

4.2 - Relating Use Cases to the ODP Community Concept

Both the UML use cases and the ODP community concept can be used to capture business requirements.

While the primary purpose of use cases is to describe interactions between the User and the System, the community concept has a broader business scope, allowing description of interactions between all roles in the system as well as capturing business context, effectively allowing the design of a business architecture.

In addition, the community concept directly supports the expression of hierarchical and federated arrangements between communities, by allowing a community at one level of abstraction to fulfill roles in higher-level communities.

The similarities and differences are summarized in Table 4.2-1 below.

ODP community concept	Use case concept
Community contract	None
Community Objective	Use Case purpose
Role (of a User)	Actor
Role (of a System)	System
Community Behavior <ul style="list-style-type: none">• A set of actions performed by a System Role (in response to User Role invocations)• A Service offered by the System	Use Case
Policies	None
Enterprise Object <ul style="list-style-type: none">• Fulfills a role in a community• Supports community behavior, e.g., artifact created/exchanged/used by user/system	None

Table 4.2-1 ODP Community concept and Use Case models – High Level Comparison

The concept of community can be used to support use case analysis allowing, for example, grouping of use cases that have the same actors and subjects (or systems) into a single community. A use case can represent one possible interaction sequence between the actor and the system (a behavior) and several uses cases can be combined to describe the full set of interactions between the actor and the system. This further helps downstream specification of a system's behavior in terms of the services or interfaces it will need to provide to support the interactions that represent the behavior associated with relevant use cases.

Thus, the community can be used to help identify and express the following elements in the ECCF matrix (in the Enterprise/Business Viewpoint column, see Figure 4.2-1).

- The Scope and vision document, mostly narrative text, but identifying the business problem, key stakeholders and communities. The communities can be related to each other (or not), and each community should have its business objective stated.
- The Business Objective of each of the communities, which in turn consists of a related set of use cases; note that an enterprise specification (e.g., of a specific caBIG domain) can consist of several communities, leading to several business objectives; these in turn can be related to a higher level objective, as required.
- Grouping and structuring of the several related use cases from the use case inventory (and the corresponding use case specifications), where a 'related use case' is the one that includes the same user and system roles.

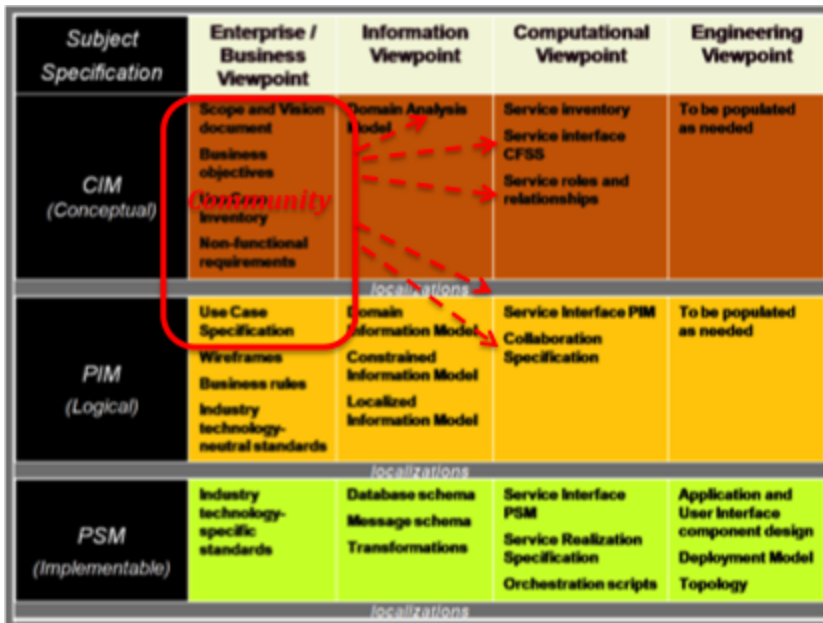


Figure 4.2-1 Community Traceability in the ECCF Matrix

A community model can also provide traceability from enterprise to the RM-ODP information and computational viewpoints, as depicted in Figure 4.2-1. Specifically, a community model capturing detailed use case specifications (through levels 2 and 3, as described in [Table 3.1-1](#)), as listed in the Enterprise Viewpoint/PIM cell of the ECCF matrix, can be linked to:

- A Domain Analysis Model (information viewpoint/CIM cell), through the information artifacts used and exchanged between roles in the community
- Service interfaces and Service role/relationships (computational viewpoint/CIM), via community roles
- Collaboration specifications (computational viewpoint/PIM cell), via community roles and interactions, as for example shown in [Figure 4.1-1](#).
- PIM service interfaces (computational/PIM cell), through services offered by community roles filled by systems and identified, for example, as part of the UML analysis and design as discussed in [section 3.2 - Use Case Realization](#).

It is through this traceability mechanism that each of the detailed use cases can be subsequently linked to the NCI Enterprise Services. A UML [diagram](#) outlining relationships between use case and community modeling concepts is found on the main page of this report.