IN WHICH BUSINESS ARE WE?*

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I read the article of Glänzel and Schoepflin: Little Scientometrics, Big Scientometrics ... and Beyond. This paper presents scientometrics in a very pessimistic way, but, in my opinion it rises the following question: in which business are we?

Are we in the analysis of the science production? Do we develop new tools to analyse the textual information?

And, above all we use our results and for which purposes.

It seems to me that if we answer those questions, a large step will be made in the understanding of the whereabouts of our business.

The background

Today, a large number of papers at conferences, are dealing with the so called competitive intelligence. This means for instance: Technology Watch and competitive intelligence, Innovation Teams, Sourcing groups for New Technologies, etc... 1,2,3 Most of these works, deal with the notion of the "learning by watching"4 by opposition of the "learning by doing" so estimated in the western world. The oriental world, which develops an approach of industrial development by the bias of incremental technology5 mastered a world wide system of information. On the other hand, the western countries, with an innovation rather linked to breakthroughs, developed a body of academic research bringing to the front line new paradigms. In fact, in these systems, and following the work of Ziman6 and Dou and al,7 the passage from Research to Development and from Development to Facilities is not straightforward, and, the investment in fundamental research does not bring necessarily a payoff through the development of new products and facilities.

The situation is also complicated, if, following Schumpeter we consider that invention goes through innovation to come on the market, and if imitation is the step which ensures the diffusion of the products on the market. In fact, many inventions do not become innovations and never reach the market. This situation means for the

decisionmaker that science investments are complicated, and that beyond the large bulk of scientific disciplines, it is not easy to understand what is going on. The only field (the military-industrial complex) which needs fundamental research to sustain its performances, is biased by the political commitment which takes for granted that investments have to be made in considerable amount to reach the goals.

The limit of science analysis through academic papers

Academic papers are used to disseminate information, but their contents, formats and availability are more or less obsolete if we think to what can be made through the modern tools offered by information technology. The databases which were available on a large scale during the past 20 years, provided a bibliographic view of the published works and were made to assist people in retrieval and handling and not to perform statistical or similar analyses.

The results which have been obtained by various softwares are a great progress, because they facilitate the grouping or degrouping of various entities, but even if the treatments are sophisticated, the starting material will remain the same: databases.

This is not really the price of the data which are a limiting fact (it is very easy to go to a library and extract thousands of references from a CD-ROM disk), but rather the quality of the data and the coverage of the databases.

Another point which constitutes a limit in scientometric analysis, is the fact that these types of analyses must be included in an intelligence system, and are concerned by very specific subjects, many of them being covered by secrecy. Then, again if people is using the methods and the tools of scientometrics, they are not going to tell you and to place the results in public domains. Many other facts have limited the impact of the analysis of databases corpus and among them the usage which has been made of citation analysis. In various countries, groups of researchers have seen through this tool a way to maintain a hegemonic position. Many journals (and among them technical ones) are not concerned by this database, and the impact of a journal or the citation rate of a paper can be improved by many tricks (among them the citation in small people networks). New dissemination systems, such as the development of the Internet network, and the availability of the WAIS (Wide Area Information Server) facility, are an example of what will be coming up in the next future. Then, the analysis of the "unpublished available results" will rise new problems.