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BIG BANKS AND BUSINESS METHOD PATENTS

Megan M. La Belle* and Heidi Mandanis Schooner**

The banking industry and the patent system are longstanding American institutions whose histories date back to the founding of this country. Historically, however, the paths of these two institutions rarely crossed. Although financial firms have been increasing their innovative output for decades now, until recently they relied on trade secrecy, first mover advantages, and other business mechanisms to protect and monetize their intellectual property – not patents.

Through a convergence of circumstances over the past several years, that pattern has changed. The shift began when the Federal Circuit decided that business methods—banks' primary mode of innovation—are patentable subject matter. That decision triggered an increase in the number of business method patents issued by the PTO, and, correspondingly, a surge in patent infringement litigation targeting big banks. When the banks found little success in court, their powerful lobby persuaded Congress to include a special carve out for financial patents in the America Invents Act—the comprehensive patent reform legislation enacted in 2011. Meanwhile, as the financial industry sought legislative favor to ward off future infringement suits, many of the big banks built substantial patent portfolios of their own.

This Article explores this nascent relationship and considers some potential implications of growing bank involvement in our patent system. It suggests that the intersection of these institutions could yield some benefit, for example by improving the publicly available information regarding financial innovations. Yet, more pointedly, it warns of possible harms, especially if big banks use their political and economic power to disproportionately influence patent reform and innovation policy in the future.

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** Professor, Catholic University of America, Columbus School of Law. Earlier versions of this Article were presented at workshops and conferences at the George Washington University Law School, American University Law School, and the Wharton School. We thank the participants at those events, as well as Stefania Fusco and Saule Omarova, for their insightful feedback. Many thanks to Arturo Chang and Daniel Kane, who provided us with essential research assistance.

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INTRODUCTION

In 2012, the United States Patent and Trademark Office (“PTO”) issued 165 patents to Bank of America, the second largest U.S. bank. Less than a decade earlier, Bank of America’s patent holdings were barely worth counting.¹ While Bank of America was busy becoming a significant patent owner, Congress overhauled the U.S. patent system by passing the most

1. See *infra* Part V (discussing the patent holdings of Bank of America and other U.S. banks).

comprehensive legislative reform since 1952.² Twenty years ago, the patent system and big banks had little to do with each other. Today, their landscapes are merging through the confluence of various developments relevant to innovation in general and financial innovation in particular.

The foundations of our patent system and the support of innovation run deep. The U.S. Constitution authorizes Congress to grant patents to inventors to “promote the progress of science and useful arts.”³ The patent system is designed, therefore, “to foster, not foreclose, innovation.”⁴ Few would dispute that a patent system is capable of promoting innovation,⁵ but substantial controversy persists over whether our system actually does. While patents provide an incentive to innovate by granting the inventor a limited monopoly, the benefits of innovation can be outweighed by the rent-seeking of the monopolist. The trick is finding the right balance, and for some time now the sentiment has been that the U.S. system needs recalibration.⁶

It seemed that the explosive growth in patent litigation in the early 2000s, particularly in the high technology sector, could serve as sufficient incentive for reform. Indeed, high tech giants like Microsoft and Google led the call for Congress to revamp our patent system.⁷ Yet it has always been difficult to pass legislation in the absence of a major crisis. Perhaps the wake of the Great Recession and accompanying urgent need for jobs provided the perfect opportunity for Congress to pass patent reform legislation. In signing the Leahy-Smith America Invents Act of 2011 (“AIA”),⁸ President Obama heralded the new law as a means of stimulating economic growth.⁹ Substantively, the new law is best known for moving

2. Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284-341 (2011) (codified as amended in scattered parts of 35 U.S.C.).

3. U.S. CONST. art. I, § 8, cl.8.

4. CLS Bank Intern. v. Alice Corp. Pty. Ltd., 685 F. 3d 1341, 1350 (Fed. Cir. 2012).

5. For a skeptical view of patent systems, see Michele Boldrin & David K. Levine, *The Case Against Patents* (Federal Reserve Bank of St. Louis, Working Paper 2012-035A, 2012) (arguing that there’s no empirical evidence showing that patents increase innovation and productivity).

