TOWARDS A COMMON KNOWLEDGE BASE FOR NUCLEAR RESEARCH: A CHALLENGE FOR THE STAKEHOLDERS COMMUNITY AND FOR THE EC

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At the Lisbon 2000 summit, a strategic goal was proposed for the European Union: to become the most competitive knowledge-based society by 2010. In the particular case of nuclear fission technologies, this EC initiative has been widely accepted by the stakeholders community concerned. Most stakeholders, indeed, have expressed their interest in the construction of a common durable knowledge base that they could then exploit for their own purposes. In line with the European Research Area (ERA) concept, one of the aims of Euratom FP-6 (2003-2006) is then to set up the foundations of this knowledge base in co-operation with the nuclear fission community. To reach this ambitious goal, a nuclear knowledge management strategy is needed at the EU level. An EU strategy is proposed, focussing on the cycle "production–dissemination–exploitation" (PDE) of knowledge in the light of a possible internal market of research and innovation.

There are a number of economical (e.g. EU internal market) and political (e.g. EU enlargement) reasons that are pushing against the fragmentation of European research and driving towards a consensus around a common durable knowledge base, as a result of shared (governmental / industrial) resources and programmes. A holistic approach of the cycle "production / dissemination / exploitation" of knowledge (in short, the PDE cycle) is illustrated in Figure 1, referring explicitly to the role of the new FP-6 instruments (integrated projects /IP/ and networks of excellence /NoE/) in this system.

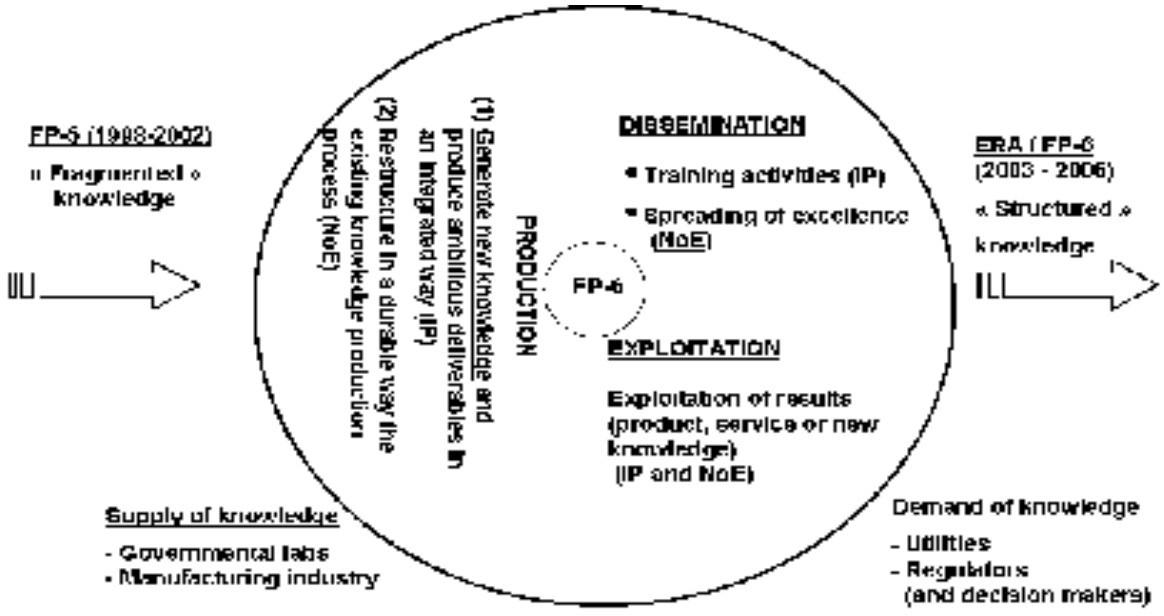

Figure 1: Knowledge cycle (production / dissemination / exploitation) for nuclear research

The construction of the common durable knowledge base requires the integration of all stakeholders, sharing 3 essential items: a set of common needs, a common vision or strategy, and common instruments. In nuclear fission research, the main stakeholders are actually: the research organisations (with mixed governmental / industrial funding), the manufacturing industry, the utilities and waste organisations, the regulatory bodies (or technical safety organisations /TSO/) and the academia. Community research, despite its relatively small size (1.9 % of GDP), can act as a driving force to bring all stakeholders together and have them participate in the supply and demand mechanisms of knowledge.

