Diaspora Knowledge Network Project
Mid-term Report (December 2005)

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- Université de Technologie de Troyes (Laboratoire Tech-CICO)
- VECAM
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Coordinator: William Turner,

Group Architectures and Models for Interaction
Distributed Collective Practices
LIMSI-CNRS
Diaspora Knowledge Network Project
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Annex 1 : The VECAM progress report ........................................ Erreur ! Signet non défini.


Annex 3: the UTT progress report on the use of Agorae ... Erreur ! Signet non défini.


Overview:

The DKN project is organized around the following four tasks:

I. ° ICTs and Brain Gain (Juin 2005 – September 2005)

The DKN project is anchored in the social informatics research tradition. Accordingly, the following hypotheses have been adopted concerning the successful use of ICTs for supporting “brain gain”:

1.) The ICT tools developed for the project will not, by themselves, be sufficient to ensure brain gain.

1.1.) “Brain gain” is defined as the capacity of members in scientific and technical diaspora to mobilize the resources which are available to them in their host countries for use by the scientific and technical networks in their home countries. (cf Progress Report, September, 2005)

1.2.) The DKN research question is that of implementing a « mobilisation scenario » which raises simultaneously:

- a cognitive problem: identifying the resources which can (should) be mobilized;
- an organizational problem: defining procedures for working together at a distance despite the economic, social, political and cultural differences in the science systems of the host and home countries;
- a socio-technical problem: learning how to do things together over Internet through document mediated communications.

2.) Social informatics research holds that people learn to resolve their cognitive, organizational and socio-technical problems through interacting together. Its perspective is that of a pragmatics of action, which is different to the rationalist perspective generally adopted in computer science for modelling information processing requirements.
2.1.) This difference expresses itself through the adoption of different design strategies for supporting on-going collective activity:

- Traditional design activity is based upon the assumption that it is not only possible but necessary to proceed on the basis of technical specifications, user requirement studies, participatory prototyping and repeated evaluation exercises in order to build convergence between technological state of the art and user needs.

- Social informatics, on the other hand, argues for the need to build an interaction space in which people can debate proposals and interpretations, exchange information and define collective procedures (milestones, information processing protocols, task responsibilities) for doing things together.

2.2.) Social informatics presupposes a “configurable” information infrastructures.

a) The DKN platform is anchored in what appears to be two dominant evolutions in terms of open source technologies for supporting document-mediated collective activities:
   - the use of SPIP for collectively publishing documents on Internet sites,
   - and the use of WIKINI for interacting “on the fly” through these sites by exchanging messages which can be archived, threaded and annotated.

b) In addition, “plug-ins” are being prepared for use with the two SPIP and WIKINI planks of the DKN platform.
   - Social informatics is driven by both theoretical and empirical research into mechanisms for building and sustaining distributed collective practices over Internet. This “up-stream” research seeks to identify the conditions which have to be met in order for people to optimally do things together when they are located in geographically distant locations. It replaces the phase of technical and user specifications in the more traditional design model mentioned above. Social informatics is anchored in social science research into the pragmatics of collective action.
   - On the basis of this research, software applications designed to carry out specific information processing strategies are “plugged into” Internet sites and evaluated in terms of their contribution to installing and consolidating distant, interpersonal relationships. Specific indicators are being developed in the DKN project for this evaluation such as the content richness of debates; faster and more relevant information exchanges, faster convergence on milestones, task divisions and other organizational procedures.

c) The idea of a “plug-in” implies:
   - that software applications can be replaced should they be poorly evaluated or completed if new theoretical and empirical research reveals the need to set off in new directions.
   - that there is potentially a coherence problem. Diaspora members have to understand how to go back and forth between the different software applications in order to make the most out of the DKN platform for achieving the brain gain objective.
- that Internet information infrastructures are sufficiently standardized for implementing “plug-ins” as an alternative to participative prototyping for engaging in user evaluations.

3.) Theoretical and empirical research has shown that technology-mediated interactions are less efficient than face-to-face, personal interactions with respect to:

- making people aware of interaction opportunities (document-mediated awareness);
- collectively constructing the meaning of on-going activity (sense-making);
- building-up trust in group capacity to meet collective goals and objectives (confidence building);
- framing issues and interpretations (common language);
- managing knowledge creation through debate and negotiation (cognitive conflict management).

3.1.) A model for dealing with these issues was adopted at the first DKN Evaluation meeting held at the Paris UNESCO Office in September 2005.