6. See Carl Shapiro, *Patent Reform: Aligning Reward and Contribution* (NBER Working Paper No. 1314, 2007) (“While there is no doubt that the U.S. economy remains highly innovative, and there is no doubt that the patent system *taken as a whole* plays an important role in spurring innovation, the general consensus is that the U.S. patent system is out of balance and can be substantially improved.”) (emphasis added).

7. See, e.g., Declan McCullagh, *Microsoft, Oracle Call for Patent Reform*, CNET (Apr. 25, 2005) http://news.cnet.com/Microsoft,-Oracle-call-for-patent-reform/2100-1030_3-5683240.html.

8. Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284-341 (2011) (codified as amended in scattered parts of 35 U.S.C.).

9. Press Release, President Obama Signs America Invents Act, Overhauling the Patent System to Stimulate Economic Growth, and Announces New Steps to Help Entrepreneurs Create Jobs, Office of Press Secretary, The White House (SEPTEMBER 16, 2011).

the U.S. from a “first-to-invent” to a “first-to-file” regime for patent protection. However, the AIA effects many other reforms that will have significant implications for how patents are obtained and enforced in this country.

Alongside these major developments in the patent realm came important changes for the financial services industry. For a long time, the conventional wisdom was that financial institutions were uninterested in patents and the litigation surrounding patents. Instead, banks relied on other means of protecting their innovations, such as trade secret rights and first mover advantages.¹⁰ But a convergence of events over the past decade or so challenged this conventional wisdom, and now patents undoubtedly matter to the financial industry.

To begin, the financial services industry has been engaged in a period of high profile innovation in products, processes, and organizations. In fact, some of those innovations have been identified as contributing to the Financial Crisis of 2008.¹¹ As firms increased innovative output, the U.S. Court of Appeals for the Federal Circuit (“Federal Circuit”)—the court with exclusive jurisdiction over patent appeals—opened the door for patenting of business methods, the types of inventions most relevant to the financial industry.¹² Although big banks did not patent their inventions right away, others did—namely, individual inventors and small entities—and then they started suing the banks for patent infringement.¹³

At that point, many financial institutions began seeking patent protection for inventions in unprecedented numbers, most likely to ward off future infringement suits.¹⁴ But defensive patenting was insufficient, and patent owners continued to target the financial industry with infringement suits. So the big banks turned to Congress and used their unparalleled political power to gain favorable treatment in the AIA. Specifically, the bank lobby persuaded Congress to create a unique post-grant administrative review procedure that allows financial patents to be challenged at the PTO, rather than in expensive, prolonged litigation in federal court.¹⁵

10. See *infra* Part II.A (discussing how the financial industry has traditionally protected innovation).

11. FINANCIAL CRISIS INQUIRY COMMISSION, FINAL REPORT OF THE NATIONAL COMMISSION ON THE CAUSES OF THE FINANCIAL AND ECONOMIC CRISIS IN THE UNITED STATES (2011) (explaining how some financial innovations may have been a contributing factor to the Financial Crisis of 2008).

12. See *State St. Bank & Trust Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368 (Fed. Cir. 1998) (involving a patent for a data processing system used for financial services).

13. See *infra* Part III (considering recent patent litigation activity against the financial industry).

14. See *infra* Part V (detailing the big banks’ expanding patent portfolios).

15. See *infra* Part IV (discussing the bank lobby’s role and agenda in the passage of the AIA).

That big banks, unlike high tech companies, were able to secure this “bailout” under the AIA speaks volumes about the influence of these institutions.¹⁶ In a relatively short time span, financial institutions have immersed themselves in the patent world – both as patent owners and advocates for reform. And while the banks’ involvement in the patent system may have initially appeared aberrational or fleeting, their participation in the most recent round of reform efforts proves that theory wrong.¹⁷ To the contrary, the banks have found a place at the table in the patent debate—a topic that merits attention not only because of the banks’ political power, but because of their importance to the economy more generally. This Article seeks to shed light on this emerging relationship between the financial industry and the patent system.

