

Business Method Patents and Financial Services

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The author is a senior counsel in the legal department of the Atlanta Fed. This article is an overview of the Atlanta Fed's 2003 Financial Markets Conference, "Business Method Patents and Financial Services," held April 3-5, 2003. The author is grateful to Robert Eisenbeis for shepherding a superb conference on a compelling topic and for inviting him to contribute, and he thanks Bobbie McCrackin for helpful comments on this article.

The modern U.S. economy is experiencing what may be an accelerating shift in the importance of intangible, intellectual, or conceptual assets relative to physical assets. A patent for an Internet-based business method or for a "killer app" software tool can form the basis for an entire enterprise. Today there are highly profitable firms whose assets consist almost exclusively of intellectual property, licensed to generate royalties at virtually no marginal cost of production. Some established firms have discovered that licensing their portfolio of intellectual property assets is far more profitable than producing tangible goods and have modified their entire business strategy as a result.

In keynote remarks at the Atlanta Fed's 2003 Financial Markets Conference, cosponsored with the University of North Carolina School of Law, Federal Reserve Chairman Alan Greenspan outlined dilemmas that "bedevil" economists and jurists alike. Given the increased "conceptualization" of U.S. gross domestic product, and assuming the objective is to maximize economic growth, how does one strike the right balance "between the interests of those who innovate and those who would benefit from innovation"? Does the law correctly calibrate the rewards embodied in intellectual property rights? What are the societal and economic costs of intellectual property rights? Furthermore, does the U.S. system of intellectual property law facilitate a proper

delineation of the "metes and bounds" of property rights in ideas?

Greenspan's address provided the foundation for a lively debate among conference participants, who comprised an international mix of economists, legal academics, jurists, policymakers, practicing lawyers, bankers, and technologists. The topic that assembled this diverse group was the emergence and legitimization of "business method" patents in the United States and how this development affects financial services innovation and the future of financial services firms.

Following decades of jurisprudential antipathy to the notion of patenting a method of doing business, the U.S. federal courts raised the flag of surrender in 1998 in the case of *State Street Bank & Trust Co. v. Signature Financial Group, Inc.* The case declared that the mere fact that an innovation is a method of doing business, or is software designed to accomplish business goals, does not mean that, ex ante, such an innovation is not patentable under U.S. law.

This landmark decision, coinciding with the rise of the Internet as a new business channel, provided the impetus for what may be characterized as a new "patent flood." In the years since the *State Street* decision, the volume of patents filed for software and business methods has grown significantly.¹ Given the catalyst of *State Street*, financial services firms realized the potential competitive value of patents on their own business methods and software. Simultaneously, established financial services firms faced

the dawning realization that their businesses are not immune from costly patent infringement lawsuits and are threatened by new competitors, including nontraditional players such as technology firms.

U.S. versus International Patent Systems

The conference focused on four key themes.² First, now that the last vestiges of subject-matter restraints on business method and software patents have been eliminated, how does the U.S. patent system compare with those of other countries? Professor John M. Conley of the University of North Carolina School of Law noted that U.S. law permitting business method and software patents now appears established and stable. That said, Conley predicted that U.S. courts might begin to erode the enforceability of these patents under the legal standards of “novelty” and “nonobviousness.” The courts might thereby seek to stem the tide of overly broad, low-quality, or even spurious patents issued by the U.S. Patent and Trademark Office (USPTO).

Conley then contrasted the patent systems of the European Union and Japan and commented on the impact of GATT’s TRIPS Agreement, which took effect in 1995.³ He noted that the U.S. system relies heavily on dispute resolution before the courts while other systems permit or even encourage the use of administrative procedures before the patent office. The European Union and Japan have technical requirements that appear antithetical to the U.S. approach to business methods and software. Reviewing various case histories, Conley concluded that the differences in these patent systems at the theoretical level are often “not so profound in practice.” Further, he found a paucity of empirical evidence to contrast the economic effects of differing approaches to patenting business methods and software.

The Effects on Firms’ Business Strategy

How have business method and software patents affected the competitive behavior and strategy of financial services firms? Patents might allow new market entrants and competition, as observed in the biotechnology industry, or they might reinforce the position of established firms, as observed in the semiconductor industry. Professor Josh Lerner of Harvard Business School examined the competitive effects of patenting on the financial services industry, focusing on purely “financial” business methods and on the behavior of investment banks. He estimated that the number of financial patent applications increased three- or fourfold between 1997 and 1999 and that this trend likely has continued. Lerner examined empirical evidence and found that

financial patents have been awarded predominantly to large, established U.S. firms. He also found interesting linkages between patenting and firms with ties to the academic community as well as firms focused on debt-related instruments.

