MAX PLANCK
digital library

Concept for a community platform - MPDL CoLab

MAX-PLANCK-GESELLSCHAFT

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Revision History

Version	Date	Author	Comments
0.1	26.06.2007	UTS	Adapted initial concept for public release, separated appendices (wiki comparison, development phases)
0.2	28.06.2007	UTS	Final wording

Referenced and related documents:
Title, Filename, Path

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1 Introduction

Networking has become integral part of the activities of any frequent internet user, be it for private or scholarly benefit. Moreover, the boundaries between technologies supporting data exchange, knowledge exchange and social activity are fluid in any cyberspace, including virtual communities in the socalled eScience- or Cyberinfrastructure.

The MPDL is related to networking in several dimensions: As exemplary organisational unit, its strategical development and setting within the MPG relies on solid and well-established communication channels with the Max-Planck-Institutes, its primary target groups. As newly funded organisational unit, with ambitious projects running both in information provision as well as in research and development, the knowledge within the MPDL is based on individual contributions by its members, which are right in the phase of shaping a common vision on their aims, expertises and services, and therefore have multiple topics to exchange ideas on. As representative unit of the MPG, the MPDL is an important contact point for many organisations, institutions and projects for multiple issues in the context of digital library services for a research organisation. In this context, well-established relations as well as new contacts build an integral part of our daily activities.

Communities of practice[1], i.e. domain-specific communities of people who interact on a regular and informal basis, where knowledge building and knowledge transfer are considered as social activities, have been identified as one of an organisation's most versatile and dynamic knowledge resource and form the basis of an organization's ability to know and learn. To transform static information into dynamic knowledge, to make tacit know-how explicit, to address the dynamic aspect of knowing and learning, the voluntary participation of people, who are engaged in the process of creating, refining, communicating and using knowledge is crucial.

The MPDL considers the development of a living community as strategical asset for its impact within the MPG as well as in the international domain of supporting scientific life cyles. The MPDL CoLab should foster the cross-functional and cross-organisational cooperation and will increase the ability of the MPDL members to initiate and contribute to projects across organizational boundaries. Best practices can develop and be spread faster. Isolated and unknown knowledge pools are externalized, connected and can turn into self-organized knowledge networks.

The following concept depicts the motivation, aims and possible development stages of a community of practice within the MPDL (MPDL CoLab). Due to the history of this concept, the focus is based on needs and experiences gained within the eSciDoc project. Still, the basic ideas of the concept are valid for any other group within the MPDL. The learning curve of each individual member correlates to the creation and fostering of the "social capital" of the MPDL. By setting up a community, the individual development (i.e. personal and professional identity) can be embedded into the strategy of the MPDL as a knowledge organisation.

[1] Communities of practice are a special form of knowledge communities. The term originates in the works by Jean Lave and Etienne Wenger (Situated Learning: Legitimate peripheral participation. 1991). They elaborated a model of "situated learning" which proposes that learning involves a process of social engagement in a "community of practice". The following concept is based on their findings on developing and nurturing communities of practice.

2 Motivation (eSciDoc)

Within the eSciDoc project, one of the current MPDL activities, we identified an urgent need for improved exchange of knowledge and expertise - connecting the right people at the right time, with the right information. Research in the domain of eScience is yet in an experimental state, a lot of engaged people all over the world are brainstorming, sketching, auditing, prototyping, and trying to not miss the results and best practices of the project on time. Cooperation, exchange with interested partners, identifying valuable new research trends by discussing them openly and controversly is a critical factor to improve the project results and in fact, to convert the knowledge gained by the project into a critical asset for the MPDL as knowledge organisation.

In addition, the risk of creating information silos within the project has been identified. The ongoing documentation of explicit knowledge has mainly been driven by project-bound work packages and agreements with project partners. A pool of concepts, state-of-the-art reports, usage scenarios and software specification has been accumulated and documented. Although the documentation is gradually shared with interested projects in the domain and partly made public, a framework for social interaction to learn and share knowledge by interpersonal exchange is missing. We have built up competence in the area of digital libraries and eScience applications. Still, our competence is mainly built on one pillar, which are tangible documentation and tools. The second pillar of competence, implicit know-how and relationships, still need a social microstructure to support the process of interaction.

During the course of the project, the team has assembled valuable knowledge, both as explicit and documented knowledge as well as still hidden, unstructured and even unknown tacit knowledge. The intensive cooperation with the project partner FIZ Karlsruhe, pilots and other partners has lead to a common terminology and a shared pool of assumptions, ideas and visions on the eSciDoc project. Still, the exchange on project findings was a quite isolated process: the exchange on project findings and decisions very seldomly crossed the boundaries of the project team, the possibilities for team members to actively engage in communities of eScience domain were limited resp. not promoted. Synergies with other institutions/projects in the same domain (e.g. SUB Göttingen, TextGrid, Fedora, SURF Knowledge Network) are just about to be identified. Community-driven processes and discourses -powerful by its inherent acceptance by the community- have not been reached so far.

3 Aims for the MPDL CoLab

The MPDL CoLab should provide an organisational, technological and social framework for a self-organising community of practice in the domain of eScience[2]. It will support the individual members with a community background, where ideas can be discussed and reflected, knowledge can be shared, know-how can be transferred in face-to-face meetings and relationships for fostering the professional identity can be identified.

[2] In this context, we define eScience as an infrastructure (tools, services, people) to support scientific life cycles with the help of digital technologies.

In order to select the form, structure and system that will be most effective to support a knowledge community, we need a structure which is adequate to fulfil the needs of the community and to address the knowledge we have to share. The challenge is to provide mechanisms for sharing both tacit and explicit knowledge[3].