This Article proceeds in six parts. Part I overviews the characteristics of financial innovation, exploring briefly what motivates inventors and weighing the social costs and benefits of financial innovation. Part II discusses the patentability of financial innovations, focusing on the Federal Circuit’s decision in *State St. Bank & Trust Co. v. Signature Fin. Grp.*, in which the court held that business methods are patentable subject matter under § 101 of the Patent Act.¹⁸ This Part explains the *State Street* court’s rationale and considers some early reactions to this controversial decision.

Part III traces the rapid rise of business method patents—and litigation surrounding those patents—in the wake of *State Street*. Specifically, it canvasses litigation directed at the high tech and financial sectors, and addresses how this litigation explosion spurred a call for patent reform. Part IV then introduces the AIA and discusses the big banks’ role in this legislative reform effort. This Part gives particular attention to section 18 of the AIA, pursuant to which Congress established a special post-grant review proceeding exclusively for financial business method patents.¹⁹ It also highlights some of the most recent patent reform proposals currently pending before Congress.

Part V turns from the banks’ patent reform activity to their patent acquisition activity and examines the current patent holdings of certain large financial institutions. This Part looks not only at the quantity of patents that big banks are amassing, but also considers the nature of the inventions being patented and the possible reasons why some banks have started patenting in substantially greater numbers.

Finally, Part VI of the Article considers the implications of big banks’

16. Paul Michel, *Rein in the Big Bank Bail-Out*, PATENTLY-O (July 7, 2011), <http://www.patentlyo.com/patent/2011/07/guest-post-rein-in-the-big-bank-bail-out.html>.

17. See *infra* Part IV.C (addressing the most recent set of patent reform proposals).

18. 149 F.3d 1368 (Fed. Cir. 1998).

19. See *infra* Part IV (describing the recently created administrative review process for financial business method patents).

participation in our patent system. We argue that big banks have already exercised their political power to influence lawmakers once, and expect that they will continue to do so in the future.²⁰ Given what little experience banks have in the patent arena, and the fundamental differences between financial and technological innovation, the banks' considerable influence on innovation policy is cause for concern. Moreover, potential litigation and regulatory implications associated with the banks' expanding patent portfolios suggest that banks should proceed with caution into the uncharted territory of financial patents.

I. CHARACTERISTICS OF FINANCIAL INNOVATION

A. *Defining Financial Innovation*

Dictionary definitions of "innovation" focus on something that is "new or different." Yet, equating innovation with novelty seems overly neutral, failing to capture the positive spin that seems associated with "innovation." In Webster's unabridged dictionary, the first definition is the "introduction of something new" followed by this illustration: "as the driving force in practical economic advance."²¹ The illustration of the definition seems to better capture the implication often associated with innovation. In other words, innovation is not simply something new but is progressive.

"Financial innovation" carries its own particular meaning. Tufano's definition focuses on newness and widespread adoption: "Broadly speaking, financial innovation is the act of creating and then popularizing new financial instruments as well as new financial technologies, institutions and markets."²² In their survey of empirical studies on financial innovation, Frame and White define it as "something new that reduces costs, reduces risks, or provides an improved product/service/instrument that better satisfies participants' demands."²³ We prefer the second definition because it better captures the positive/aspirational nature of innovation.

20. See *infra* Part VI (discussing the role of big banks in the patent reform debate).

21. WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY OF THE ENGLISH LANGUAGE UNABRIDGED 1166 (1986) (defining innovation as "1: the act or an instance of innovating: the introduction of something new (~ as the driving force in practical economic advance—*Times Lit. Supp.*) 2: something that deviates from established doctrine or practice . . . CHANGE, NOVELTY . . .").

22. Peter Tufano, *Financial Innovation*, THE HANDBOOK OF THE ECONOMICS OF FINANCE 4 (Stulz, Lerner, Villalongo, eds., 2002).

