

A BLUEPRINT FOR SELECTING YOUR VIEWPOINTS

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INTRODUCTION



A famed writer once wrote, “A designer knows they have achieved perfection not when there is nothing left to add, but when there is nothing left to take away.” Stripping things to the bare essentials is a very important part of communication – people have limited bandwidth, and they need to be able to focus on the essentials and not get distracted by peripheral information. It’s the recognition of this simple but fundamental truth that underpins the idea of ‘viewpoints’ in enterprise modeling – a defined format for the ‘views’ you created – the windows onto a model that hide certain aspects of a model in order to concentrate on other aspects of that model.

When you’re trying to understand the functions that an organization performs, you’re not interested in what application components are hosted on what servers. When you’re trying to comprehend the supporting software stacks of your applications, it’s not useful to consider the motivation model of your external stakeholders. Sure, these other questions can be important, but the human brain can only hold so much information in play at one time, which makes it necessary to focus on whichever immediate question that that model is being used to answer.

So viewpoints are an extremely useful technique for breaking a model into sufficiently small components that the model becomes useful. The international standard ISO 42010 provides a well-known, rigorous treatment of viewpoints and how they address specific concerns of specific stakeholders. At the same time, frameworks and standards such as TOGAF and DODAF and ArchiMate suggest a wide variety of viewpoints for use in this endeavor, as do other, less well known publications. However, these publications need to be applicable to every organization, so they propose a large number of viewpoints. This becomes a problem in that the personnel working on the model, and those consuming the views of the model need to invest time in becoming familiar with the concept of viewpoints, the viewpoints that are being used, and how the views they define display information.

A photograph showing a person's hands holding a smartphone over a desk. There are documents and a computer mouse visible on the desk. A large blue hexagonal graphic is overlaid on the image, containing text.

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INTRODUCTION (CONT...)

