

Functional Knowledge Management

Functional Knowledge

Knowledge has many appearances, like implicit and explicit, organizational, knowledge, and team knowledge, etc. Here we discuss functional knowledge that is used to design, define and support the different tasks that employees fulfill. Functional knowledge is thus defined as the ability to use information to perform certain tasks or business functions.

In Dutch governmental enterprise architecture several business function models like MARIJ, HORA and other BFM's (Business Function Models) exist. The disadvantage of all these models is that they differ too much between organization because, on the one hand, they are made organization-specific and, on the other hand, they are time-sensitive. This results in the nearly impossible exchange of developed functional knowledge between the same categories of organizations.

Functional knowledge between all governmental organizations should be exchangeable without much effort. Of course organizations differ, but certainly where the functions are the same it should be possible to reuse the knowledge around it. And where they differ to a greater or lesser extent, knowledge of these variances could soon lead to valuable insights. Because of this, we will define a Knowledge Function Framework (KFF) with which we can manage and exchange knowledge functions between a large variety of organizations.

Categories of Functional Knowledge

A business function is anything that an organization must do to achieve a business objective. In the shortest form a business function can be expressed as a verb and a noun. Nowadays these business functions are described and detailed in text only. To develop functional knowledge by using business functions, we need to enrich these. Enrichment can be performed based on three categories of functional knowledge:

1. Actionable functional knowledge
2. Architectural functional knowledge and
3. Augmented functional knowledge.

Actionable functional knowledge

Applying actionable functional knowledge is about adding executable components to business functions and realize DME or Direct Model Execution with the components, the business function, and the business processes to which the business functions belong. Actionable functional knowledge is designed and defined in the Solution Continuum. To apply Actionable Knowledge Business Functions are equated to Process Steps at the lowest level of decomposition: OTOPOP or One Time, One Place, One Person. This is the level where one person can handle a number of tasks in one cycle of action in the same place in an optimal way. With this approach the decomposition of processes, from top-level down into an optimal process step, ends at the right level.

The Business Function becomes actionable through enrichment with executable components and structures so that the Business Function as a whole becomes executable. The internal structure of the actionable knowledge function defines the cooperation structure of the components as a sequence and logical flow called the microflow. Besides the structure the logical flow is defined in terms of decision tables.

In modern technologies, the other executable components are business rulesets and microservices that enable manipulation of data from its source (Data Object) to the business function (Business Object) and to screens (Presentation Object). Optimal "decoupling" is pursued so that if the data sources change, the Business function does not have to change. Only the microservices that provide the data manipulations need to be updated.

The legal texts or business logic is translated into applicable business rulesets in a "structured language". As these rulesets are also executable, the entire business function becomes executable as well, and can thus be seen as an application. Business functions can be linked to the Process steps to make the whole process executable. We call this the "concatenation of functions" to processes.

To interpret the legal texts and create business rulesets from it, a text analysis technique is used to create a semantic (business) object model as an intermediary step. The model and its objects, attributes, and relationships are used to derive the business rulesets while parts of the text that can't be modeled can be used to define parts of the business logic like derivation, calculation, or other types of business rules. Next, the object model can then be used for developing, adjusting or integrating the model into the logical object model.

Architectural functional knowledge

Architectural functional knowledge is defined in the Architecture Continuum. With the correct tools it will become possible to integrate the components of the Architecture Continuum with the components of the Solution Continuum resulting in a high level of architectural knowledge.

The enterprise architecture is founded on the Business Service Concept, in which a chain of architecture components is recognized from the requester or actor up to the data objects in the physical data model. With any component as a starting point, the entire implementation of the service delivery based on the architecture can be visualized.

Augmented functional knowledge

Augmented functional knowledge is defined in the Enterprise Continuum, where it combines components from the Architecture and the Solution Continuum. Often the Augmented functional knowledge is maintained by functional managers, super users and sometimes each user can add personal notes and knowledge.

A simple implementation of such an Enterprise Continuum, can be the use of wiki pages per component of each executable knowledge function. Thus augmented functional knowledge combines the business knowledge of (instances of) Actors, Life Events, Products, Business Services, Processes, Business Functions, Business and Presentation Objects.

Extra user or functional management knowledge added to the microflow, the windows,1 or window panes based on the presentation objects, the business objects and its contextual relationship to other business objects, the decision tables and gateways, the business rules and the parts of legal or business logic texts, can be shown during operating the application.