23. W. Scott Frame & Lawrence J. White, *Empirical Studies of Financial Innovation: Lots of Talk, Little Action?* 3 (2002), available at http://www.philadelphiafed.org/research-and-data/events/2002/financial-services-and-payments/papers/frame_white.pdf.

Financial innovation can be categorized into groups: new products or services (e.g., structured investments), new processes/procedures (e.g., risk management systems), and new organizations (e.g., internet banking).²⁴ While such groupings may be useful in some contexts, innovations can also fall into more than one grouping or simply defy categorization. Because of the limitations associated with grouping financial innovations by type, they are also sometimes identified by function (e.g., managing risk; price discovery; etc.).²⁵

B. *Why Innovate?*

Firms innovate for many reasons. Financial institutions may be motivated to innovate to respond to macroeconomic conditions such as inflation, interest and exchange rates. Innovation can breed more innovation as growth in new technologies spurs other advances. Moreover, the avoidance of tax and regulatory constraints are among the motivations cited prominently.²⁶

Yet, the primary motivators for financial innovation are customer demand and firm profits. In Stefania Fusco's study of patents on financial methods, survey respondents reported that the main incentive for innovation "was the need to satisfy clients' demand and generate profits."²⁷

24. See *id.*. For further discussion of different types of innovation, see OECD's OSLO MANUAL: GUIDELINES FOR COLLECTING AND INTERPRETING INNOVATION DATA 27 (3d ed. 2005)..

25. Merton and Bodie identified six core functions of the financial system:

To provide ways of clearing and settling payments to facilitate trade. To provide a mechanism for the pooling of resources and for the subdividing of shares in various enterprises. To provide ways to transfer economic resources through time, across borders, and among industries. To provide ways of managing risk. To provide price information to help coordinated decentralized decision-making in various sectors of the economy. To provide ways of dealing with the incentive problems created when one party to a transaction has information that the other party does not or when one party acts as agent for another.

Robert C. Merton and Zvi Bodie, *A Conceptual Framework for Analyzing the Financial System* 2 (1995) available at <http://www.nek.lu.se/NEKENO/Finance%20B/A%20Framework%20for%20Analyzing%20the%20Financial%20System.pdf>. The Bank of International Settlements adopted a functional approach. Bank of International Settlements, *Recent Innovations in International Banking* (1986), available at <http://www.bis.org/publ/ecsc01a.pdf>; see also Tufano, *supra* note 22, at 8.

26. For further discussion of conditions that urge financial innovation, see Dionisis Th. Philippas & Costas Siriopoulos, *Is the Progress of Financial Innovation a Continuous Spiral Process?*, INVESTMENT MANAGEMENT AND FINANCIAL INNOVATIONS (2011), available at <http://ssrn.com/abstract=1805538>.

27. Stefania Fusco, *The Patentability of Financial Methods: The Market Participants'*

In this way, the incentives for financial innovation are no different from other forms of innovation. Companies innovate in response to competitive forces and customer demand. Today, competition is global and customer demand for new products, in particular, is high.²⁸ This puts increased pressure on firms to not just innovate, but innovate strategically and quickly.

C. Benefits and Costs of Financial Innovation

On the eve of the Financial Crisis, Federal Reserve Chairman Ben Bernanke described the costs and benefits of financial innovation:

Financial innovation has great benefits for our economy. The goal of regulation should be to preserve those benefits while achieving important public policy objectives, including financial stability, investor protection, and market integrity. Although financial innovation promotes those objectives in some ways, for example by allowing better sharing of risks, certain aspects of financial innovation—including the complexity of financial instruments and trading strategies, the illiquidity or potential illiquidity of certain instruments, and explicit or embedded leverage—may pose significant risks. These risks should not be taken lightly.²⁹

As observed by Chairman Bernanke, while innovation yields profits for the innovator, it potentially provides benefits to the broader public as well. The last several decades have witnessed the development of new financial products with potential benefits to many parties. Securitization³⁰ of mortgages, for example, provides a mechanism for taking an illiquid asset (residential mortgages) and making it liquid (sold as part of a securitized pool of mortgages). Such liquidity enhances the financial stability of the mortgage originator. Furthermore, securitized pools of assets can serve to

Perspectives, 45 LOY. L.A. L. REV. 1, 17 (2011) [hereinafter Fusco, *Patentability of Financial Methods*].