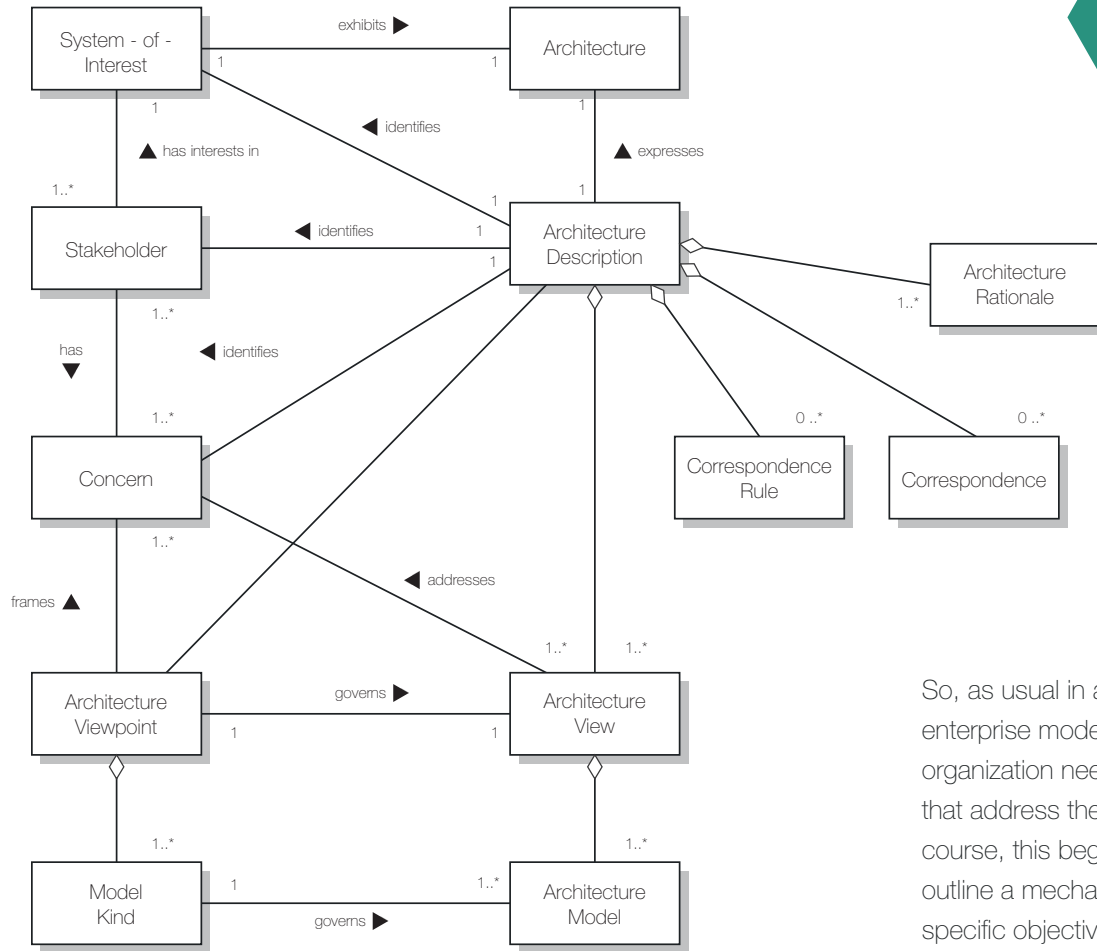


Figure 1: ISO 42010



"iServer is a visual tool and diagrams are the most common form of viewpoints."

So, as usual in anything of complexity, there is a tradeoff involved in enterprise modelling – there's value in the idea of viewpoints, but an organization needs to be selective and adopt a subset of viewpoints that address the specific needs of that organization. Fair enough, but of course, this begs the question – which one? In this e-book I'm going to outline a mechanism for selecting the viewpoints to use, based on the specific objectives of the organization. Some parts of the discussion focus on diagrams – after all, iServer is a visual tool and diagrams are the most common form of viewpoints – but the basic principles extend to the selection of all forms of viewpoint.

SELECTING AND SOCIALIZING VIEWPOINTS FOR MODELING

The starting point for selecting the viewpoints that the organization need to use should be the end goals of the modeling effort itself. Why is the organization spending time and effort on creating (and, we would hope) managing the model? What are the goals? The easy answer would be “to gain a better understanding of the organization’s operations”, but this dodges the question – presumably the effort is not driven by idle curiosity or because there’s nothing else to do. Two better ways to formulate the question are “What questions will this model answer?” and “What problems will this model help you address?”

There are a few techniques that a modeling team can use to formulate these questions, covered in more detail in a separate e-book. It may be that there are already specific questions that have been identified for the model, in which case well and good. However, it is more usually the case that the modeling effort is driven by a number of spoken and unspoken business problems (e.g. “We need to be more agile in implementing changes”). In such a situation, it becomes necessary to identify modeling goals that can fulfill these business goals. One starting point for doing so is the goals cascade technique outlined in the COBIT 5 standard.

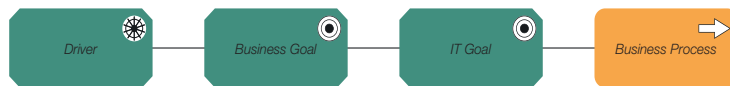


Figure 2: The COBIT Goals Cascade

The selection of viewpoints is constrained by a second factor, in addition to the goals of the modeling effort. This second factor is stakeholder expectations; specifically, that stakeholders will often have expectation as to the scope of a model. The traditional modeling ‘stack’ of business, data, application, technology has become well known thanks to publications such as TOGAF. Regardless of the debatable merits of this approach, I have found that there is often an expectation that any enterprise model

should cover each of these four areas to some level, and one that does not will be seen as incomplete. Unless it’s feasible to quickly change these expectations, the set of viewpoints will need to meet this expectation and to cover all four areas.