Figure 2: Information processing model for the DKN project
3.2.) Producing social capital through document mediated interactions

b. As we’ve said, the social informatics approach sees brain gain as emerging out of collective efforts aimed at working out the cognitive, organizational and socio-technical problems encountered when playing out a resource mobilization scenario for developing countries.

c. When these efforts are successful, the level of social capital available to the members of a DKN will steadily increase, and this is considered as a prerequisite for brain gain as the diagram above shows.

c. Social capital depends upon the quality of social relationships and, as said above, this quality will be studied in terms of the degree to which members of a DKN:
   • are aware of interaction opportunities with others,
   • are able to anticipate with confidence on the help that they will receive from others;
   • share with others a common language and a sense of belonging to an efficient, active DKN
   • And are able to implement conflict management procedures in order to keep debates and discussions on track by avoiding harsh and disagreeable interpersonal relationship that dissipate social capital.

d. These measures of social capital are less tangible than those serving to measure human capital and physical capital.
   • Physical capital is clearly a private good. When people invest in a car, a house or a toothbrush they obtain property rights over that good and are able to use it as they see fit: people who invest in physical capital are able to capture the benefits of their investment.
   • To a certain extent the same is also true for a human capital investment. A person can anticipate a higher paying job, a more satisfying work status or the simple pleasure of a better understanding of the surrounding world by investing time and effort in schooling.
   • However, for any of the forms of social capital investment indicated above (awareness, confidence-building etc.), there is no guarantee of reaping the benefits of that investment. The reason is that those benefits depend upon the action of others.
   • This is why we’ve decided to focus our work on computer supporting a DKN “mobilization scenario”. In strictly theoretical terms, and ignoring the normal desire to want to take part in the development of one’s home country, personal investments to help the home country are dangerous when one is abroad because there is no guarantee that those investments will be rewarded.
   • An important issue of the DKN project is to better understand what incentives are needed to encourage members of the scientific and technical diaspora to mobilize behind a project for their home country. (This issue is being addressed by Jean-Baptiste Meyer of the French Research Institute for Development (IRD) and will be written up for the May 2006 DKN progress report)

3.3.) Like other forms of capital, social capital is productive, making possible certain ends that would not be attainable in its absence. If people mobilize behind a particular project we
expect that the outcome of social capital formation in the DKN context will be “brain gain”. Brain gain is defined in our study as being

- 1. *Access to resources*: funding, special equipment and materials, specific skills, knowledge
- 2. *Personal benefits*: visibility, recognition, publications
- 3. *Improved performances*: time and labour efficiency, intellectual integration and stimulation;
- 4. *Capacity-building*: gaining experience, training researchers, building networks

In order to produce the results which will allow us to critically analyze the limitations of the DKN design concept (Part 4 of this report), we will seek to obtain through our case studies a better empirical understanding of the supposedly direct relationship postulated here between “brain gain” on the one hand, and our efforts to improve the dynamics of social capital formation through computer augmenting the quality of DKN interactions on the other hand.

3.4.) Implementing the model

<table>
<thead>
<tr>
<th>Partner</th>
<th>Task</th>
<th>Expected results</th>
</tr>
</thead>
<tbody>
<tr>
<td>VECAM : NGO advocate of « Open Source” Solutions</td>
<td>Publication and cooperative writing software ; listserv and forum</td>
<td>WIKINI Message and SPIP publication archives for studying document mediated interactions</td>
</tr>
<tr>
<td>Topica Tech</td>
<td>Project management software</td>
<td>« Swift trust » procedures for confidence building</td>
</tr>
<tr>
<td>Université Technologique de Troyes (UTT)</td>
<td>Software for defining and updating ontologies</td>
<td>Ontologies as a device for managing cognitive conflicts</td>
</tr>
<tr>
<td>LIMSI – CNRS</td>
<td>Document classification software, Graph analytical techniques for measuring the semantic coherence of a corpus</td>
<td>Classification as a sense-making technique, Assistance in building a commun language</td>
</tr>
<tr>
<td>Colciencias (Colombia) and LIMSI</td>
<td>Will implement the software and insure the coherence of document mediated interactions in the DKN context</td>
<td></td>
</tr>
<tr>
<td>IRD and LIMSI</td>
<td>Are working on the relationship between brain gain and social capital formation</td>
<td></td>
</tr>
</tbody>
</table>
II.) Experimenting Software (October – December 2005)

1.) From the beginning of October to the end of December 2005, the members of the DKN project team worked on:

1. Setting up and testing the two planks of the DKN platform, the WIKINI and SPIP document management procedures (Annex 1, the VECAM progress report);

2. the “plug-in coherence problem”. As we said above, members of scientific and technical diaspora will need to understand how to use the DKN “plug-ins” for computer augmenting awareness, confidence, etc. The October to December period was used to empirically examine the conditions for building that understanding by getting the members of the DKN project team to test the software applications. Results of these tests are described in:
   - annex 1: the VECAM progress report
   - annex 2: the LIMSI and Colciencias progress report on the use of Calliope
   - annex 3: the UTT progress report on the use of Agorae
   - annex 4: the Topica-Tech progress report on the use of PIC

Establishing the case studies for testing the DKN application:

3. Annex 5: written by Ximena Castro-Sardi; Bogota Colombia.
   - Ximena has been working with the moderator of the Network of Colombian Students Abroad (REPCE) in order to prepare a “show-me” type of demonstration of the DKN platform.
   - The moderator will not personally use the DKN tools but will evaluate the results obtained by Ximena in order to establish their relevance for structuring exchanges over the REPCE Network. The goal of this network is to discuss and promote concrete brain gain and return projects.
     - Examples of brain gain projects are two interesting mobilization scenarios around:
       1. the fumigation debate within the political forum of the REPCE which ended with the collective drafting of a statement addressed to the Ministry of the Environment in Colombia and
       2. the “Return to Colombia group” which has 90 members and is moving towards concrete projects: A legislative project to provide incentives for professionals to return as well as the creation of the “Return to Colombia Foundation”.
     - In the framework of the DKN Project, the brain gain dynamics generated through the REPCE are particularly interesting, given that there are institutional (governmental) actors interacting with grassroots initiatives through electronic media (yahoo groups, blogs).
     - The question which Ximena will be addressing is that of knowing if, in the opinion of the moderator, these brain gain dynamics can be enhanced through the use of tools available through the DKN platform.
4. Oriane Matte-Talliez has joined the DKN project team and is responsible for managing four case studies in France. These case studies will be coordinated with Ximena in Colombia. They aim at using the DKN platform and plug-ins in a way which will allow us to gain an empirical understanding of the relationship between brain gain and our efforts to computer support the dynamics of social capital formation.

5. The case studies will serve for testing the usefulness of the DKN interaction space for:
   - debating proposals and interpreting needs for collective action,
   - exchanging information and determining its relevancy,
   - and defining collective procedures (milestones, information processing protocols, task responsibilities) for doing things together.

Our assumption is that these are the social processes through which social capital is built and, if they are computer supported correctly, then we will observe:

- **Hypothesis 1**: A better access of Colombian scientific and technical networks to resources of their diaspora members in France. Testing this hypothesis will be done through a task assignment methodology. A member of the Colombian scientific and technical diaspora in France will have as a task over a two-month trial period, from the beginning of March to the end of April 2006, to **write a collaboration project** of interest to both his host laboratory in France and to a network of researchers in Columbia.
  - *Writing collaboration projects is seen as being a brain gain technique for accessing resources in the host countries of diaspora members.*

- **Hypothesis 2**: a general increase in personal benefits should result from investing in building and maintaining strong interpersonal relationships between researchers working in both France and Colombia. We know that this type of relationship already exists, particularly between laboratories who already have research programs underway together in France and Colombia. These programs are a source of co-publications for the researchers involved. The second task assignment will consist in building upon these relationships in order to see if the DKN platform can prove its usefulness for increasing personal benefits by **preparing a co-publication**.
  - *Writing a co-publication is seen as being a brain gain outcome confirming the benefits of taking part in diaspora efforts to build collaboration networks between host and home countries.*

- **Hypothesis 3**: working as a gatekeeper between Colombia and France should be experienced as a source of improved performances through intellectual integration and stimulation. In order to test this hypothesis, the third task assignment is that of **organizing the venue** of a Colombian researcher to France, in order to give a talk and/or engage in teaching for a limited period of time in France.
  - *Organizing exchanges of researchers between Colombia and France is seen as being a brain gain technique for improving individual performances through direct contact with people who have recognized knowledge and skills in a specific research area.*

- **Hypothesis 4**: investments in social capital building should also prove useful for capacity building. The forth task assignment is that of **organizing a workshop** for French and Colombian researchers.
Workshops are network building techniques which are capacity building in the sense of allowing people to get to know one another. They also provide their organizers with visibility and recognition in a brain gain context.

2.) Summary of the technical annexes

Over the period October – December 2005, and in order to allow for immediate access to a document-mediated interaction space, the DKN project appeared on the Internet site of the I-Twinning initiative. VECAM leads “I-Twinning” which is financed by the European Community and which brings together more than 40 associations working on issues of common interest in Europe and Latin America. We followed the VECAM lead and built the DKN document mediated space using SPIP and WIKINI technologies, as shown above in Figure 2. All the technical work carried out over the period from October to December 2005 had for objective to test the information processing model illustrated in that Figure.

A.) The SPIP publication space

The SPIP publication space was opened through I-Twinning offered the following functions to the DKN project:

- Membership management (by the project coordinator)
- An information page on the DKN project to explain its goals and objectives to the larger I-Twinning audience as well as to internauts arriving on the site by navigating the Web;
- Tools allowing a project moderator to supervise the editorial content of information published on the site and take action if required;
- On-line document publishing facilities for members of the DKN space (document updates, modifications, suppressions)
- File creation facilities (for members)
- WIKINI access (for members)
- Listserv facilities through dkn@le-forum.net (for members)

1.1. In the wider I-Twinning project, documents published on the I-Twinning site are distinguished by document type using the following categories: “studies”, “articles”, “questions for debate”, “content summaries” (of chosen articles or books), “bibliographic references”, “institutional reading” and “background texts”. No “document type” classification was used during the DKN experiment.

1.2. Members of the DKN team were left total freedom to decide

- the types of documents they wanted to publish,
- who they would allow to access those documents (general public, or just the project team)
- and how they would use the file management service to produce editorial coherence.

