

USING IP COMPETITIVE INTELLIGENCE TO BUILD AN EFFECTIVE INNOVATION STRATEGY

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ABSTRACT

Innovation is the driving strategy for firms operating in the engineering and technology intensive sectors in building and sustaining competitive advantage. However, despite significant expenditures, companies are finding it difficult to come up with innovations that provide them any meaningful competitive advantage. Many successful innovators of the past are finding it difficult to sustain performance. The R&D costs of companies are rising while the output of meaningful innovations is falling. This issue becomes larger for companies operating in the technology driven sectors like the medical devices industry, biomedical engineering, biotechnology, etc where the product life cycle is short, competition is large, and obsolescence is very high. Thus, the need for such companies operating in the technology intensive sectors is to have an effective innovation strategy. An effective innovation strategy can not only help companies improve innovation output, but also reduce the costs of developing these innovations. Intellectual property competitive intelligence can be used as an excellent tool to build an effective innovation strategy. This paper discusses how companies operating in technology intensive sectors like the medical devices, biomedical engineering, etc can use the intellectual property competitive intelligence to build an innovation strategy that can provide them with the competitive advantage they seek.

Keywords: Intellectual Property Competitive Intelligence, Biomedical Engineering, Medical Device Industry, Competitive Advantage, Innovation, Innovation Strategy, Strategy, Applied Sciences, Technology.

INTRODUCTION

The capability to produce new innovations is of utmost importance for firms of all sizes, as it enablesthem to achieve a

sustainable growth (Pellika 2014). To achieve this, a firm must have an innovation ecosystem, well-coordinated with external collaborators, to acquire complimentary assets to the innovation process (Adner 2006; Teece 2007; Pellika 2014). Therefore, firms must establish an innovation strategy. A sound innovation strategy not only enables a firm to improve their performance with respect to producing new and improved products, but also improve their financial performance (Kach et al 2015). With improved financial performance and better returns, the firm retains its ability to innovate and hence, sustain the innovation process.

Innovation strategy has a powerful influence on the performance of a firm. It results in relatively efficient product development outcomes (Cooper 1987; Li and Atuahene-Gima2001; De Clercq, Menguc and Auh2009).This can be extremely critical, especially for small firms operating in technology intensive sectors (e.g. the medical devicesand the biomedical engineering), as misdirected product developments may prove very costly for them. Thus, innovation strategy plays an instrumental role in saving such costs by properly directing the product development efforts of the firms (Eisenhardt and Tabrizi 1995).

INNOVATION STRATEGY

Rising competition, volatile markets and shorter product life cycles are compelling firms across industries to innovate. A well-defined innovation strategy can enable firms to develop new business opportunities through innovations (Pellikka & Ali-Vehmas 2016).

Innovation strategy basically determines the scope and extent to which a firm is willing to invest, to achieve its future aspirations (Baert 2016). It involves formulation of policies and philosophies in developing products in line with the firm's overall strategy.

An innovation strategy includes the vision, the means, the efforts and the actions to channelize the innovation efforts towards the innovation strategy (Mintzberg 1978). A deeper review of literature suggests an important role of innovation strategy in properly guiding the innovation efforts and hence improving the performance of a firm (Song & Dyer 1995; Griffin 1996; De Clercq, Menguc and Auh 2009). According to Baert 2016, innovation strategy optimizes the interaction between internal resources, processes and external opportunities to improve outcomes of innovation projects.

COMPETITIVE INTELLIGENCE

According to the Strategic and Competitive Intelligence Professionals (SCIP), competitive intelligence is "the process of monitoring the competitive environment and analyse the findings in the context of the problems specific to each company in order to provide support in decision making." Majorly, competitive intelligence makes use of openly available sources of information and by a systematic process, converting it into intelligence to

support business decisions (Swedass & du Toit 2005).

Freely available patent data is an important source of competitive intelligence that can be utilised by firms to gain competitive advantage (Shih et al 2010). Patent data has been demonstrated to support strategic planning for new products (Lozano 2003). Patent literature can be used to assess the quality of inventions, evaluate the R&D policy of firms and promote new ideas for innovation (Dou et al 2005).

IP COMPETITIVE INTELLIGENCE

Converting the patent data into effective competitive intelligence is called IP competitive Intelligence. IP competitive intelligence can be used to formulate data driven innovation strategies, IP management and technology planning decisions (Pargaonkar 2016). Thus, it can prove as a highly effective practice for firms operating in the technology intensive industries like the medical device industry, pharmaceutical industry, aeronautical industry, automobile industry, biomedical industry, biotechnology, etc. As we already know that misdirected product developments efforts in such firms may prove very costly for them, therefore, IP competitive intelligence can play an instrumental role in saving such costs by enabling these firms to formulate an effective and integrated innovation strategy which can help align their innovation efforts in line with their overall strategy and the vision of the firms (Eisenhardt and Tabrizi 1995; Kach et al 2015; Pargaonkar 2016).