The third factor to consider is how many viewpoints to use. The origin of this discussion is that it imposes a significant overhead to expect modelers to become familiar with a couple of dozen viewpoints, and instead organizations should select a subset to impose a lower overhead. But how big a subset? Obviously, the organization should select at least as many viewpoints as required to answer the questions that the modeling is supposed to answer, and to cover all the areas expected by stakeholders. However, referencing the quote that opened this e-book, the organization should select the absolute minimum required to accomplish these goals. One useful rule of thumb is to take the famous rule of 7, which states that the average person can hold seven pieces of information in their mind at once. While individual consumers of views will not generally care about the entire model, when explaining the concept of viewpoints to managers, keeping the number this low can help them grasp how the set of viewpoints interacts to provide full coverage of the organization. In other words, if you have selected more than 7 viewpoints, then it’s worth carefully considering whether all 7 are truly necessary.

Before we take the above principles and apply them to a few examples, it’s worth talking briefly about socializing and establishing the viewpoints that are selected for the organization. There are two challenges here; first, explaining the concept of viewpoints themselves and second, explaining the viewpoints that have been selected. A useful tool for accomplishing this is a diagram that demonstrates the viewpoints and how they interact, as shown in the diagram below.

SELECTING AND SOCIALIZING VIEWPOINTS FOR MODELING (CONT...)