The information processing model shown in Figure 2 suggests the need for adopting metadata, lexical, ontological and classification rules for managing the flow of documents filed in a SPIP or WIKINI space. The decision to allow DKN members complete freedom to work
without rules in the SPIP publishing space was considered as being a way of confirming (or not) this hypothesis. The following file structure was produced on the basis of individual decisions to make documents available through the SPIP space:

1.3. As the Figure 3 shows, Mathilde de Saint Leger, Frédéric Sultan and Thomas Hirsh used the SPIP publication space for informing DKN members about how to access and use software applications. (Mathilde’s Calliope example will be developed below). Jean-Baptiste Meyer published general information on the Diaspora question and considered that it should be open for consultation by the general public. Ximena published information on the DKN project in Spanish for the general public and opened two work spaces for use by members of the project only. Bill Turner did the same, opening a “project-only” work space for discussion of material on the LIMSI web site but, at the same time, giving general access to other LIMSI research results produced in connection with the project.

1.4. SPIP offers a facility which is technically easy to use. The members of the DKN project had no trouble mastering the file management and publishing techniques which were made available to them. However, guidelines are needed to make optimum use of the SPIP space in order to collectively do things together.

<table>
<thead>
<tr>
<th>Nom</th>
<th>Taille</th>
<th>Créé le</th>
<th>Par</th>
<th>Visibilité</th>
<th>Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>DKN - Documentos en español</td>
<td>96 Ko</td>
<td>24-03-2005</td>
<td>Castro Ximena</td>
<td>Tout public</td>
<td></td>
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<tr>
<td>Aqui se encuentran los documentos descritivos del proyecto en español</td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>Info diasporas</td>
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<td>21-11-2005</td>
<td>Meyer Jean-Baptiste</td>
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<tr>
<td>Informations sur les diasporas scientifiques utiles pour le projet</td>
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<td></td>
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<tr>
<td>LIMSI-CNRS</td>
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<td>22-03-2005</td>
<td>Turner Bill</td>
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<td>dossier des instructions pour utilisation de PIC</td>
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<tr>
<td>Powerpoint Presentations at LIMSI September 2005</td>
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<td>29-09-2005</td>
<td>Turner Bill</td>
<td>Projet seulement</td>
<td></td>
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<tr>
<td>Publication des recherches en cours par les différentes équipes participantes au projet DKN</td>
<td></td>
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<tr>
<td>Project Progress Reports / Rapports de progrès</td>
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<td>05-10-2005</td>
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<td>Progress reports produced by all members of the team</td>
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<tr>
<td>Similaire Mus-Paris Theoro Sept 2005</td>
<td>15 K b</td>
<td>29-09-2005</td>
<td>Sultan Frédéric</td>
<td>Tout public</td>
<td></td>
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<tr>
<td>Traitements Calliope</td>
<td>2011 Ko</td>
<td>22-11-2005</td>
<td>de saint leger mathilde</td>
<td>Projet seulement</td>
<td></td>
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<tr>
<td>UTT</td>
<td>6 Ko</td>
<td>02-10-2005</td>
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<td>Working documents / Documents de travail</td>
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<tr>
<td>Working documents produced by all members of the team</td>
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</tr>
<tr>
<td>LIMSI Web Site</td>
<td>260 Ko</td>
<td>10-11-2005</td>
<td>Turner Bill</td>
<td>Projet seulement</td>
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</tr>
<tr>
<td>This document will shortly appear on the LIMSI Web site as publicity for the DKN project</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Just a Mo</td>
<td>1049 Ko</td>
<td>05-12-2005</td>
<td>Sultan Frédéric</td>
<td>Tout public</td>
<td></td>
</tr>
</tbody>
</table>

Figure 3: the file structure of the SPIP publication space produced on the basis of individual decisions to make documents available through the SPIP space
1.5. As Figure 3 shows, the documents published in the SPIP space were very heterogeneous in nature and consequently users of that space were confronted with the problem of determining their information value for the project. The difficulty of such an evaluation is reduced when a “document type” classification is used. The DKN project will use the I-Twinning classification of documents to distinguish between “studies”, “articles”, “questions for debate”, “content summaries” (of chosen articles or books), “bibliographic references”, “institutional reading” and “background texts”.

1.6. A strategy for extracting metadata from document flows will have to be developed. This became particularly clear in the case study that Ximena Castro-Sardi is carrying out in the REPCE context. The crop fumigation file that she published as a “working document” in the SPIP space, and which was processed by Calliope as we will see below, contains a great deal of information allowing for an in-depth exploration of relationships between the Colombian institutional context and the Network of Colombian Students Abroad. In order to explore these relationships, lists of authors, the date of their contribution, the sources they cite as well as the institutions involved need to be identified and coded. For example, here is a message of considerable interest for developing a strategy of metadata construction for computer supporting document mediated interactions:

MESSAGE 6

De:: "Susana Muhamad" <Susana@...>
Fecha:: vie abr 22, 2005 10:55 am
Asunto:: RE:Medio Ambiente [Red] POR favor hagamos algo... esto no podemos permitirlo!!
Susana@...

