

Presentation of Ingenium™, software tool for manage and share information and knowledge, and some applications in nuclear domain, with the CEA

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Principles

New technology allow the communication, exchange and sharing of many information. Search engine fit the profile of users more and more providing relevant document. But it's not enough to create a real collective thrust where everyone can express it's own point of view, to confront it with the others, to enrich it while laying out the evolution of the argument. Furthermore, we realize the over-abundance of information, the difficulty to operate it and the increasing enrichment of the immaterial capital which is made of knowledge and know-how of the firm's staff.

It's a very concrete and daily problem, in a lot of domain, everywhere we need information to act. The quality and relevance of founded solution contribute to the success of the firm or of the concerned group : how not to lose information, not to make again what is already done, not to waste time to find what exist, to share, to think with other, to lay out this thought and decision which ensue ?

In face of the several dimension of knowledge management **procedural** (organizational) , **cognitive** (power is in the capability to operate the information) and **instrumental** (software tool, linguistic search engine and network), we offer multiple answer : methological coaching and set a tool going, fitting best to requirement, individual and collective. Like AI, KM focuse thought management, but unlike AI, instead of trying to formalize a problem's resolution by the automation of a reasoning, we now look for providing to the operator the information he need to resolve himself the problem, individually or collectively. We so make the bet, determinedly, of the user's intelligence, relying on its own cognitive capacity to operate at best the provided information.

Ingenium™ software

Its on the above ideas that was build the Ingenium™ software, trying to answer to underlined requirement, ensuring employment easiness, share, subjectivity and relevance. Its inside Jean Michel Penalva's laboratory (CEA) that several prototype were processed , relying on internal project teams. Once the prototype and ideas validated, we decide to industrialize this approach, from which become Ingenium™ software and associated coaching. The Ingenium™ software is an intranet environment, real service integrated to the team work, which offer : **Collecting and storage** of document and laying out thought process by subjective and individual contribution, designed as "**knowledge element**". The knowledge base doesn't force neither hierarchy, nor key words, nor specific interrogating language. Access is distributed and scratched by Internet or Intranet with an usual browser and a standard viewer (Acrobat Reader™). **The idea is to find without classify !** The **access control** to the information and their protection, ensured by login and password (even encryption), structured

by group and level. Three principles hold up the software's realization : the maximal **learnability** for user, the **relevance** of answer, and the ability to give a **personal and subjective advice**.

Two use case

Nuclear : capitalization and sharing of knowledge. The CEA team of Saclay responsible of missions concerning some **nuclear** installations has decided to equip itself with Ingenium™. Composed of ten people, the team feed the base with documents and expert advice, making up an information base more and more complete. This base hold at one and the same time qualified document and enrichment associated to expertise and know-how of the contributors.

Non-nuclear : Assistance to Installation. The CEA CSN of Cadarache has decided also to equip itself with Ingenium™, for optimizing the management of information and knowledge required. Two items have got priority, shared with the installation team :

- ❑ The follow-up of the events constitutive of the installation life : incident, control or inspection visit, modification demand, and so on.
- ❑ Putting communally the statutory directive : map of « statutory alert » allowing an easy access to the new decree, to the technical prescription and to the experience of every one.

Made up of more than ten people, for the moment, the team feed the base with documents and advices, dedicated to following up the regulation and its application for the installation, as well as to following up the events and their treatment by the responsible people.

Conclusion

In terms of results, the experiences are a little bit too much recent to give definitive conclusion. Nevertheless, we can already say :

- ❑ KM require a managerial will and the users acceptance of this evolution of the collective behaviour mode.
- ❑ More we use Ingenium more obvious are the benefits.
- ❑ Unlike usual electronic document management software, the query doesn't claim specific competence, except knowledge on the concerned topic

Several level of using are allowed :

- ❑ from the most vanilla : no effort for classifying, no qualification to be associated to the documents, and so intuitive query because of natural language (search engine Spirit™ of Technologies SA) : we find without classifying !
- ❑ To the most sophisticated, operating specific and manual maps as dashboard or global knowledge repository, focusing a subtopic or specific finality.
- ❑ Through medium using, based on documents enriched by remarks and comments, or linked to other documents, composing graphs which allow to understand a collective reasoning, for instance.

This approach is now going out of nuclear world, for instance to aeronautics, by EADS and Eurocopter, as well as by Onera, by Saint Gobain Research, and so on. That show the quality and the interest of the CEA research works. Because, from a CEA's prototype transferred to Nautitia SA, we have now as industrial software tool.