28. See, e.g., Sridhar Balasubramanian, *Insight Into Innovation: Why Companies Must Innovate*, UNC KENAN-FLAGLER NEWS (Mar. 22, 2013), <http://www.kenan-flagler.unc.edu/news/2013/03/why-companies-must-innovate>.

29. Ben S. Bernanke, Chairman, Bd. of Governors of the Fed. Reserve Sys., Regulation and Financial Innovation, Speech delivered at the Federal Reserve Bank of Atlanta's 2007 Financial Markets Conference, Sea Island, Georgia (May 15, 2007), *transcribed at* www.federalreserve.gov/newsevents/speech/bernanke20070515a.htm.

30. The term "securitization" has many definitions. The FDIC's regulations define securitization as "the issuance by an issuing entity of obligations for which the investors are relying on the cash flow or market value characteristics and the credit quality of transferred financial assets (together with any external credit support . . .) to repay the obligations." 12 C.F.R. § 360.6(a)(7) (2013). For a comprehensive discussion of the term, see Jonathan C. Lipson, *Re: Defining Securitization*, 85 S. CAL. L. REV. 1229 (2012).

lower the cost of credit, making loans available to more diverse borrowers. Securitization also offers benefits to investors. Complex instruments like tranching securitizations offer a variety of risk/return depending on investor goals.³¹ Similarly, innovative derivative products offer financial benefits to many. Such products allow firms to hedge against all kinds of risks, ranging from changes in the price of a commodity to the default of a contract counterparty. Moreover, innovative processes also offer wide-ranging benefits. The development of more and more sophisticated risk management systems has been seen as essential to the growing sophistication of financial products. In fact, bank regulators have come to rely on the effectiveness of firms' own internal risk management as an essential part of the regulatory regime.³² Finally, innovative organizations, such as internet-only banks,³³ allow banks to avoid costs associated with physical location and provide convenient services to bank customers. Other new business structures, such as the special purpose vehicle ("SPV"), are essential to the creation of innovative financial products.³⁴

As Chairman Bernanke also observed, however, innovation can be costly to society. New financial products can be costly to consumers because the product includes hidden fees or even abusive contract terms. Investors can also suffer when complex financial products shroud inherent risks.³⁵ With regard to derivatives in particular, the Financial Crisis Inquiry Commission found that the unregulated over-the-counter derivatives market contributed significantly to the Financial Crisis.³⁶ Moreover,

31. See generally Kimberly D. Krawiec, *More than Just "New Financial Bingo": A Risk-Based Approach to Understanding Derivatives*, 23 J. CORP. L. 1, 6 (1997) (discussing derivatives as risk management tools).

32. See generally HEIDI MANDANIS SCHOONER & MICHAEL W. TAYLOR, *GLOBAL BANK REGULATION: PRINCIPLES AND POLICIES* 171-74 (2010) (discussing the use of internal risk management models for purposes of setting regulatory capital requirements); Robert F. Weber, *An Alternative Story of the Law and Regulation of Risk Management*, 15 U. PA. J. BUS. L. 1005 (2013) (tracing the history of the regulation of risk management in the banking industry).

33. Ally Bank, a division of Ally Financial (formerly, GMAC), had no branches or physical locations.

34. In a securitization, the original owner of the financial assets (e.g., mortgages) transfers the title of those assets to a SPV. The SPV funds its acquisition of those assets by issuing its own securities and selling those securities to investors. For an extensive discussion of SPVs and securitization, see Gary B. Gorton & Nicholas S. Souleles, *Special Purpose Vehicles and Securitization*, (Fed. Reserve Bank of Philadelphia Working Paper No. 05-21, 2005), available at <http://dx.doi.org/10.2139/ssrn.713782>.