Considering anecdotal evidence, Lerner observed that financial institutions now recognize the strategic importance of patent portfolios, both with regard to traditional and nontraditional “paper” competitors. Lerner predicted that while financial services firms have been loath to sue each other and are now building defensive patent portfolios, this stance might break down in the face of a difficult economy or a realization of the licensing value of their patent holdings. Finally, he speculated that in the financial services industry, patents are more likely to help consolidate the position of established firms than to invite new market entrants.

Boon or Bane for Innovation?

Are patents a boon or bane for financial services innovation? Such innovation flourished for decades before *State Street* as a result of incentives other than patent rights. Now that patents have arrived, will the pace quicken, or will patents undermine the system of incentives that drove financial services innovation before the arrival of patents? These and other questions were discussed by Professor Robert P. Merges of the University of California at Berkeley School of Law. Merges identified incentives other than patents that motivate financial services innovation, including “first mover” lead-time advantages, the benefits of “tacit knowledge” not shared with other firms, and attendant reputational advantages as an innovative firm. Even though innovations not protected by patents are subject to reverse engineering and outright copying by competitors, these other incentives have driven significant financial services innovation.

Will patents upset the apple cart? Drawing upon analogies from the nineteenth-century railroad industry as well as today’s software industry, Merges found that the financial services industry has responded similarly to the impact of patents by seeking to protect the existing mode of innovation. However, as inferred from the experience of those other industries, the introduction of patents should not damage innovation in financial services. The “codification” of innovation in the form of patents is likely to formalize a previously less formal interchange of innovative ideas and might increase the costs of such sharing in the short term. But Merges posited that this codification will not diminish the beneficial exchange of ideas in the long run and thus will not

harm innovation. He also detected salutary effects from the spin-off of innovative firms from established ones and from new innovative firms entering the market using patents as competitive tools. In sum, Merges sees no long-run harm to innovation in the financial services industry resulting from patents but instead some unintended benefits.

The Effects on Policy

Bronwyn H. Hall, professor of economics at the University of California at Berkeley, noted that “most economists view the patent system as a necessary evil: With a patent grant we trade off short-term exclusive (monopoly) rights to the use of the invention in return for two things—(1) an incentive to create the innovation and (2) early publication of information about the invention and its enablement.” Given this axiom, what are the implications of business method patents for innovation policy? What policy responses should be considered? Hall asserted that only two things are sure with regard to business method patents—allowing them will result in more business method patent applications, and increased patent activity combined with issuance of low-quality patents will result in an increase in litigation and other transaction costs.

Hall’s survey of the literature found that sequential, “cumulative” innovation, which relies upon prior inventions to work, is generally hindered by low hurdles to obtaining and enforcing patents. She concludes that business methods probably fall in this category. A new business method is unlikely to stand alone but is likely to rely upon the prior business innovations of others, which may now be more

easily patented. She detected a broad agreement that U.S. business method and software patents have been of low quality as a result of a lack of adequate prior art databases at the USPTO, an overburdened patent office, or permissive “nonobviousness” standards. Low-quality patents increase the transaction costs of innovation, such as litigation costs, and create uncertainty about the risks of innovating in a patent-heavy field.

Hall also surveyed a wide array of policy recommendations to address these issues in the United States. These recommendations range from statutorily reversing *State Street* to raising the bar of nonobviousness standards to providing an improved opportunity for *inter partes* opposition proceedings and reexaminations by the USPTO. The conference participants discussed these policy recommendations but reached no consensus about them.

Conclusions

What lessons can be taken away from the 2003 Financial Markets Conference? Most participants seemed to agree that business method and software patents in the United States are here to stay. Although there are emerging trends detected, and lessons can be drawn from the experiences of other industries, much empirical study remains to be done on patents’ effects on financial services innovation, competition, and business strategy. Further, much can be learned through an interdisciplinary approach to the study of these issues. Given Chairman Greenspan’s postulation of a shifting economic emphasis to conceptual assets in the modern economy, this conference was indeed “timely and apt.”

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1. Patents issued by the U.S. Patent and Trademark Office (USPTO) grant the patent holder the right to exclude others from making, using, or selling the patented invention in the United States for twenty years from the date of filing.
 2. The conference featured four policy papers as well as four academic papers. Only the policy papers by John Conley and Robert Merges are presented in this issue of the *Economic Review*. For the complete text of all the conference papers, visit the Atlanta Fed’s Web site at <www.frbatlanta.org> under “News & Events/Conferences.”
 3. The General Agreement on Tariffs and Trade (GATT) of 1994 established the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS). The successor to GATT is the World Trade Organization, established in January 1995.