# KiWi Annual Report

**KiWi Website:** http://kiwi-project.eu
**KiWi Wiki:** http://wiki.kiwi-project.eu
**KiWi Blog:** http://planet.kiwi-project.eu


The objective of the project KiWi is to develop an advanced knowledge management system that makes use of Semantic Web and Social Software technologies to enable better knowledge sharing, collaboration, and information integration. To this aim, KiWi implements a social software platform based on a Semantic Wiki that can be easily customised to the requirements of the respective domain. Particularly, this platform integrates advanced semantic technologies in the areas of reasoning, reason maintenance, information extraction, and personalisation. The KiWi system will be evaluated in two concrete use cases at the partners Logica (project knowledge management) and Sun Microsystems (software knowledge management).

## Summary of Activities

In the first 6 months of the project, KiWi has executed activities and made achievements in the following areas:

- the development of a broad "KiWi Vision" that describes into which directions Semantic Wiki technology, particularly in knowledge management, will likely develop in the future
- the investigation of state-of-the-art in the areas of reasoning, reason maintenance, information extraction, and personalisation, with particular focus on the area of knowledge management and social software
- the identification of the overall requirements of the two use case partners, and preliminary selection of those parts that will be addressed in the project
- start of the implementation of the KiWi core system, which even now provides a flexible technological basis for developing custom semantic social software applications

Throughout the next year, the KiWi project will provide the core system on which the concrete knowledge management applications will build. Also, the integration of advanced semantic technologies will start mid of next year.

## Work Area: KiWi Vision on Collaborative Knowledge Management

One of the main achievements in the first 6 months of the project was the development of the KiWi Vision. The KiWi Vision on the one hand provides common goals for the KiWi project, but on the other hand also gives a vision for the whole community that is working on the combination of Social Software and Semantic Web technologies. The KiWi Vision has already served as the base of a Semantic Wiki community founding process on the Ontolog platform[1].

[1] http://ontolog.cim3.net/cgi-bin/wiki.pl?ConferenceCall_2008_10_23

Specifically, the KiWi Vision first introduces into the "KiWi Approach to Knowledge Management". The main convictions here are that there has to be a move from "knowledge is power" to "sharing is power", and that the wiki philosophy combined with semantic technologies can support this move by breaking system and information boundaries and providing a platform that can adapt to the needs of users. The KiWi Vision also takes into account that enterprise settings are different and give new challenges to the adoption of social software tools.

In addition to this, the KiWi Vision describes the two KiWi use cases software knowledge management and project knowledge management, and sketches a KiWi showcase that aims to demonstrate the versality of the KiWi system. The KiWi Vision also summarises the user interface and interaction concepts, the technological foundation, and the research efforts taken in the project.

The KiWi Vision is available for public download at:
http://wiki.kiwi-project.eu/multimedia/kiwi-pub:KiWi_D8.5_final.pdf

## Work Area: KiWi Use Case Requirements

The second work area of the first year is the identification of requirements in the two KiWi use cases software knowledge management and project knowledge management. Although these use cases look similar on first glance, they are quite different in their requirements:

- in software knowledge management, the main concern is to integrate many different kinds of content, e.g. software documentation, source code, bug tracker reports, etc.; the users are software developers who want to get a quick overview over the content that is relevant for them regarding a specific task
- in project knowledge management, the use case partners are mainly interested in the representation and support of typical business processes, documentation about them, and sharing of knowledge about them; typical users want to be supported in executing a certain process and want to be able to find content about processes that are similar to their current task

Both use cases are very challenging and the KiWi project will likely realise only parts to demonstrate the feasibility. The industrial project partners have however committed to further develop the use cases on their own resources, provided the prototypes developed in KiWi are successfully evaluated.

