

Patent portfolio analysis as a useful tool for identifying R&D and business opportunities—an empirical application in the nutrition and health industry

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Abstract

Computer aided patent portfolio analysis is a useful tool to evaluate both the R&D landscape and business opportunities. All necessary patent data can be generated from publicly accessible data bases. Patent data allow conclusions about a firm's patent activity and the quality of its patent portfolio. Further, the international and technological scope of a company's patent strategy can be assessed. This information is particularly interesting for the evaluation of a firm's innovative potential. Besides, it allows conclusions to be drawn on the innovative dynamics of the considered market segment, in this case dietary supplements. The results are shown in graphs and spider charts. In sum, we can make conclusions about the relative innovative power and patent strength of a company within the selected market segment. We draw conclusions on the importance of patents as a method of knowledge protection in this market and gather insights about the availability of companies that are potentially suitable for co-operations or acquisitions.

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Introduction

The reader is invited to imagine a company that intends to act in an area of business that is new to the firm. Naturally, such an intention involves a great number of risks that need to be minimised as far as possible in the preliminary stages. A thorough analysis of the operating environment and the company's own possibilities are indispensable and thus need to be mentioned first and foremost. Will the market segment prove to be profitable in the long run? Can the company's own established products or the ones that are already in the R&D pipeline satisfy the requirements of the market, or is it necessary to develop new products or to include them into the company's portfolio by licenses or co-operations? Much market data may

be collected by the company itself or, alternatively, be purchased from respective commercial suppliers, or the company may commission the data collection. In many cases it will be reasonable to involve external expertise either by consultancy contracts or simply by poaching suitable experts. However, this way a number of questions will remain unanswered. For example, these include an estimate of which course R&D may have to take in the considered market segment, how the evolution of potential competitors and customers may unfold, and what partners may be considered for reasonable acquisitions or co-operations. It is a fact that a large part of this information is available for free and virtually waiting to be pieced together like a jigsaw puzzle. We are talking about patent information that can be retrieved via databases. The aim of this paper is to show on the basis of a concrete example, how the systematic selection and evaluation of patent information may contribute to the assessment of new business opportunities. This paper is a subsequent practical application of a

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general framework developed to use patent information for strategic business planning [1].

1. Patents as a valuable source of information

What options do we have to get information on the trends in the fields of research and development? If we ask a scientist this question, he would usually refer to the exchange of experience in the “community”, to lectures, symposia, the personal contact with colleagues and their publications in relevant professional journals. Surprisingly, they would, as a rule, mention the study of patent literature only considerably later. A survey by the European Patent Office assumes that there are currently approximately 4,000,000 patents in force world wide, which are joined by 700,000 new patent applications each year [2]. Further enquiries often reveal that the reason for the rather secondary use of patents as a source of information is that patents would often not prove to be sufficient or not reproducible at all, and would furthermore only allow a temporally immensely delayed perspective on the R&D landscape because of the 18 month time period between the priority date of application and publication.

In terms of insufficient reproducibility of individual patents, this opinion may be absolutely correct. However, usually this problem is restricted to a concrete individual case and has nothing to do with the value of patent information as a whole in view of the virtually inconceivable wealth of information. In the end we ought to consider that the proven insufficient reproducibility both of a patent application and a granted patent has the ultimate consequence that the right of prohibition, which has been aspired at high expense, is either not generated, or revoked, or can simply not be enforced. According to estimations by patent attorneys it can be assumed that, after all, currently 10% of the human knowledge is protected by patents, of which 20–25% at the most have not proven to be legally valid in the last consequence [3]. From this it follows that more than 3,000,000 patents are currently in force world wide, which do not only fulfil the international requirements of novelty and inventive activity, but which also communicate a—as the skilled person puts it—“reproducible technical teaching”.

Also, the argument of the 18 month delay after which the information is made known to the public, cannot be sustained on closer consideration. Generally, patents are not filed when a development has been finished, but at a much earlier point in time. This procedure is a strategic necessity as it is the only way to protect a both cost-intensive and time-intensive development from the beginning, and to prevent, if possible, R&D investments from proving successful but worthless in the end as the competition have filed their own intellectual properties perhaps only a few days earlier. If we further take into account that a researcher—particularly if he comes from an industrial enterprise—would not report the latest development results before research has been finished and the product has

either been launched on the market or disappeared. Patent applications, much to the contrary, does very well offer a very prompt insight into the research strategy of a company despite of its 18 month delay.

2. Utilisation of patent information

The following quotation stems from the Austrian economist Schmookler: “*We can choose whether we wish to use patent statistics with prudence and to learn what we can learn from them, or not to use them and to do without all the information that they alone can provide*” [4]. Yet before search and evaluation of information start, the task must be clearly defined. The objective and the example that this paper is based on, consists of:

- dealing with the field of Dietary Supplements,
- establishing the most active companies,
- finding out the companies with an extraordinary patent position, and
- deriving proposals from the data thus gained, which companies or institutions would be suitable for co-operation or acquisitions in order to sensibly complement the R&D pipeline of a fictitious company that plans to get into this field.

The first step in an evaluation of patent information obviously is to carry out a respective search. Referring to the present issue, both advantages and disadvantages are showing: it is certainly an advantage that—in contrast to, e.g. a product release—completeness of the search is not of superior significance. However, a considerable disadvantage is that the area of “Dietary Supplements” is so extensive that we receive high five digit number of “hits” as a result. Yet in principle an exhaustive data base is desirable in order to achieve meaningful results. If there are too many documents involved in the evaluation, we are running danger that we do not receive significant results but just generic conclusions of no significance whatsoever. Therefore, the art of the game is to formulate the question in the search intelligently so that the amount of data lies within a spectrum between at least 50 and at most 2000 documents.

For this reason, we carried out not only one search dealing with Dietary Supplements in the present case but in addition, we divided the field into groups, so-called technology fields, for each of which we carried out an individual search. Selection and shape of such fields are left to the analyst and essentially conform to the individual requirements. A list of keywords is needed for each of the individual searches, unless we directly use the international classification of protective rights, namely the IPC classes. In the present case we divided the area of Dietary Supplements into 12 technology fields according to the relevant IPC classes (cf. Table 1).

In every search there is the problem that protective rights can be allocated to more than one technology sector.

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