

eDOC : a Collaboration Infrastructure to Manage Knowledge and Information on Nuclear Projects and Research Activities

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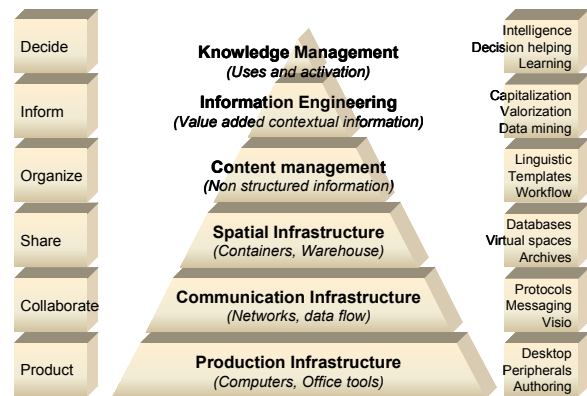
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Knowledge management issues

One of EU's strategic goals was launched at Lisbon 2000 European summit: becoming the most competitive knowledge economy by 2010. In the field of nuclear technologies, we know that capitalizing knowledge and acquired experience is vital to preserve nuclear equipments' safe use in the future.

Knowledge Management encompasses various domains of business practices, relating to human resources management, information, information technologies, strategy, and accounting. Facing such complex issues, especially in R&D organizations producing knowledge and innovations, knowledge management cannot only stand on a few organizational or technical solutions. All functions must be involved to achieve those strategic objectives: management must find realistic incentives and inscribe Knowledge Management as a core management objective (just as Quality Insurance has been). Human Resources departments and education institutes can benefit from new technologies to improve training methods. Research units have to launch knowledge capitalization projects to retrieve, save and transfer critical knowledge, technical skills and know-how. Scientific comities have to improve publication and evaluation processes.

Those tactical objectives cannot be achieved without an efficient, usable and robust corporate information system. An a-posteriori knowledge saving “fireman-type” action must be done in the case of major events (for example decision made to stop nuclear weapons experiments), but we must promote an on-going capitalization effort as well and embed KM into projects and activities management methods. This effort during the project and afterwards is implemented through a perennial information system. This information system should provide a wide range of services for scientific publications and patents management, corporate or local knowledge bases and document repositories, project management and collaboration, rich media authoring, etc.



Implementing virtual workspaces with eDOC

Research and engineering activities are more and more cross-organizations funded and net-like organized. However, communication and collaboration within and across groups stay “ad hoc” and mostly person-to-person using almost exclusively electronic messaging. There are not enough opportunities for teams to produce and share documents

easily, keep track of their progress and record design decisions or publish a common repository. Furthermore, it is very difficult for project managers to deal with security constraints as they must share but protect knowledge as well.

Before sharing information, teams have to share a common information management platform. But managing a large project is very difficult; so, obtaining and deploying such a platform should not be another problem to solve but a simple and quickly useful solution. In addition, costs and charges have to be compatible with a wide range of project management context and variability (in terms of finances, staff, security, language, etc.).

Facing those challenges, we have decided to launch the eDOC project. eDOC is the name of an application that aims to provide a large catalog of web-based tools to create and manage communication and collaboration portals for communities of practices. An eDOC workspace a web (customizable) portal look. This portal gives access to a first hierarchy of workspaces and subspaces only visible by users that have adequate rights. In those spaces, various natures of information may be uploaded for sharing or for co-authoring. Many workflows are available to send, review, annotate, submit for validation or publication. eDOC also provides a second hierarchy of publication headings used to enlarge the publication circle of certain kind of information or documents (project news, results, reporting charts, etc.).

eDOC includes a set of plug-in tools to create and manage newsletters, mailing lists, animate discussion forums, schedule tasks, facilitate reporting to the European Commission, track issues or bugs, share an agenda, etc. One of the core functionality is the members directory. It is very useful for large communities to know each others and may initiate a competencies or skills map.

We have begun this project by a large evaluation campaign. As we preferred an “on-the-shelf” solution, we have started with market leaders and challengers. The conclusions of the study were very interesting: first, it became obvious that the market and solutions were not consolidated and that it was very risky to bet on a particular product. Second: as we needed a large scale deployment at once to get per user reasonable licensing fees, global solutions were too expensive. Third, it was very difficult to collect upfront capital for two major reasons: 1/ top management is reluctant because of return on investment calculation impossibility and 2/ potential users can't or don't want to invest for others. So we had to find a low cost solution to be able to fund initial costs on our own budget!

At this point, open-source seemed to be the only way. After a study of various solutions and frameworks, we chose Zope Collaborative Portal Server open-source released by French company Nuxeo. This solution has very good fitness for purpose and appears to be easy to configure as long as we accept slicing data into more manageable but smaller project-centered units. After some hours of co-configuration and training, it's possible to delegate most functional administration to project



managers. We also provide documentation (both paper and multimedia) and assistance to users.

After a few months dedicated to build pilots and a sizable secured software and hardware setup, we are now in production phase. Some are using eDOC to constitute documentary repositories on the Intranet, some others to launch teams or research units portals (to replace more classical but much more difficult to maintain websites). But the most critical use-case is made by European cross-organizations collaborative research projects. eDOC platform is actually efficient to achieve knowledge management and knowledge dissemination objectives as assigned to project teams by the EC.

But the success of eDOC is partly due to the dynamism of some project managers and early adopters who have spent time to improve the solution. We want to address thanks to them!