Hola a todos,
Aqui algunos actores que estan participando en el debate, creo que es interesante leer estas multiples opiniones y empezar a entender la complejidad del problema para pensar en soluciones. La proxima semana envio mi propia opinion después de haber consultado las fuentes. Seria interesante tambien escuchar la opinion de otros.

Saludes

Susana Muhamad

RÉFÉRENCES

ONG ET MÉDIAS:

Informacion obtenida a traves de: Centro de Medios Independientes.

http://www.censat.org/: Capitulo Colombiano de Friends of the Earth International


http://www.indepaz.org.co/xsys/index.php?option=com_content&task=view&id=324&Itemid=52 : Organizacion no gubernamental, enmarca el debate desde el punto de vista del conflicto y pide en su pagina que se socialize el contenido del articulo.

Grupos Indigenas
As we can see from this example, a decision to work with a particular archive or document set can be the starting point for a great many questions about the metadata needed for adequately computer supporting document mediated interactions. One of the goals Ximena will have in working on a “show-me” project for the REPCE moderator will be to develop guidelines for dealing with these questions.

1.7. The SPIP publishing space distinguishes between “project only” documents and “general public” documents (see Figure 3). When documents are published specifically for use by the project team only, this act of making a document available for others has a very precise meaning: It needs to be understood as an invitation to both deepen and enlarge the scope of document-mediated interactions.

• The reason lies in the example above. As we saw, a document can be the starting point for a great many questions.
  • Because it inevitably points to information that lies outside the immediate context of a collective action, it feeds the on-going debate about the scope of a project (what actors should be included, what subjects should be addressed, what information is required to support a “brain gain” activity);
  • Because a document informs people of what others are doing, it helps to clarify what is practically possible and what should be considered as an attempt to simply “fly an idea”. Document exchanges help to anchor ideas in the reality of available resources, time constraints and opportunities.
  • Because people have misunderstandings and need to clarify or get help for doing things together, documents can serve that purpose as well.

• In other words, and as we’ve said repeatedly, document mediated interactions serve to increase a group’s awareness about where it is collectively in terms of doing things together. The borderline between “project only” and “general public” publications consequently has to be managed with care. Publishing a document in a group’s “private space” is done with the intention of feeding the dynamics of on-going
collective activity. But this point was not clearly perceived in the trail period of the DKN project from October to December.

1.8. No guarantee exists that the intention to feed document mediated interaction dynamics will meet with success. To the contrary, the literature shows that the “pull approach” to improving group awareness of interaction opportunities is often deficient.

- It requires that people invest time and effort in accessing a publication space, in locating newly published documents and in processing them with, in mind, the types of questions set out above.

- A great many reasons explain why this type of investment is not made, most of them to do with time constraints, personal motivation, suspicion about the inefficiency of document-mediated interactions when compared with telephone-mediated or face-to-face interactions, etc.

- VECAM is developing the concept of a “user advocate” of a SPIP publishing space as a way of responding to these general criticisms as we will see below.

However, at a more technical level, librarians have long recognized this problem and have developed ontologies, indexing, classification and metadata construction rules for facilitating access to an information source and encouraging its use.

- The DKN project is building upon these recognized librarian practices as we will see below when the plug-in applications are presented.

- That said, in terms of the experience gained by the DKN team when using the SPIP publication space without any rules, the conclusion is without ambiguity.
  - Complete editorial freedom is counter-productive in terms of implementing a “pull approach” to document mediated awareness.
  - The semantics of a publication space is not sufficiently defined by the commentary attached to a folder which describes the content of documents that will be found in that folder (see Figure 3). Ontologies, indexing, classification and metadata construction rules are needed to specify those semantics.

1.9. Document mediated awareness is achieved through two types of technologies: the “pull” kind we’ve been talking about above and the “push” or “broadcast” kind which we will talk about here.

- The push approach is intrusive in the sense that a message sent by a registered DKN member to a Bulletin Board or to a Listserv is automatically delivered to all the other registered DKN members. During the trial period, only the dkn@le-forum.net listserv was used. Members of the DKN group received the newsletter of the I-Twinning project. For the case studies, the content of the newsletter will be limited to information specifically concerning the DKN project.

- Group practice consisted of simultaneously using the push and pull techniques: when a document was published in the SPIP space or work done in the WIKINI space, the
listserv was used to alert members to the need of making an effort to go either the SPIP or the WIKINI spaces in order to see what had been added or changed. While some members of the group had no problem in complying with this general practice, others “dropped out”.

- On several occasions the project leader was obliged to send an Email directly to a partner, in order to ask them to answer questions which had been signalled on the listserv and formulated through the WIKINI. Its in response to situations such as this that VECAM’s work on the notion of “user advocacy” takes on meaning. This work focuses on the question of finding a “juste milieu” between the “intrusiveness” of broadcasting techniques and the “non-use” of pull techniques.

**B.) The WIKINI**

WIKINI is a technology for collectively writing, editing (suppression, modify) and organizing the content of web pages. The Web page is directly accessible by all members of the group at the same time so people in distant locations can exchange ideas and information “live”, interacting directly through the WIKINI space. The technology is simple to use and the members of the DKN team encountered no real technical problems in making use of the application.