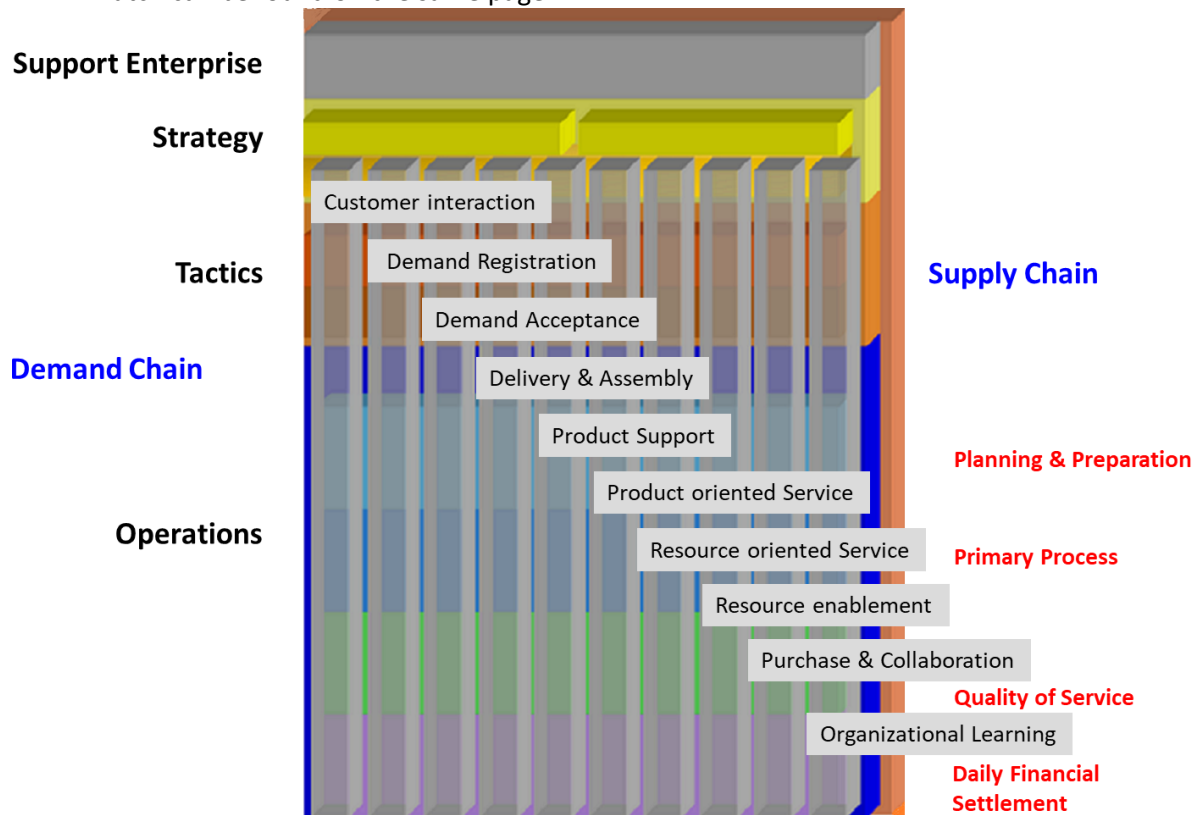
As each Business Function forms an Actionable Knowledge Function, also the operational, and technical knowledge of technical services and generic technical solutions, data services and data objects including their relationships can be delivered to the user.

Knowledge Function Framework

To support Functional Knowledge (collaborative) development, management, and exchange, it is necessary that the KFF or Knowledge Function Framework has the ability to intuitively find existing or position new knowledge functions in such a way that tens of thousands of functions can be maintained for every type or organization. Therefore a Generic Enterprise Function Framework (GEFF™) was developed and the initial version was presented in 2013 at the ITHEA Conference in Varna Bulgaria. Based on the GEFF the KFF was further developed, mainly by adding three functional columns to support request registration, diversified business services, and organizational learning.

The Whitepaper can be found on the Enterprise Architects download webpage (<https://www.enterprise-architects.com/index.php/contact-us/whitepapers>).

Another whitepaper concerning a standard Business Function Model, called “Towards a standard BFM” in Dutch can be found on the same page.



Because the first two levels of the KFF are the same for, and can be applied on any, organization, the 108 different groups of Knowledge functions in the framework, are the same, the knowledge functions can be intuitively found, developed in collaboration, added, maintained, and exchanged between the same type of organizations.

To support collaborative development and exchange a hierarchy of five levels has been developed. At the highest level the most generic knowledge functions applicable for all larger organizations are managed. At the levels below specialization is developed based on the UN ISIC and EU NACE Statistical classifications. In this way both highly generic and business specific knowledge functions can be maintained within the same framework.