

**Patents as a strategic tool for firms:
The case of the French chemical Industry under Environmental constraints**

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The European Union (at the Summit of Lisbon) has fixed for objective to become the most competitive and dynamic knowledge-based economy worldwide, capable of a durable economic growth coupled with a quantitative and qualitative improvement of employment and by a greater social cohesion. Confirmed by the European Council of Barcelona (2003), this proposal is the result of an intellectualization of the production, developing the existing bonds between (fundamental and applied) research, the R&D, the innovation and the knowledge shared between the various fields concerned. More particularly these problems are the key issues which have lead to the development of a goal of increase in the R&D expenditures to reach an intensity of 3 % of the European GDP in 2010. Indeed, *vis-à-vis* to the relative delay of Europe compared to the United States and Japan, the European Council of Barcelona, in March 2002, fixed itself like objective to reach this threshold. For France, the challenge remains to be able to answer the necessary increase in employment related to research (Brécart and Ali; 2004) while reconciling a sustainable development.

In parallel the adoption of a White Paper by the European Commission defined a strategy for a future Community Policy aiming the chemical substances. Although there exists already a broad theoretical and empirical literature (mainly American) concerning the impact of the various policies, the regulations and the incentives concerning this sector (see Weber, 2004; Adams, 1997), the European developments in this field remain vague and anecdotic.

In this frame the innovation seems to be a relevant exploitation of good ideas. The patent then constitutes a driving catalyst of the invention to commercial success, while reinforcing the competitiveness of the innovating firms. More precisely our analysis raises three main characteristics that we propose to deepen.

First of all a patent reveals competing situation of a company on its market, insofar as it ensures the innovating company a situation of monopoly on a product or a technology (Schumpeterian matter). Although this issue is strongly discussed, it seems to be adequate with the organization of the market of the chemical sector insofar as the intellectual and industrial property has a great importance there.

On the other hand the chemical sector is a branch of the economy whose dynamism is primarily ensured by activities of research and development. The patent then supplies a signal of efficiency of the strategic choices inside the companies, in terms of R&D investment and organization of the research teams...

Lastly, the nature of the patent can be to specify using the analysis of the International Patent Classification (IPC). Thus by selecting the exact characteristics of these patents in terms of environmental protection and improvement of the living conditions, it becomes possible to evaluate the efforts provided by the company in terms of respect of the objectives of durable development.

The work in progress aims at refining the use of patents in econometric estimations related to the innovation performances of firms. From now on it is a question of basing studies on a patent *and* on its nature in order to better specifying some behaviours, micro econometric speaking. The various proxies suggested in our study must first of all be subjected to a theoretical checking, based on the pre-existent scientific works to approximate in this chemical sector. Then, it is advisable to work out an empirical validation starting from the construction of a data base made up of patents and their characteristics (CIB).