As with the SPIP space, people were left free for the trial period to open a Web page, name it and work through it if they wanted to. No rules were set out initially, the goal being to see how the members of the DKN team would spontaneously use the WIKINI. As Figure 4 below shows:

- All the software designers in the project opened a “FAQ page” – Frequently Asked Questions – in order to deal with bugs and general problems of comprehension and implementation when using the DKN platform. These pages proved to be extremely useful in building up the foundations of a collective practice because people learned through the FAQ what other people were trying to do with the software, the problems they encountered and saw at the same time the suggestions of designers as to how to overcome them.
- Navigational links were also established with documents published in the SPIP publication space so members of the DKN group could go back and forth between a message archive (the WIKINI) and a document archive (the SPIP space).
- Useful pages of common interest to members of the group were identified (for example, the list of instructions for using the WIKINI)
- And, finally, a “question in debate” page was opened for organizing on-going collective interactions.
Diaspora Knowledge Network

C'est votre première fois sur le wiki ? Consultez le manuel wiki / Es la primera vez que utiliza WIKI? Consulte el Manual Wiki

Cette page est la page principale du wiki du projet DKN. On y trouve les liens vers les outils de communication du projet DKN et des informations d'actualité et des informations pratiques. Le Menu de gauche est un sommaire des principales rubriques du site wiki. Pour arriver directement sur cette page, enregistrez-la dans vos favoris.

Le wiki DKN est un outil du groupe de travail dédié à collecter les informations utiles au fonctionnement du projet. Il est utilisé pour réunir et documenter l'usage des outils de communication par les différents membres du groupe. C'est un espace de travail collaboratif destiné aux personnes travaillant sur le projet. Le wiki est modéré par VECAM.

Une liste de discussion est ouverte pour faciliter l'échange d'information entre utilisateurs qui participent à cette recherche (voir ci-dessous, Organisation).

Pour vous déplacer dans l'espace DKN, utiliser les liens ci-dessous dans cette page, au cours du Menu, dans la colonne de gauche.

Bon travail à tous les
CH et PS

ORGANISATION

- Lien vers "voir le projet DKN sur l'espace transmages" (partie publique)
- Lien vers l'espace projet DKN (liste des membres et des documents du projet) : A COMPLETER
- Lien vers la liste de discussion DKN dkn[at]le-forum.net et vers ses archives http://le-forum.net/www/info/dkn
- Lien vers AGORAIE http://tech-web-n2.ust.fr/dkn/fr/accueil.php
- Lien vers PIC http://paher.ust.fr/8080/codes/index_feed.html

CONTENUS

Contenus généraux:
- Pour en savoir plus sur le projet DKN : Présentation du projet
- Séminaire de lancement Paris/Ufesco
- Rencontre au Lame (01/12/2005) Récupération du rapport d'étape Décembre A COMPLETER

Contenus spécifiques:
- Traitements et résultats de Calloipe

PROCESSUS DE CONSTITUTION DU GROUPE ET D'ASSIMIATION DES OUTILS

- FAQ pour plateforme Vecam
- FAQ pour PIC
- FAQ pour AGORAIE
- Règles de fonctionnement du groupe DKN

ANALYSE

- Concepts en Débat

Pages utiles
- Règles de formatage
- Bac à sable

Figure 4 : The WIKINI organization of the DKN project
The WIKINI provides a concrete illustration of VECAM’s “user advocate” principle. Claude Henry and Fred Sultan have built up the “Home Page” of the DKN project by developing a set of categories for “making visible” individual contributions to group dynamics.

- A user advocate makes relationships visible which otherwise would remain tacit and not be explicitly analyzed and debated.

- As Figure 4 shows, the categories used by Claude and Fred for focusing attention on these relationships deal with issues of organization, content, the role of software in group formation and analytical problems implied by the use of specific concepts (such as document-mediated awareness, confidence building, etc.).

We can summarize the central conclusions of Annex 1 written by VECAM in the following way:

- First, the awareness of opportunities for working cognitively, organizationally and socio-technically together at a distance will depend upon the types of investments made by a human mediator in supporting SPIP and WIKINI mediated interactions;

- Second, the form and direction of these investments will depend to a large extent upon the computer support tools available (information processing options and plug-ins), but not entirely. By participating actively in the debates and discussions about where a project should go and how to get there, the user advocate of document-mediated interactions is able to evaluate critically the usefulness of available tools and make suggestions as to how to reconfigure a group’s socio-technical environment by suppressing some, adding and/or improving others.

- The user advocate’s role is to help the group work reflexively by “making visible” the connections which exist between the cognitive, organizational and socio-technical issues at stake in building up a group’s social capital. Interpretations of relationships made visible are offered as a basis for group discussion and debate on how to improve its collective action.

