

There's Gold in the Patent Stream

Patent mining can help predict market currents.

Best of all, the data stream is free.

By Kas Kasravi, EDS

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There's little doubt that robust organizations and economies are fueled by bold innovation under the leadership of creative thinkers. What fuels the fire is the presence of effective systems to harness the inventive spirit. Beating at the center of these systems is the patent. The patent is a powerful instrument both for harvesting the benefits of innovation and for securing the interests of innovators to incentivize a continuous cycle of innovation.

Conventional thinking posits that the patent offers benefits such as royalties and licensing, defensive litigation, and the monopolizing of markets. But what if there were additional benefits of the patent system nearly as powerful as those incumbent in the patent itself? What if potent benefits could be culled from the robust repository of patent data that is freely and publicly available? In truth, this repository exists as public record, and it's a gold mine just sitting there for the taking, waiting to be tapped and utilized for spotting market and technology trends, forging strategic partnerships, and identifying the world's top innovators and most adept legal counsel in specific market segments, just to name a few.

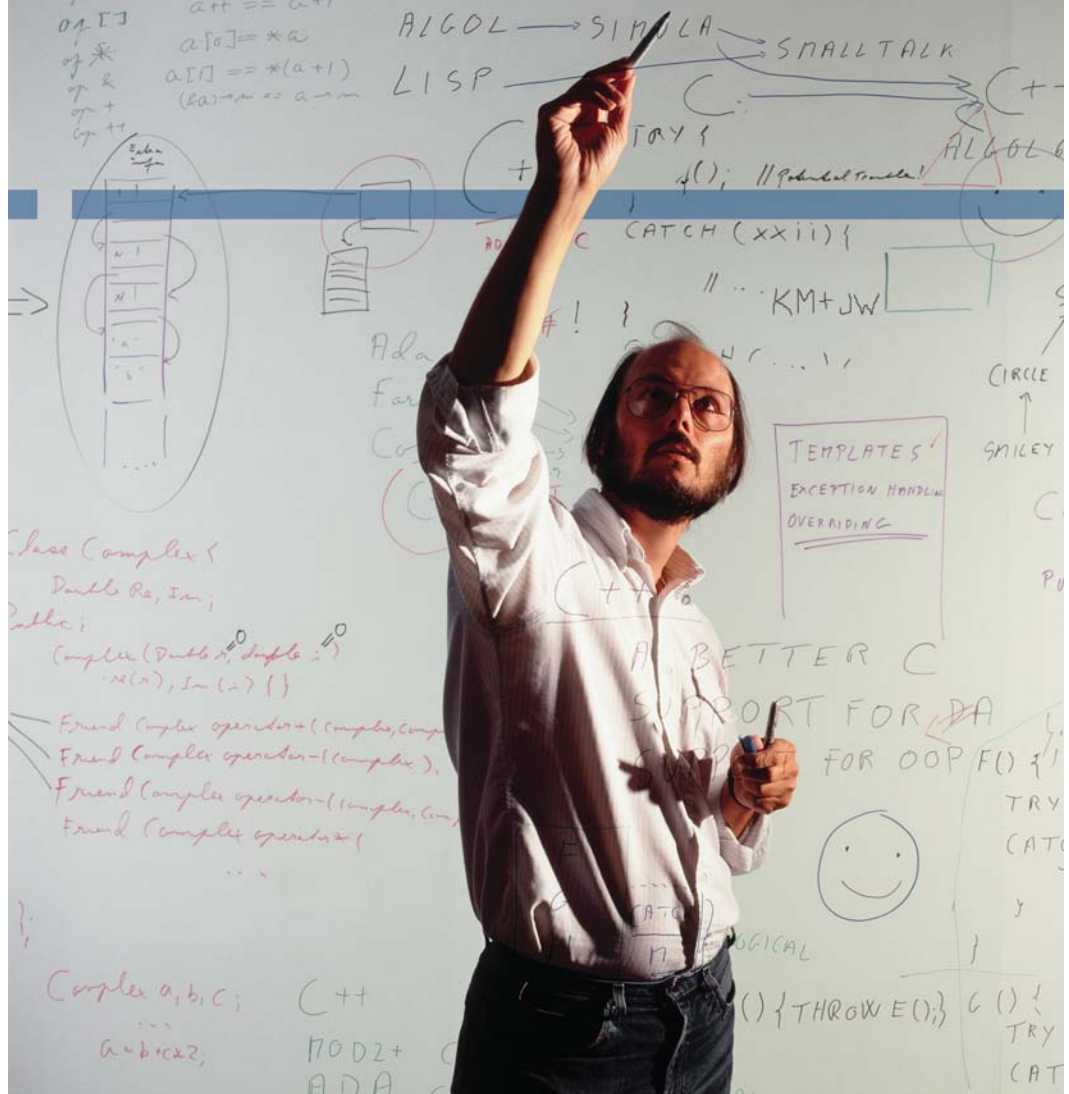
The necessity of the patent to healthy commerce was recognized by U.S. founding fathers more than two centuries ago. Its foundations are embedded in the U.S. Constitution, where Article I, section 8, clause 8 establishes the patent system "To promote the progress of science and useful

arts, by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries." This constitutional clause gave explicit recognition to the necessity of advancements in science and technology, the need to reward inventors, and the need for the economy to benefit from the patented inventions. The result is a system that rewards the inventors with limited exclusive rights, while it requires the inventor to disclose all that's known about the invention. In short, patent law exerts a heavy bias in favor of innovation: U.S. patent laws make it possible for innovators to file and obtain patents for the inventions and subsequently defend them as property rights in court.

