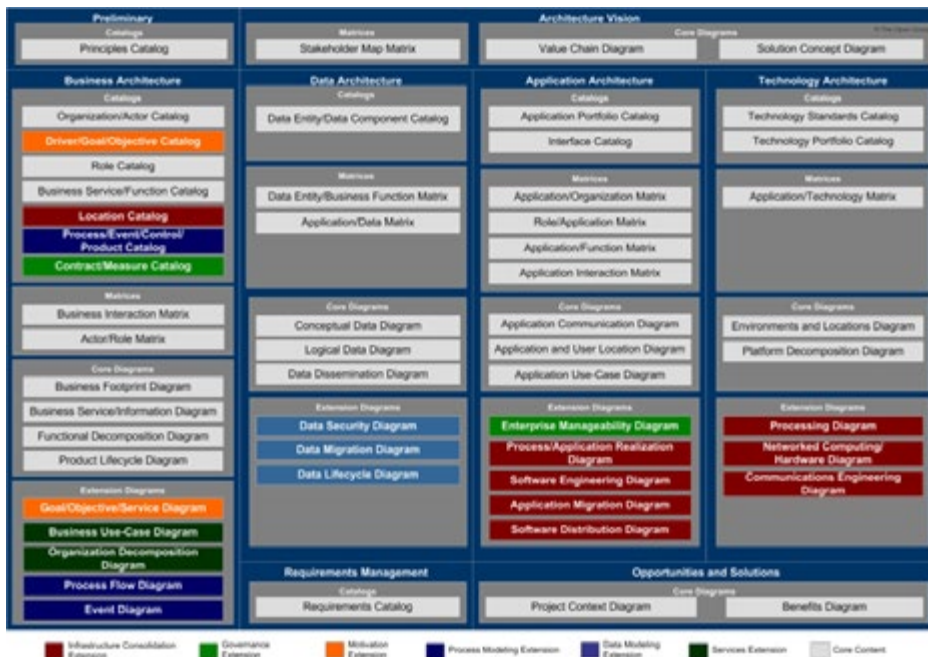
There are many resources from which to draw inspiration with regards to custom APM viewpoints, one such resource is a Forrester study which succinctly outlines metrics which C level executives find useful to measure the value of technology operations [3].

This research helps architects to understand which metrics could be embedded within their viewpoints to maximize their use. For example the paper advises an architect may wish to show 'Percentage of IT spend on run, grow or change the business' when attempting to show the linkage between IT spend and business results.

The two eBooks in this series have offered some suggestions in this area. In 'An Introduction to Application Portfolio Rationalization' [4] Capgemini suggested some analysis types which could form the foundation of a viewpoint requirements capture workshop.

More directly relevant, the paper 'Six Visio Views to Help Communicate your Application Portfolio Rationalization Vision' [5] provides some views with a specific focus on rationalization.

As we have already established, both TOGAF and ArchiMate have only a handful of attributes which support APM, and a few viewpoints which would be of use. With this in mind it could be deemed necessary to extend these standards with custom viewpoints, which can be tailored to meet the organization's specific needs.

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Challenge 3: Custom Reporting

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When selecting a tool the ability to generate custom reports, perhaps using popular BI tools such as QlikView and Tableau, should be a key factor in the decision. When populating the tool with APM data, often one of the driving forces behind the exercise is reports such as lifecycles, auto-generated charts such as business vs technical fit matrices and such.

Generally tools have some out of the box reporting capabilities, however the need to extend this capability and bolt on custom APM reports is likely to arise as requirements vary from the generic.

The need for custom reports may arise for any number of reasons, perhaps as a result of a merger, some demanding stakeholders or out of the box reports which don't meet the requirements but whatever the reason the end result is the need for both a tool flexible enough to enable custom report creation and the capability to create such reports. Its usually best to create custom reports to pull data directly from the tool's database or synchronized version of the DB.

With such a capability, any BI tool is able to access and process the data to generate any custom reports which may be required – these same reports of course can be edited over time as requirements and data changes.

The key takeaway when overcoming this challenge is that although out of the box functionality and potentially expensive consultancy are alternatives, the preference for application portfolio managers who truly wish to meet the needs of their organization should be for direct access to their data from a specialized BI tool.

Most EA tools support some form of integration with BI tools, but for APM data this support will most likely be needed at some stage. This is re-enforced by the trend towards data accessibility, Gartner even predict that next year most business users will have access to self-service tools to prepare their data [6].

If this trend continues, business users will increasingly expect their custom reporting requirements to be met regardless of the source of the data.

Conclusion

We have seen how meta-model structure, viewpoints and reporting are areas application portfolio managers using an EA tool need to focus on in order to be successful.

The meta-model structure must be simple yet detailed enough to allow for a distinction between the different object types, this may mean TOGAF is suitable, ArchiMate or even a custom meta-model is required.

Perhaps the most visible of the challenges outlined in this paper are the viewpoints, which may not be included in the tool out of the box – this may lead to a requirement for custom viewpoints which take time to define and build. Reporting is also a challenge, having the ability to build custom reports is often required.

By reflecting on these challenges and how they may apply to your organization, its possible to estimate the effort your APM initiative will require, and plan for that in a realistic way. This eBook has also raised awareness of some of the pain points an application portfolio manager should expect to come across, which may consequently enable more fit for purpose solutions to be put in place.

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