C.) The LIMSI and Colciencias progress report on the use of Calliope

The goal of this joint project was to install Calliope for use in Colciencias and test its usefulness for structuring the REPCE fumigation file. As explained above, the data was published in the SPIP publication space as were the different files serving for the installation of Calliope. Figure 5 shows the file structure created for this experience:
Two Web pages were opened using the WIKINI application:

- Figure 6: a FAQ that served Ximena and Mathilde in their on-going dialogue about how to overcome the problems encountered when installing and using Calliope;

- Figure 7: data processing: building and validating a lexicon

The experience has been successful. Calliope has been installed in Colciencias. The necessary steps have been taken in order to allow processing of documents written in Spanish. Calliope’s goal is to sound a document flow, automatically extract from it the words serving to identify the subject matter structuring on-going interactions, identify the underlying word association pattern and follow how that structure of word associations evolves over time. The hypothesis is that changes in that structure highlight issues which can be used to “tell the story” of evolving relationships between the people involved in the document-mediated interactions. Ximena will test this hypothesis in the RECPE case study. She is currently building a suitable lexicon for representing the subject matter of the fumigation debate, which is a prerequisite for using the Calliope software.
Figure 6: a FAQ for dealing with problems and misunderstandings encountered during the installation and use of Calliope

Figure 7: data processing: building and validating a lexicon
D.) The UTT progress report on the use of Agorae

The Calliope software uses natural language processing techniques to extract from document flows appropriate word lists for representing the subject matter under discussion in on-going collective interactions. The goal of the AGORAE software is that of representing the conceptual content of a document flow. The link between the two applications lies in the fact that words point to concepts but a decision has to be taken establishing the relationship between the two. These are ontological decisions: words designate objects which are similar to one another given the properties attributed to a concept. For example, in the “DKN-MAP” that Jean-Pierre Cahier constructed for use by members of the DKN team, he suggested that the Agorae concept be specified in the following manner:

2- Potential DKN Toolkit Components
   A general approach: towards software building blocks of the DKN platform

   Agorae
   Features
   Agorae principles and functions
   Comparing the Agorae tool with Calliope and PIC
   Practice
   How to build an hypertopic map: Best practices and methods
   Agorae users documentation
   Applications and Cases studies
   Technical support
   The present DKN Agorae document map

As we can see in this example, “AGORAE” takes on meaning in the DKN context because:
• it refers to a “Toolkit Component” of the DKN project,
• has a set of specific properties and functions,
• is different to the other software plug-ins used in the project (Calliope and PIC)
• and implies specific forms of use and specific support needs.

This analytical framework can, in theory, be applied when processing the documents exchanged through the WIKINI space. As we saw above in Figure 4, an AGORAE – FAQ was opened and members of the DKN project team were invited to interact around the difficulties they had in using the software plug-in. The experiment aimed at using these exchanges as a means of clarifying each of the four points above:

• What exactly is a “toolkit component”? What cognitive, organisational and socio-technical issues need to be addressed when software artefacts are used as a means of forging social capital?
• How did the members of the DKN team perceive the specific properties and functions of the AGORAE software? Could a user advocate of document-mediated interactions use the “AGORAE DKN-Map” as a means of making visible conceptual relationships emerging out of the “bottom-up” exchanges that merited group attention and discussion?
• Was the DKN-Map of help to a user advocate in resolving what was called above the plug-in coherence problem? PIC is a plug-in used in the project for reinforcing the social mechanisms of confidence building. Calliope is a tool for building a common
vocabulary and contributing to collective sense-making. Agorae helps in managing cognitive conflicts generated by diverging interpretations and ontological orientations. To what extent was a user advocate able to make clear this specific function of AGORAE?

- What were the specific problems encountered in using the application and how were they resolved?

The experiment showed the limitations of the DKN-Map for answering these various questions. Annex 3 analyses in detail the reasons for these limitations and makes a series of proposals aimed at custom-tailoring the design of the AGORAE software for the needs of the DKN Project.

E.) The Topica-TECH progress report on the use of PIC

Calliope, AGORAE and PIC plug-in applications are designed to offer a user advocate specific functions which have been shown in the specialized literature to be needed when doing things together at a distance. Of particular importance in this literature is the need to install confidence building mechanisms as a prerequisite for forging a group’s social capital. PIC serves this end in the DKN project. However, over the trial period, the software proved to be too rich for the needs of the DKN group. PIC was designed as a management device for industrial projects; the DKN project only requires three of the functions associated with this type of management:

- **Workflow definition**: we assume that each of the task assignments outlined above in section II.1.5 can be broken down into a set of specific actions which need to be done by a specific date (milestone) in order to produce the deliverables required for a project to take form (i.e. the intermediary objects on the way to producing a co-publication, a workshop, the venue of a colleague, or a project outline);

- **Information flow management**: we assume as well that organizing this workflow implies formal constraints with respect to who has to be informed and who has to be consulted on measures to be taken should the workflow break down;

- **“Thing to do”**: finally because members of a group are designated in a project as people that have to be informed or as people that have to be consulted, they have “things to do”. When “informed” of something or consulted on a decision to be taken, people are expected to react.