Now more than ever, constant, rapid innovation is crucial to success. In the past, a company would create an innovative product, patent that product, and perhaps modify it every two or three years to extend its lifespan to 20 or 30 years. But over the last two decades, patent activity has exploded and the rate of improvement itself is accelerating exponentially. Today the demand for innovation far outstrips that of 20 or 30 years ago. The lifespan of new innovations is compressing at an unprecedented rate as market cycles accelerate. Think of how long it took VHS videotape technology to be readily adopted by the consumer market when compared to the DVD technology that followed—the latter was adopted in a fraction of the time. As this rate of change hastens, those organizations that will thrive are those that continuously introduce new products and services and improve upon them.

As patent activity is aggressively on the rise, there has been a concomitant surge in patent infringement lawsuits, and the media discusses patents more than ever before. Though patents are most numerous in the pharmaceutical, >>





mechanical, electronics, telecommunications, and energy industries, patent activity in business processes, financial and analytical services, and software has exploded over the last few years. What does this mean for your enterprise?

Mining the Patent Vein

Compiling and analyzing freely available patent data, or patent mining, can generate useful strategic insights that will influence the course of your business. Successful patent mining makes it possible to forecast markets by lever-

aging the time between patent publication date and patent commercialization, generating insights into what might be coming to market; to generate a better understanding of the inventive trends driving individual companies and industries to better identify intellectual assets, strengths and weaknesses; to identify top inventors for recruiting, recogni-

tion, and retention purposes; to put into sharp focus the available law firms in the patent sphere to facilitate the selection of the most appropriate legal counsel for specific classes of inventions; and to gain insights into the geographic dimension of the inventive sphere, i.e. which states or countries generate the most valuable patents in specific inventive classes. The knowledge gained from patent mining can be deployed to support critical business decisions in recruiting, advertising, and investment.

Patent mining is commercial intelligence—mostly untapped intelligence. The whole notion of patent mining is a fairly new concept. At its core, it's a creative way of leveraging readily available information to generate fresh insights. One example: compliance management. Five years ago, there were no patents filed in the area of compliance management. Not one. But in the wake of the corporate accounting scandals that embroiled and unraveled companies such as Enron and WorldCom and the subsequent passage of the Sarbanes-Oxley Act or Public Company Accounting Reform and Investor Protection Act of 2002, compliance management patents

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have mushroomed. A business trend was born—one revealed through patent mining.

Patent mining can also bring into focus the business strategies of specific companies. If we notice patent after patent filed in a specific area by a specific company, with the knowledge that this company invests heavily in patent application and maintenance, we get a sense that the market segment relevant to this area of invention is important to that company.

Yet patent mining can also yield benefits internally, especially in large organizations with far-flung subsidiaries. When examining patents pending internally, a picture of what various inventors are doing collectively and where innovations are focused can be generated. With such a picture clearly in focus, a company is better able to harness its own resources, as well as better discern patent infringement and competitive threat vulnerabilities. Internalization of its patent portfolio can also aid in the forging of strategic alliances.

Let's be clear: patent mining isn't a simple compiling of patents a company possesses or has filed for versus the number possessed or filed for by a competitive firm. Conventional analysis is limited to structured data or data organized in tabular form. But patent data is abundant in unstructured textual information in the form of abstracts, specifications, and claims. Patent mining focuses on high-level analytical patterns as a way of getting your arms around voluminous structured and unstructured data. These patterns involve data mining or the process of analyzing large volumes of data to discover:

- correlations that could otherwise be overlooked
- sequence analysis, or the process of discovering and leveraging the sequential occurrence of certain events—a process used to correlate patent activities with external factors such as competitor strategies, regulations, and lawsuits
- text mining or the syntactic and semantic analysis of textual data, and the discovery of pertinent information in those documents

People can “read” documents and understand the content, but this is an extremely slow process. Text mining allows us to rapidly process volumes of documents and identify and extract what's useful. It can facilitate the processing of large num-

bers of patents for a better grasp of the inventive sphere providing a greater understanding of a company's inventions as well as aid in the detection of possible patent infringements. Text mining essentially converts unstructured data into structured data. Thus, when text mining output is used in combination with structured data, such as dates and company names, the process generates a display of rich insights into what one or a whole collection of patents might be expressing.

Risks

As potentially useful as data mining may be, there are inherent technical risks. Data mining techniques only discover correlations and not causation, possibly leading to the establishment of nonsensical rules. It's imperative to verify and validate the disclosed information before making critical business decisions based on patent mining discoveries.

Patents are critical to forward-looking organizations. Publicly available patent databases contain a substantial amount of information suitable for mining to provide trend analysis by industry, identify competitive firms and potential clients, and to generate insights into future products and services. In addition, mining allows you to identify innovators for recruiting and retention purposes, to analyze geographic correlations with inventions, and to identify the specialties of specific patent law firms as potential business resources. Yet these are just a few examples of the market intelligence that can be culled from the freely available patent data stream. With some creative probing and tweaking, additional applications can be generated tailored to specific business or industry needs. The patent dataset is robust and ripe for exploitation. Will you pan its riches? |S|

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