For a Participative Knowledge Management

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This poster presents the results of two Knowledge Management (KM) experiments conducted within an industrial project. This industrial project aims at conceiving a building that must be functional during a long time scale. It thus relies on diverse sets of knowledge: mechanics, chemistry, numerical calculations, underground engineering, safety, project management and so on. Several evaluations of the project showed that knowledge tracking could be improved, that is, one could more swiftly retrieve and make consistent the documents justifying the technical decisions regarding the project. One of the responses to this problem was to create a document base specifically conceived for knowledge tracking. Three characteristics of the base serve this objective: (1) the base multiplies the entry points into the documents so that the thematic connections between them appear more quickly, (2) the documents are standardized so as to ensure every document meets quality criteria, (3) a base manager must verify each modification of the documents before integrating it into the base. This base is therefore very useful to the communities whose practices revolve mainly around ensuring the global consistency of knowledge within the project. The difficulty is that this issue is not the main focus of the communities who are asked to write the content of the base and keep it up-to-date. Those communities' main focus is indeed to conduct studies aiming at producing very specific pieces of knowledge. The issue of the global consistency of the knowledge mainly arises when they write the syntheses that are undertaken for the milestones of the project. Those syntheses are then an opportunity to put the diverse studies in perspective and to bring new issues to light. The problem is that the knowledge base implies to produce additional syntheses in templates which are different from the ones of the milestone syntheses. The base thus represents a potential disruption for the communities in charge of conducting the studies. Two recommendations can

therefore be issued: (1) making the form of the knowledge base documents match the form of the milestone syntheses so as to reduce the overall charge of syntheses production; (2) co-building the base and its functioning with all the communities involved: those focused on global consistency and those focused on the studies.

In this co-building perspective, tools such as wikis are interesting. The principle of wikis is that (i) every document can be modified by each user, and (ii) each user has tools to monitor the evolution of each document. The users can thus negotiate, as problems occur, the rules regulating document management. It was then decided to test a wiki for the preparation of the *Scientific Analysis*. This document is a milestone synthesis gathering all knowledge concerning the physical phenomena affecting the building. There were mainly two expectations regarding the use of the wiki: (1) it would expand the participation in the preparation of the document beyond the department that is directly in charge of it, and (2) it would enable a better preparation of meetings, thus reducing their frequency. To achieve those objectives, the wiki was structured so as to make the participation of everyone as little time consuming as possible. It was first structured around the "input data" of the *Scientific Analysis*, and questions were then identified and put into tables so that each expert could answer them in a box. The problem was that this pre-configuration considerably reduced the possibilities of each user to use the wiki for his own needs. The wiki thus faced the same problem as the knowledge base: it was structured around the interests of a small part of its potential users. It is indeed worth noting that the *Scientific Analysis* is inseparable of other milestone syntheses, notably the *Safety Analysis* and the *Engineering Dossier*. This means the questions raised by the communities in charge of the *Scientific Analysis* have direct impacts on the communities in charge of those two documents and reciprocally. To manage the interactions between those communities, coordination meetings are regularly organized by the project management department. In those meetings, the participants have the possibility to freely reformulate the questions according to their own perspectives. Two recommendations can therefore be made: (1) the wiki should be structured around the coordination meetings, that is, around the work of the project management department; (2) this space should be co-constructed by the diverse communities involved: the communities in charge of the *Scientific Analysis*, the *Safety Analysis*, the *Engineering Dossier* and the project management.

The first result of this study is the following: a KM setting needs to reflect the diverse interests and functioning modes of the communities it is based on. The knowledge base and the first test on the wiki constitute two counter-examples in that respect. Two recommendations can therefore be made: (1) relying on the settings and the structures which already exist, that is, on what has already been put to the test and satisfies the diverse communities involved; (2) co-constructing the new settings and the new structures so that they reflect the diverse interests and forms of functioning of the communities involved.