## Work Area: KiWi Enabling Technologies

One of the main activities throughout the project is the furthering of applied research in the areas of reasoning, reason maintenance, information extraction, and personalisation, and the later integration of these technologies in the KiWi core system. There, the goal is to be able to support the user in many different ways:

- *reasoning* will be rule based and allow users to customise and adapt the system behaviour; reasoning will also be the base for the personalisation technology
- *reason maintenance* will support users by providing justifications about why the system exposes a certain behaviour in those situations that involve reasoning, particularly in personalisation
- *information extraction* will help to semi-automatically extract metadata based on the textual content of the system

- *personalisation* will give recommendations about relevant content and adapt the presentation and user interface to the context and requirements of the user

In the first 6 months of the project, the important state-of-the-art in these four areas has been identified and first proposals on the realisation of the technologies in KiWi have been made. These achievements are documented in the deliverables D2.1, D2.3, D2.5, and D2.7, available for public download at the KiWi Website.

## Work Area: KiWi Core System

In the mid of 2008, the work on the implementation of the KiWi core system has started with the definition of a common software architecture and a first prototype. The KiWi software architecture is a component-based service oriented architecture building on top of the Java Enterprise Edition and JBoss Seam. The main achievements in the core system so far are:

- the design and implementation of a common data model for representing versatile content in the KiWi system; to this aim, the KiWi system defines the concept of a ContentItem that can hold human readable content as well as meta-data;
- the design and implementation of a unified service for accessing and persisting ContentItems simultaneously in a relational database for human readable content and in a triple store (Sesame) for meta-data
- the implementation of two different user interfaces to demonstrate the versality of the content represented in KiWi: a wiki-based interface that follows similar principles like other wikis, particularly the KiWi predecessor IkeWiki, and a maps-based interface inspired by the system TagIT where users can geolocate ContentItems and display them in a quite different way

The KiWi core system is currently still young and an early prototype. A first development release will be available by the end of the year to foster an emerging Open Source Community around the project.

## User Involvement, Promotion, and Awareness

Although the project is still young, it is already well-known throughout the Semantic Web community. The main reasons for this are that several of the project members have even before been recognised as key proponents in the Semantic Wiki community and that dissemination activities have started even before the official project start and in early stages of the project. Specifically, KiWi has co-organised the following events:

- the workshop “Social Web and Knowledge Management” at the World Wide Web Conference in Bejing, China, April 2008; this event has been organised in collaboration with members of the ACTIVE project
- the tutorial “Semantic Wikis” at the European Semantic Web Conference in Tenerife, Spain, June 2008; this event has also been organised in collaboration with members of the ACTIVE project
- the 3rd Semantic Wiki Workshop at the European Semantic Web Conference in Tenerife, Spain, June 2008; this event has been organised together with members of the NEPOMUK project
- the I-Semantics conference co-located with the I-Know (knowledge management) and I-Media (multimedia management) conferences in Graz, Austria, September 2008

- the ReasoningWeb Summer School in Venice, Italy, September 2008, where KiWi has been presented to PhD students as an example for applications of reasoning

Furthermore, KiWi was present at many further events, most notably the "Corporate Wiki Day" at the X-Innovations conference in Berlin, September 2008, and a poster at the European Semantic Web Conference. In addition, there has already been a journal publication on the theme of Semantic Wikis in the IEEE Software journal.

Besides these "official" events, KiWi has also participated and inspired the founding of a Semantic Wiki community and virtual conference mini-series at the Ontolog forum, where most of the key persons (both practitioners and researchers) in the Semantic Wiki area have been involved.

In the area of software development, a small Open Source Community has already started to form with several external persons already contributing to the KiWi core system.

## Future Work or Exploitations Prospects

In the coming year, the three major strands of activity in the KiWi project are the further development of the KiWi core system into a platform that can serve as the foundation for many different kinds of semantic social software systems, the beginning of the integration of the advanced semantic technologies in the areas of reasoning, reason maintenance, information extraction, and personalisation, and the beginning of the implementation in the two use cases.

Particularly, we expect that we will have a downloadable prototype system for others to build on by June 2008. Some of the project partners have also already started building other projects on top of the current state of the KiWi core system.