SOURCES OF IP COMPETITIVE INTELLIGENCE

As discussed earlier, patent data is the most important source of IP Competitive

Intelligence available to firms of all sizes. Patent data can be obtained from both paid and freely available databases. The most widely used free patent databases are listed below-

- WIPO database- Database of international patent applications
- EPO database- Database of patent applications filed with European Patent Office
- USPTO database- Database of patent applications filed with Unites States Patent and Trademark office
- Google Patents- Various databases consolidated by Google
- IPO database- Database of patent applications filed with Indian Patent Office

TECHNIQUES OF IP COMPETITIVE INTELLIGENCE

The above-mentioned databases can be utilised for IP competitive intelligence. Depending on the need of the firm, various kinds of techniques can be employed. The following are the most common techniques utilised by firms for IP competitive intelligence.

Prior Art Search

This type of search can be done as a primer to all techniques. This can help in identifying all content relevant to the technology in question or the field of study. This is widely used as a starting point for assessing the novelty and patentability of an invention.

Prior Art search can also be used to assess the level of technological advancement in a particular field or to know the state of the art. This can help firms to know what is already known to the world and save costs in re-inventing the same.

Validity Search

Validity searches can be important in two cases. First, in case of closely related prior searches, validity search can bring out a case for out-licensing or in-licensing inventions. It can also help in assessing the potential commercial value of an invention.

Second, in cases of infringement or litigation, validity searches can bring up issues related to the validity of patents which can be used by the defendants to build their case.

Freedom to Operate

Before commercialising an invention in a particular geography, a firm can perform freedom to operate search. This can help the firm in identifying potential barriers in commercialising their own invention. This is done by examining the language of claims to assess whether the protection of one invention covers the claims of the other. This is done to proactively eliminate the potential risk of infringement as litigations prove to be very costly afterwards.

Technology Landscape

This is a comprehensive report on a given field of invention or the technology in question. This reveals a lot of information about the state of technology, the level of advancement, the major competitors, their IP portfolio, the recent trends in technology, patent clusters, patent landmines, patent gaps, relative strength or position of firms in context to competitors, and the like. Technology landscape report can help a firm in taking informed decisions to invest or divest in a particular technology, provide direction to the overall innovation efforts and ultimately formulate an effective innovation strategy.

Patent Portfolio

As discussed earlier in the paper, for firms operating in technology intensive sectors, innovation is the single most important determinant for a sustainable competitive advantage. Thus, patent portfolio management becomes an important task for such firms. Patent portfolio analysis can help the firms keep a track of their inventions, compare them with their R&D efforts and calculate the effectiveness of their innovation strategy.

Applying IP Competitive Intelligence

The purpose of any kind of intelligence is to support management decision making. Likewise, the purpose of IP competitive intelligence is to enable the management to take strategic decisions and formulate an innovation strategy for the firm.

IP competitive intelligence can support decisions regarding where to invest, how much to invest, when to start/stop investing in a particular technology, how many personnel to be employed in R&D, buying or selling IP, out-licensing or in-licensing of technologies, filing a suit for infringement, calculating return on investment on R&D, etc

DISCUSSION AND CONCLUSION

Rising competition, volatile markets and shorter product life cycles are compelling firms across industries to innovate. The capability to produce new innovations is of utmost importance for all firms, especially those operating in the technology intensive sectors (such as medical devices and biomedical engineering). To achieve this, firms must have an innovation ecosystem, well-coordinated with external collaborators, to acquire complimentary assets to the innovation process. A well-defined innovation strategy can enable firms to improve their performance by

improving the efficiencies of their innovation efforts.

A sound innovation strategy not only enables a firm to improve their performance with respect to producing new and improved products, but also improve their financial performance. With improved financial performance and better returns on investments, the firm can both develop and sustain their competitive advantage.

Patent data is an important source of competitive intelligence that can be utilised by firms to gain competitive advantage. Converting the patent data into effective competitive intelligence is called IP competitive Intelligence. IP competitive intelligence can be used in the strategic planning process of firms. IP competitive intelligence can not only play a role in saving R&D costs, but also formulating the overall innovation strategy.

The most widely used sources of patent data are the databases maintained by the respective patent granting authorities across the world and the WIPO. These databases can be utilised for a variety of analysis depending upon the needs of the firm. The most widely used patent analysis and reports are- Prior Art Search, Validity Search, Freedom to operate, Landscape and portfolio reports.

IP competitive intelligence can enable firms to take strategic decisions regarding where to invest, how much to invest, when to start/stop investing in a technology, how many personnel to be employed in R&D, buying or selling IP, out-licensing or in-licensing of technologies, filing a suit for infringement, calculating return on investment on R&D, etc. Answers to these questions can enable firms to formulate an

innovation strategy that can help them build and sustain competitive advantage.

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