Amongst the stakeholders in the nuclear arena, there seems to be a wide consensus about the need for common research and about the Community instruments to conduct this research. To ensure full success of a European nuclear fission research policy, however, one component is still missing, namely: a clear common strategy on nuclear matters amongst all EU Member States.

The stakeholders are usually interested not only in knowledge (if so, they could simply buy it !) but also in know-how. In addition, they want to minimise the cost/benefit ratio of their research programmes ! These are some of the reasons why most of them intend to participate actively in the construction process of the common knowledge base, offering either research results or operational experience.

In conclusion, the above-discussed PDE cycle should be completed, taking into account the S/T and political/economic interests of the various stakeholders. In the particular case of nuclear fission research, the assembled system of knowledge and stakeholders is represented in Figure 2. Euratom FP-6 is located in the middle of the figure, but is actually just a catalyser, providing seed money to trigger the integration process. The greatest effort to make integration come true should actually come from the stakeholders organisations, represented around the central PDE cycle. Only if they bring resources (i.e. manpower, funding, etc) in the collective exercise and if they merge parts of their research programmes, can the integration become really effective and lead to the desired common durable knowledge base.

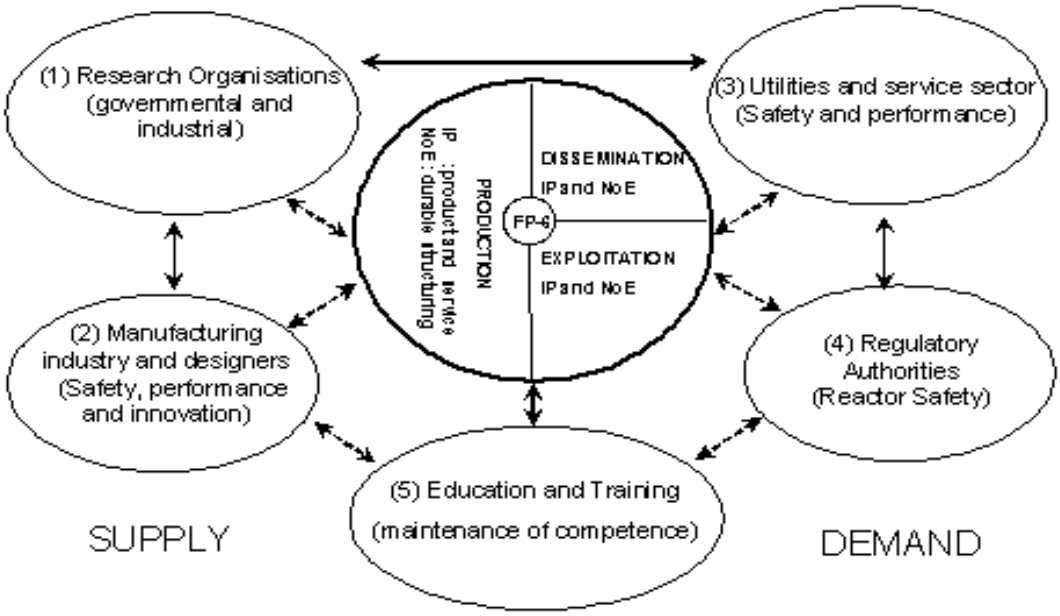

Figure 2 : Completed system (role of the stakeholders in the nuclear knowledge cycle)