35. For a full discussion of the point in the context of private-label mortgage-backed securities, see Adam J. Levitin & Susan M. Wachter, *Explaining the Housing Bubble*, 100 GEO. L.J. 1177 (2012).

36. THE FIN. CRISIS INQUIRY COMM'N, THE FIN. CRISIS INQUIRY REPORT xxiv (Jan. 2011), available at <http://www.gpo.gov/fdsys/pkg/GPO-FCIC/pdf/GPO-FCIC.pdf>. The FCIC also found mortgage securitization to be a contributing factor in the crisis. *Id.* at xxiii.

institutions may be overconfident in new processes and take on unmanageable risk. For example, financial institutions and their regulators relied heavily on value at risk (“VaR”),³⁷ a risk management concept originally developed by Banker’s Trust and pioneered by J.P. Morgan.³⁸ The reliance on VaR turned out to be quite problematic in the run up to the Financial Crisis since measures of VaR often relied on data from relatively short periods of time (e.g., 12 months) and underestimated the impact of low probability events (the “fat tails” problem).³⁹ Finally, innovative organizations can be costly to manage and regulate if existing systems do not translate well to the innovative structure.

II. PATENTABILITY OF FINANCIAL INNOVATIONS

Innovation suffers if new products and services can be copied quickly and inexpensively by competitors. Appropriability, therefore, becomes an important consideration in innovation.⁴⁰ While patent protection may provide the appropriate incentive in some industries, such as pharmaceuticals, it is not necessarily a good fit for others. For instance, financial innovations have traditionally been protected by means other than patents, including trade secrets and first mover advantages. Paul Glaser, a Citigroup executive, once observed about financial innovation:

When an innovation like mortgage-backed securities appears, specialist teams are quickly staffed and equipped at any bank that wants to get into the market. New hardware is deployed and software is written to support the instrument within months. Compare that to the speed of innovation at General Motors, for example. It will take seven years to bring its Saturn automobile to market⁴¹

The speed at which financial innovation occurs was one reason the

37. VaR is a statistical model used to estimate the maximum amount that a given portfolio of financial assets is likely to lose over a specified period of time.

38. GILLIAN TETT, FOOL’S GOLD: HOW THE BOLD DREAM OF A SMALL TRIBE AT J.P. MORGAN WAS CORRUPTED BY WALL STREET GREED AND UNLEASHED A CATASTROPHE 33-34 (2009).

39. For a detailed discussion of the problems with risk management systems prior to the Financial Crisis, see THE TURNER REVIEW: A REGULATORY RESPONSE TO THE GLOBAL BANKING CRISIS. FIN. SRVS. AUTH. (Mar. 2009), available at http://www.fsa.gov.uk/pubs/other/turner_review.pdf.

40. “Appropriability” refers to the mechanisms by which firms seek to recoup their investment in innovation. Robert P. Merges, *The Uninvited Guest: Patents on Wall Street*, (UC Berkeley Sch. of Law Pub. Law & Legal Theory Research Paper No. 126 2003), available at <http://ssrn.com/abstract=410900>.

41. Paul F. Glaser, *The Intersection of Technology and Financial Services*, in INNOVATION AND TECHNOLOGY IN THE MARKETS: A REORDERING OF THE WORLD’S CAPITAL MARKET SYSTEMS 13, 18 (Daniel R. Siegel, ed., 1990).

industry historically did not rely on patents. Another was the widely held belief that financial innovations and other business methods were simply not subject to patent protection.

A. *Protecting Financial Innovation*

Innovation is protected and incentivized in myriad ways. The United States has four primary intellectual property regimes—copyright, trademark, patent, and trade secret—and each varies in scope, subject matter, and period of protection.⁴² Some of our most economically important industries rely heavily on intellectual property rights for success, including entertainment, automotive, electronics, semiconductor, and pharmaceutical, to name just a few.⁴³ How best to safeguard innovation will not only depend on the industry, but will also be influenced by the nature of the innovative product/process, the innovator's size and resources, and the innovator's ultimate objectives in seeking intellectual property protection.