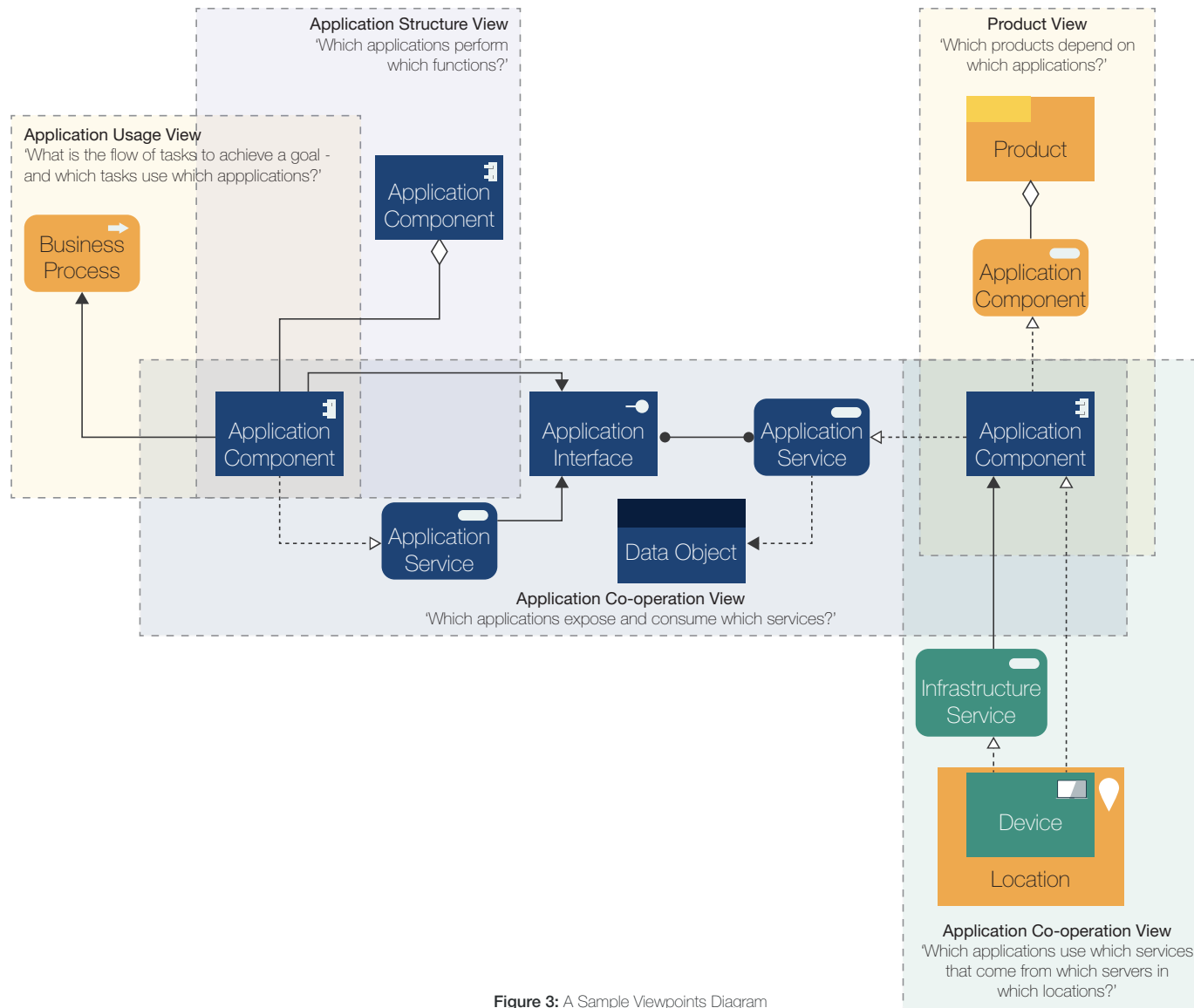


Figure 3: A Sample Viewpoints Diagram


SOME EXAMPLES

To finish this e-book, we'll consider some examples using the viewpoints listed in appendix C of the ArchiMate 3.0 specification.

Example one

Our first example is a bank in the Middle East, that wishes to focus on two primary questions;

- What regulations affect which processes, applications and data?
- What applications are hosted in which countries, and in particular, what information flows cross national boundaries?



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With this in mind, we can select the following viewpoints:

Requirements Realization Viewpoint – “allows the designer to model the realization of requirements by the core elements, such as business actors, business services, business processes, application services, application components, etc.”

Technology Viewpoint – “contains the software and hardware technology elements supporting the Application Layer, such as physical devices, networks, or system software (e.g., operating systems, databases, and middleware)”

Technology Usage Viewpoint – “shows how applications are supported by the software and hardware technology: the technology services are delivered by the devices; system software and networks are provided to the applications”

Example two

The second example is a Silicon Valley technology company, where the primary concern is IT agility and the ability to deliver new initiatives. This translates into the immediate questions:

- What applications have interfaces to each other?
- What processes depend on which applications?

Secondary concerns are

- What components go in to making up a new offering?



UNDERSTAND THE RULES

With this in mind, we can select the following viewpoints:

Application Cooperation – “describes the relationships between applications components in terms of the information flows between them, or in terms of the services they offer and use.”

Application Usage Viewpoint – “describes how applications are used to support one or more business processes, and how they are used by other applications”

Capability Map Viewpoint – “allows the business architect to create a structured overview of the capabilities of the enterprise”

Product Viewpoint – “depicts the value that these products offer to the customers or other external parties involved and shows the composition of one or more products in terms of the constituting (business, application, or technology) services, and the associated contract(s) or other agreements”

Example three

Our third example is a UK local authority. Their two chief concerns are managing obsolescence, and compliance with Public Services Network (PSN) regulations, leading to the questions:

- What applications rely on what software levels?
- What applications are subject to PSN impact, and for those applications, what risks and risk mitigations are associated with each application?

Secondary considerations are;

- Which statutory functions rely on which applications?
- How can we better plan our upgrades of core applications?

With this in mind, we can select the following viewpoints:

Technology Usage Viewpoint – “shows how applications are supported by the software and hardware technology: the technology services are delivered by the devices; system software and networks are provided to the applications”

Application Usage Viewpoint – “describes how applications are used to support one or more business processes, and how they are used by other applications”

Requirements Realization Viewpoint – “allows the designer to model the realization of requirements by the core elements, such as business actors, business services, business processes, application services, application components, etc.”

Migration Viewpoint – “entails models and concepts that can be used for specifying the transition from an existing architecture to a desired architecture”

CONCLUSION

To summarize then, there are three factors that a modeling initiative can use to select a subset of viewpoints to use.

- Define the questions that the model is intended to answer
- Verify that the coverage of the viewpoints chosen match stakeholder expectations
- Question if more than 7 viewpoints are necessary

Once chosen, a useful technique for socializing the viewpoints is a viewpoint diagram, which shows the entirety of the viewpoints that have been selected, and how these chosen viewpoints interact to cover the whole of the IT estate.





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