4.3 Personalisation

In the KBN Approach Personalisation will be used to

- adapt the systems reactions to the users' behaviour;
- provide a kind of a "personal part" of the KMS.

4.3.1 Personalisation Concept

Personalisation might be interpreted in different manner:

- Look: Many Internet portals offer the possibility to decide what part of information is displayed on which part of the application's user interface. Figure 6.1-12 illustrates how portlets might be arranged within a portal page. The KBN portal prototype described in 6.1 does not offer this, but using the KBN portal in a company it might be useful for the integration of other applications.
- Functionality: Based on a user identity or a user type a certain set of functionality is offered. Some applications offer basic and advance modes. Within the KBN portal only KBs are able to use the functionality for KBs – other users do not see these functions.
- Information: Based on user identity or a user type or role a certain set of information is offered.

In Figure 2.3-3 Maier, 2002 located the personalisation within a KMS in an own layer called "Distribution & Personalisation". This corresponds to the look and functionality parts that are described later on.

The following section is concerned with personalisation of information. The personalisation concept introduced here is a special variant of "Multi-Dimensional-Personalisation" [Schilke et al., 2004], that are based on dimensions such as time, location and interest. Section 4.2.5 describes how experts will be ranked within a search result (based upon other criteria on dimensions).

The dimension interest should be implicitly accepted as most important: searching for information and experts focuses on specific topics.

The personalisation concept spans over all layers of a KMS. This leads to so-called "personal views" within the knowledge network. Figure 4.3-1 illustrates the principle of a personalisation layer to build a personalised view for a specific user. The cyan coloured layer shows the companies knowledge network. During several interactions within the KBN portal the user rated a specific node as "never important", this is marked red in the personalisation layer. Within the "private" part of the knowledge network he added a node and two links. Whenever the user navigates within the knowledge network he has his own "personalised view" as illustrated in the blue layer in Figure 4.3-1.

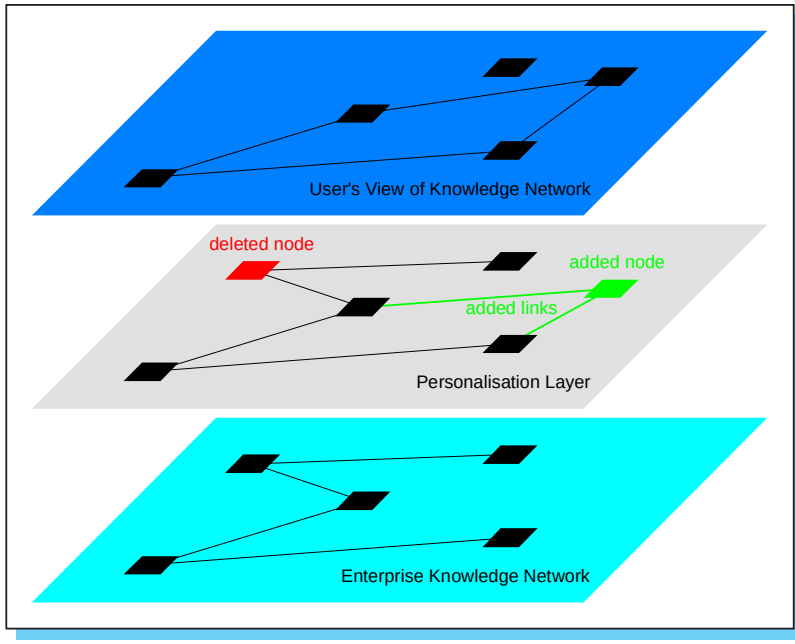

Figure 4.3-1 Personalisation Concept based on hidden Nodes in the Enterprise Knowledge Network and added Nodes in Private Parts of the Knowledge Network

Nodes rated as "important" by a user will be emphasised in personalised views as illustrated in Figure 4.3-2.

Figure 4.3-2 shows that relations can also be rated. Two ways to rate relations might be differentiated:

- rating of a single link, and
- ranking a link type.

Link types are pre-defined in the model of the knowledge network. Usually only specialists are allowed to define them. Common used link types in a KBN are:

- Is-Responsible-For;
- Is-Expert-In.

Rating a single link as “important” implicitly ranks the nodes linked by this link as “important”. Rating a type of link as “important” implicitly ranks all nodes at the endpoints of all links of this type as “important”.

