

# Personal and Shared Knowledge Building in P2P Semantic Wikis

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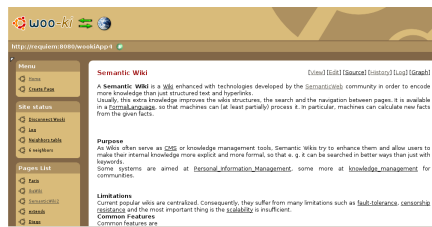
Semantic Wikis [1–3] are one of the most successful Semantic Web applications. They are widely used for collaborative knowledge management. In semantic wikis, wikis pages are annotated with semantic data to facilitate the navigation, the information retrieving and ontology emerging. Semantic data represent the shared knowledge base which describes the common understanding of the community. The knowledge base is built collaboratively through an iterative and social process. However, as knowledge is basically created by individuals [4], it is fundamental to support personal knowledge management [3]. Personal Semantic Wikis [3] provide an easy way to manage personal knowledge without collaboration supports. But, in their daily activities, to carry out a collaborative knowledge building activity, users need to manage both shared and personal knowledge. Collaborative knowledge building [5, 4] is a spiraled process which involves *externalization*, *publication*, *internalization* and *reaction*. Collaborative knowledge building systems support partially or completely this process. Although the semantic wiki systems are more appropriated to support collaborative knowledge emerging, they do not support the complete process. For example, Semantic MediaWiki (SMW) [1] enables shared knowledge building but it does not support personal one and SemperWiki [3] only supports personal knowledge building. Currently, there are no semantic wikis which help people to manage in a usable way both kind of knowledge.

In this work, we propose an innovative semantic wiki approach that supports both personal and shared knowledge building. The shared knowledge is unique and accessible to everyone. The personal knowledge is only accessible by its owner, it represents the private view of the shared one. Both kinds of knowledge are expressed in differentiated ways. For the emerging of shared knowledge, we follow the same approach as SMW where *shared semantic annotations* are embedded in the wiki text by using a suitable syntax. For the emerging of personal knowledge, we propose *Personal Semantic Annotations*. *Personal semantic annotations* are associated to the wiki page and they are only accessed by the owner user. Every wiki page could be tagged with several personal annotations. *Personal annotations* look like *tags*, however they are semantically richer: they can be a *category* or an *individual*. *Categories* define a family of elements, whereas *Individuals* denote elements that falls at least in one category.

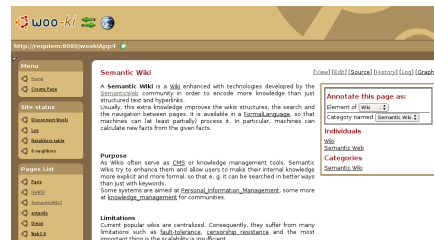
Adding *Personal semantic annotations* enables: to support the individual understanding in the collaborative knowledge building process; to provide per-

sonalized knowledge retrieving, structuring and navigation; to provide personal and shared knowledge retrieving; and to enrich the shared annotations and augment the shared knowledge base. This will help semantic wiki to become more popular. Moreover, combining shared semantic annotation and personal semantic annotations involves complementary activities. Whereas adding shared annotation seems to be suitable during editing, adding personal ones seems to be more suitable during reading. A first evaluation study [6] confirms our hypothesis.

We validate our approach (called *P-Swooki*) in a peer to peer semantic wiki because information dissemination is easily controlled *i.e.* shared annotations are broadcasted and integrated by all peers while personal semantic annotations remain local. *P-Swooki* extends the peer to peer semantic wiki *Swooki* [2] by adding personal annotations functionalities as shown in the figure 1). *P-Swooki* extends Swooki's data model and defines new editing operations. In *P-Swooki*, personal semantic annotations are hosted locally; a new personal annotations generates a corresponding operation which is executed locally against the user *personal understanding repository* (details in [6]).



(a) Semantic wiki Interface without personal annotations”



(b) Semantic wiki Interface with personal annotations

## References

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