3.1 Share explicit knowledge

- Improve visibility of documented knowledge, such as data models, Metadata schemas, concepts, usage scenarios, use cases, architectural blue prints, etc.
- Improve documented explicit knowledge (i.e. clean-up text documents)
- Improve linkage of documented knowledge with ongoing discussions, annotations, comments
- Improve linkage of documented knowledge with other projects in the domain

3.2 Make tacit know-how explicit

For individuals, tacit knowledge means intuition, individual judgement, common sense, i.e. the ability to do something without being able to explain it. For communities, tacit knowledge develops over time in distinct practices and relationships that evolve from cooperative work. Thus, tacit knowledge can best be externalized and shared by interacting with others.

3.3 From individual knowledge representations to shared knowledge trees

Individuals have their own assumptions and ideas on solutions, artefacts, services, technologies. Some of them are shared in informal person-to-person meetings or domain expert meetings. The aim of the CoLab should be to provide space and time for discussions on basic and fundamental concepts, to be able to externalize individual ideas and assumptions, to be able to formulate personal assumptions within a brainstorming to come to commonly agreed “knowledge trees”, which can further be developed and re-defined.

[3] Explicit knowledge is already documented and can therefore be easily organized, distributed, managed and updated. Available explicit knowledge includes concepts, usage scenarios, use cases, data models, architectural designs, metadata profile, user requirements, presentations, wiki-notes. Tacit knowledge, such as know-how, understanding, mental models, individual representations, is not documented, people most often do not even realize they have it. To become aware of this know-how (tacit knowledge), people need a problem or issue to draw it out. This can be best accomplished by person-to-person meetings.

3.4 Connect interested people

The possibility to easily get in contact with other members of interest as well as the possibility to identify one's most interesting contacts might serve as first incentive for individual engagement and participation within the MPDL CoLab. Connecting members from different organizational units and projects (e.g. software development, system design, functional specifications, user support, libraries, public relations etc.) can support cross-functional knowledge exchange, which opens up the mind for new, innovative solutions.

3.5 Cultivate a group identity

By sharing similar goals and interests, by employing common practices, working with the same tools and using a common terminology, the community members gradually develop a common value system and thus a certain group identity. Group identities can serve as reflector for fostering one's individual professional identity within the domain. Positioning oneself within a community, being perceived as member with an individual professional opinion and expertise supports the sense of individual empowerment and accomplishing.

3.6 Cultivate cooperative "making sense of a field"

In any professional domain exist "black holes", unknown fields, which are just on the edge of being systematically perceived and analysed. Apart from individual approaches to tackle new and unknown domains, a cooperative approach of a community to perceive unknown domains fosters the learning process of the individual. By exchanging ideas, mind settings and assumptions on unknown areas, the community gets a facetted picture of the unknown domain, and each individual has a learning effect by reflecting on his own idea. Thus, the community serves as reflector for shaping ideas and as backend for controverse and open discussions.

4 Design principles for the MPDL CoLab

"They come together, they develop, they evolve, they disperse, according to the timing, the logic, the rhythms, and the social energy of their learning."[4]

Different to other more formal methods of knowledge management, living communities cannot be implemented as a project with a set timeline in a top-down approach. The members of the community are informally bound by what they do together and by what they have learned through their mutual engagement in these activities. They span organizational and hierarchical boundaries. Thus, MPDL CoLab will succeed if it turns over time into a self-organizing system.

Following underlying design principles have been adapted from Lave/Wenger, to be considered in the set up of any community of practice.

[4] Wenger 1997 http://www.co-i-l.com/coil/knowledge-garden/cop/lmi.shtml (last accessed 28 june 2007)

4.1 Sound balance between technology and culture

To enable an atmosphere of trust and voluntary engagement, where community can evolve along its intrinsic dynamics, an organizational and technological infrastructure is needed, that does not impede the processes of evolving and interaction, but rather recognizes, supports and leverages it. Too formalised structure of knowledge exchange lead to refusal, mediocrity and a mere sense of additional burden for each community member.

4.2 Provide awareness of people, topics and activities

By choosing appropriate tools, the MPDL CoLab should provide a quick overview of the members of the community, the topics they are related to and activities planned. The details of presentation of one's identity/expertise is up to each member. Due to the self-organizing principle, the community will control the interaction of users intrinsically.

4.3 Support interpersonal activities

Sharing tacit knowledge, such as individual insights or mind sets, is basically an interpersonal activity. Only during human interaction, people can build enough common context to overcome the sender-receiver problem. Most easily, tacit knowledge can be shared as individuals talk person-to-person about a specific problem or idea. This principle is especially valid for initiating newcomers to the domain, as a complement to providing documented knowledge.

Brainstorming, "unconferences[5]", face-to-face meetings support sharing individual assumptions, discussing them, and shape (controversial) ideas into solutions. Another activity to support interpersonal exchange are informal review meetings, where members alternate in presenting their current activity fields and explain their problems and solutions. Community members can provide feedback, and maybe come up with unusual solutions, especially if coming from another functional/organisational domain.

4.4 Intrinsic dynamic by changing participation levels

Different level of participation, due to different level of interest and commitment need to be considered in provision of tools and communication methods. The need for both public and private spaces might arise, to allow public conversation and one-to-one interaction.

The level of participation of each community member as well as the boundaries that hold the community together are strongly shaped by the sense of identity within the community. At the core of the community, experts working on the same questions will have a stronger sense of identity than interested members who join the community occasionally. Both sides are important as complementary input sources: the core represents the nucleus who shares a common identity and thus a common "inside" perspective. The boundaries provide unexpected or unconventional input

[5] See e.g. http://en.wikipedia.org/wiki/Unconference

from the “outside” perspective. In order to enable an open communication between “inside” and “outside” perspectives, the boundaries between core/active members, passive members and related communities are permeable.