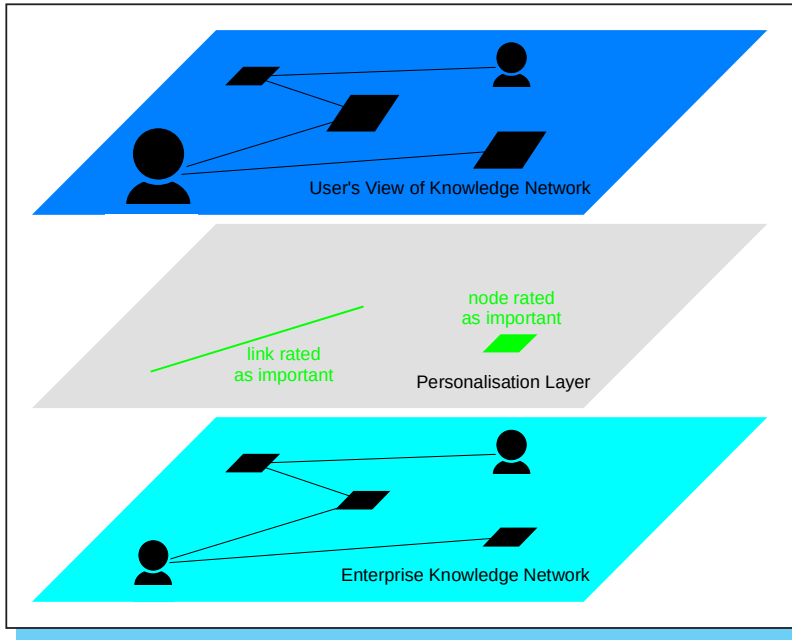

Figure 4.3-2 Personalisation Concept based on Rating Nodes and Links in the Enterprise Knowledge Network

4.3.2 How Personalisation Works in the KBN Portal

Finding information or experts could be optimised by personalisation. This means that there is a requirement to observe and store user profiles. The personal profile is composed of information about know-how, search preferences, the partners of the user and ratings the user entered to the system. The user, probably in combination with his personal knowledge broker should administer those parts of information, which cannot be automatically refreshed by the system. How the users' areas of expertise might be automatically refined and updated is described in Section 4.2.3. Additionally, the system logs user interactions during the search in order to be able to assist the user.

This profile contains information about

- areas of expertise and interests;
- a history of the user's navigational habits within the KMS;
- remarks regarding information provided by other users (for instance: important to me or not); and
- relationships with other users (KBs, experts and colleagues).

This information might help to avoid presenting duplicated data to the user. It also avoids displaying information that the user has marked as unimportant. In case the user wishes to establish contact to an expert the system prefers to suggest experts where a relationship already exists between expert and user.

Most KMS and internet search engines use only the last user interaction, such as a set of keywords (represented as a search string). Usually the only option is searching within the results returned by the search engine. The approach defined includes the **history of last interactions** to enhance results (see Section 4.5 for details) and provides the possibility to **rate results** as:

- very important,
- important,
- not important in the current search context,
- wrong in the current search context, and
- never important for the user (by clicking on 'YES' in a confirmation dialog this node is hidden for the user in the future).

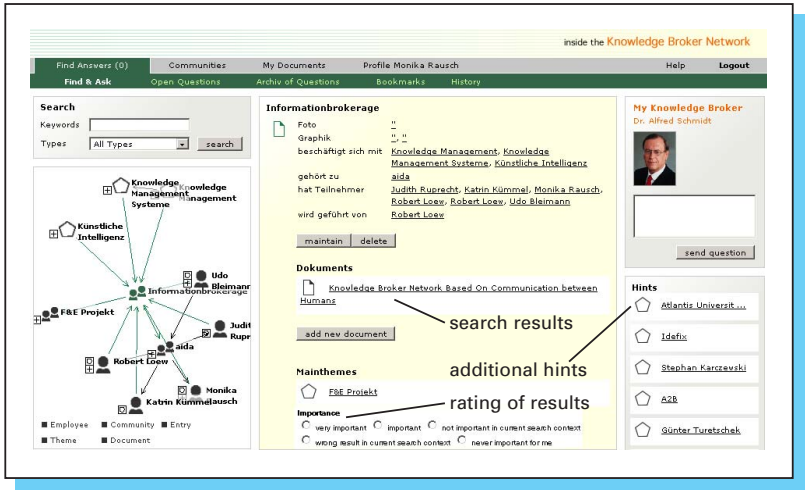

Figure 4.3-3 KBN Portal: Search Results, Additional Hints and Rating of Results

Figure 4.3-3 illustrates how search results could be displayed in the KBN portal. It also illustrates how a user can do the result rating. Additional hints are also calculated using personalisation strategies, but will be introduced in detail in Section 4.5.

A special personalisation feature can be used to decide which results a user prefers: information items like documents or people to communicate with.