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Patent value assessment and commercialization strategy

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ABSTRACT

It is difficult to assess the value of a patent before it is commercialized in the market. In this study, the author presents a hybrid method of assessing patent value and determining strategy in the early stage of commercialization. The author uses empirical data from Yuan Ze University to test the method. As a result of his analysis, the author categorized patents into four groups according to benefits and risk factors extracted from a factor analysis, and for each group of patents the author offers possible strategies for further commercialization. The method, which uses fuzzy measurement to pinpoint the location of a patent in a matrix with great precision, is more accurate than traditional technology portfolio planning models that rely on Likert scales. The method can highlight change in the meaning and strategic grouping of a patent. Furthermore, it can be used for long-term strategic planning, such as strategic foresight and corporate foresight.

1. Introduction

1.1. Strategic foresight and patent analysis

Many scholars have attempted to use patent information to value technology and to commercialize their products. However, it is rare to base strategic foresight on patents at the corporate level. Patent analysis is not an effective strategic tool because the information patents contain is selective, and thus incomplete, and there is often a long lag between when the patents are reviewed and commercialization occurs. Yet patents remain one of the most readily available and reliable sources of information for valuing a technology. Moreover, because patents usually cover a period of 20 years, they are an effective data source for longer term analysis. The purpose of filing a patent is not only to protect the company's business but also to generate revenue from the commercialization process. If people can assess the value of a technology through patent analysis, they can conduct more effective strategic planning.

1.2. Assessing patent value through strategic mapping

Assessing patent value has long been of interest to academics and practitioners alike. Research on patent assessment and commercialization strategies has become very important in both academia and the business world. Gassmann et al. [1] stressed that intellectual property rights (IPR) not only is a major driver of technological competitiveness and sustainable business operation but also enables companies to generate additional considerable profit.

Every year more and more patents are filed and granted. But as patent maintenance fees increase, it becomes increasingly important for managers to be able to determine the value of a given patent and plan a possible strategy for commercialization.

It is still difficult for IPR managers to assess the value of a patent without market information. In particular, university patents are generated from science-oriented research projects that are far from ready for commercialization.

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Therefore, based on insights from members of school patent review boards and inventors, the author propose a novel hybrid method that can help IPR managers assess the value of patents and design mid- and long-term strategies for their commercialization.

1.3. Research design

The research proceeded as follows. First, the author reviewed the literature on patent value assessment and strategic mapping and determined the criteria and indicators from which it would be possible to assess patent value and commercialization potential. Second, the author created a model that combined the Delphi method, fuzzy measurement, and a technology portfolio planning (TPP) model to analyze patents in large quantities before they were commercialized. Lastly, the author analyzed the commercialization potential of patents and clustered them in a TPP matrix model that determined possible mid-term (2015) and long-term (2025) commercialization strategies (see Fig. 1). The author tested the method by analyzing the commercialization potential of patents from Yuan Ze University (YZU).

The remainder of this paper is organized as follows: Section 2 presents a review of the literature on patent value indicators, commercialization strategies, the Delphi method, fuzzy measurement, and the TPP model. Section 3 describes the research methods and procedure. Finally, Section 4 presents the analytical results of the empirical case study, and Section 5 presents the conclusions and suggestions for future research.

2. Literature review

2.1. Patent analysis and strategic foresight

Besides protecting its inventions, patents provide economic benefits for a firm [2]. Patent data analysis can be used to help analyze industry trends in technological innovations [3]. Having the right patents and an effective commercialization strategy could lead to strong product sales and additional licensing income. But not all companies can fully realize the potential of patents because of limitations in financial and human resources and an inability to identify and take advantage of business opportunities [3]. Therefore, companies need to formulate longer term strategies from the inside to protect their products, and most important, to benefit from IPR [3,4].

2.2. Indicators of patent value

The scientific research on patent analysis is of enormous interest to scientists and practitioners because of its importance in, for example, strategic planning [5,6], analyses of the competitiveness of companies [7], research and development (R&D) planning [8], assessments of companies' technological strengths, and technology forecasting. Patent value cannot be generalized, because it varies by industry [9].

A company's patent portfolio to a large extent will determine its strategic planning for the future. By analyzing the patents owned by a company, one can determine that firm's strategy and future plans [8]. Effective utilization of IPR requires companies to integrate and follow their strategy [10,11].

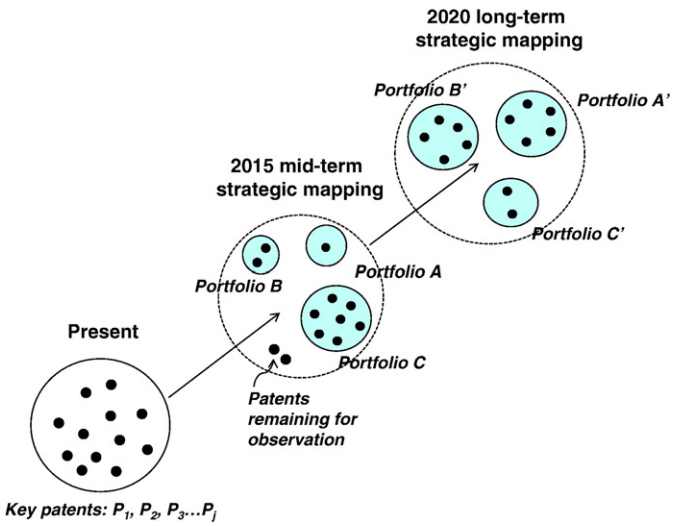

Fig. 1. Patent strategic mapping in two time segments.