In order for document-mediated interactions to produce social capital, confidence has to exist in the possibility for people to share out a set of tasks, set up milestones and produce deliverables in connection with those tasks. At the same time, when they are informed of a situation or consulted on things to do, people anticipate upon obtaining a positive, constructive reaction in return. As annex 4 shows, PIC is currently being redesigned in order to provide user advocates with assistance in making these confidence-building obligations visible for members of a group.
III.) User evaluations

1.) Socio-technical environment

As we’ve seen above, the test of the DKN information processing model (Figure 2) carried out over the period from October to December 2005 by the members of the DKN project team produced a series of concrete proposals for implementing the case studies. In order to set these case studies up, the following activities will take place from the beginning of January to the end of February 2006:

- VECAM is building a stand-alone DKN application.

  - The case studies will consequently be carried out in a specifically dedicated DKN Internet space registered at: http://www.dk-network.org/.
  - All the SPIP and WIKINI functions experimented during the trial period through the I-Twinning space will be kept, however:
    - The DKN space will have its own specific newsletter and
    - An archiving function according to document type (“studies”, “articles”, “questions for debate”, “content summaries” (of chosen articles or books), “bibliographic references”, “institutional reading” and “background texts”).
  - Users of the DKN platform will access all the system functions and plug-ins through the DKN home-page which is being designed according to the model shown in Figure 4 above.

- Mathilde de Saint Leger (LIMSI) and Ximena Castro-Sardi (Colciencias) are finishing building the working environment needed for using Calliope to process the document flows generated by exchanges over the Network of Colombian Students Abroad. Ximena is currently working with the moderator of this project and will provide us with a detailed description of the “show me” demonstration of the DKN platform that they have decided upon for the end of February.

- Both Jean-Pierre Cahier of UTT and Thomas Hirsch of Topica-Tech are implementing the software improvements described in their mid-term progress reports (Annexes 3 and 4). All three plug-ins – Calliope, AGORAE and PIC – will be accessible by the end of February through the DKN Home Page as mentioned above.
2.) Mobilisation scenario used in organizing the Case Studies

- In terms of the DKN project, a member of the Colombian scientific and technical diaspora is defined as a gatekeeper, that is, as a person located at the interface of two networks, one in France and one in Colombia.

- This gatekeeper will be an active agent of “brain gain” to the extent he is able to mobilize resources in his French network behind a project which he undertakes in cooperation with his Colombian network.
  
  - Some examples of brain gain projects knitting together networks are co-publishing, researcher exchange and lecture programs, joint project proposals and joint workshops.

- Four members of the Colombian scientific and technical diaspora community in Montpellier France have accepted the invitation of Oriane Matte-Talliez to test the usefulness of the DKN software for carrying out these brain gain activities. That is,
  
  - They have working relationships with a Colombian network of researchers and will explore with members of that network the conditions of co-publishing, organizing a workshop or the venue of a researcher, or of writing a joint project proposal.

  - They will use the DKN platform in order to carry out each task assignment.
    
    - They have agreed to publish or download into the SPIP space, documents setting out what they consider to be the cognitive, organizational and socio-technical constraints of each task.

    - They will use the WIKINI to interact with their colleagues both in France and Colombia in order to
      
      - define the actions that have to be carried out, the milestones that have to be met and the deliverables that have to be produced;
      - the information and decision circuits defining the “things to do” list for the different members of the group

    - Use PIC in order to make visible the workflow of each project, AGORAE as a method of making visible what is cognitively at stake in carrying out each project, and Calliope as a means of building up a common language for interacting efficiently together in the project space.

Interviewing:

- Bill Turner and Oriane will spend 2 hours interviewing each of the four project leaders individually. The goal of this initial contact is to understand how they see the cognitive, organizational and socio-technical issues at stake in each
project, as well as to observe how they work with their French and Colombian networks before they are given the DKN tools.

- The project leaders will then take part in a day’s training program during which time the designers of the DKN software and plug-ins will present them with each tool and provide “hands-on” help in using it.

- Bill Turner and Oriane will then observe how each project leader launches his or her project with the DKN Toolkit. The goal here is to identify and describe the difficulties experienced by the users when “taking up” the tools for the first time. After two months, at the end of April, a second session will be organized in order to compare performances and get reactions on ease of use, the “plug-in coherence problem” mentioned above and so forth. Over this two month trial period, members of the DKN project team will be available for specific problems, but we will continue with the FAQ register on the WIKINI as well.

- The project will end with a group discussion of the experience bringing together once again designers and users of the DKN platform.

**Scientific evaluation**

In order to ensure that incentives remain high, we will actively support members of the Colombian scientific and technical diaspora to carry through to the end their specific projects. For example, we will help them seek funding for organizing a Colombian-French workshop, the venue of a researcher, etc. provided that these project leaders can concretely show that their French and Colombian Networks actually support their idea.

Our goal here is to intersect with the concerns of Jean-Baptiste Meyer of the IRD, whose goal in the project is to better understand incentives leading members of the scientific and technical diaspora to get involved in brain gain projects for their home country.

**IV.) Identifying the Design Limitations of the DKN project**

The next progress report will be produced for May 2006. It will use the results of the user study in order to address the question of the DKN project’s design limitations.