To be sure, the use of patents to protect innovative works is much more common today than in the past. The number of patents issued by the PTO increased five-fold between 1963 and 2012.⁴⁴ This rapid growth of patent activity is attributable to various factors, such as the expanding concept of patentable subject matter, the explosion of innovation resulting from the digital revolution, and the establishment of the Federal Circuit.⁴⁵

Yet, in a study of manufacturing firms, Cohen found that “patents are still not the major mechanism for appropriating returns to innovations in most industries. Instead, we find that the key appropriability mechanisms in most industries are secrecy, lead time and complementary capabilities [e.g., sales, marketing, service].”⁴⁶ Historically, these innovation norms

42. See ROBERT P. MERGES, PETER S. MENELL & MARK A. LEMLEY, *INTELLECTUAL PROPERTY IN THE NEW TECHNOLOGICAL AGE* 26-27 (Vicki Been et. al. eds., 6th ed. 2012).

43. See, e.g., Cecilia H. Gonzalez, Juliana M. Cofrancesco & Nikole R. Salata, *The Parallel Universes of the US ITC & the District Courts*, 10 THE SEDONA CONFERENCE JOURNAL 167, 167 (2009) (discussing the increasing importance of intellectual property in the U.S. economy and its effects on the USITC and district courts).

44. U.S. Patent & Trademark Office, *U.S. Patent Statistics, Calendar Years 1963-2012*, available at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.pdf.

45. See Merges, Menell & Lemley, *supra* note 42, at 127-28 (listing the principal modes of legal protection for various types of intellectual work); John R. Allison & Emerson H. Tiller, *The Business Method Patent Myth*, 18 BERKELEY TECH. L.J. 987, 991 (2003) (noting the increase in patents on internet business methods after the Federal Circuit decision in *State Street*).

46. Wesley M. Cohen, Richard R. Nelson & John P. Walsh, *Protecting Their Intellectual Assets: Appropriability Conditions and Why U.S. Manufacturing Firms Patent (Or Not)* 24, (Nat'l Bureau of Econ. Research Working Paper No. 7552, 2000), available at http://www.business.otago.ac.nz/econ/courses/econ304/NBER_patent_paper.pdf.

carried over to the financial services industry as well. In examining cross border securitizations, for example, Frankel observed that financial institutions rarely seek patents to protect the value of their innovations but are rewarded in other ways, like reputational gains, tacit knowledge, and first mover advantages.⁴⁷ Indeed, at one time, patents were not an apparent option for financial institutions because their innovations consisted mostly of business methods, which were deemed improper subject matter.⁴⁸ That changed in the late 1990s, however, with the Federal Circuit's decision in *State Street Bank and Trust Co. v. Signature Financial Group*.⁴⁹

B. *State Street and the Patentability of Business Methods*

Patentability rests on five essential elements: proper subject matter, utility, novelty, non-obviousness, and disclosure.⁵⁰ Although inventions must satisfy all of these requirements to be patentable, the proper subject matter requirement is of particular importance for financial innovations. With regard to subject matter, § 101 of the U.S. Patent Act provides: "Whoever invents or discovers any new and useful *process*, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."⁵¹ The Act further defines a process as "process, art or *method*, and includes a new use of a known process, machine, manufacture, composition of matter, or material."⁵² Thus, methods clearly constitute patentable subject matter, but the Act leaves open the question as to whether § 101 encompasses *all* kinds of methods—including financial and other business methods—or whether it is limited to more traditional subject matter, such as chemical processes and methods of manufacturing.⁵³

47. Tamar Frankel, *Cross-Border Securitizations: Without Law, But Not Lawless*, 8 DUKE J. COMP. & INT'L L. 255 (1998); see also TETT, *supra* note 38, at 20 ("In banking, however, patents haven't traditionally been an option."); John F. Duffy & John A. Squires, *Disclosure and Financial Patents: Revealing the Invisible Hand*, 1, 3 (Suomen Pankki Bank of Finland & Centre for Econ. Policy Research Conference, Oct. 2010) ("Trade secrecy has long been one of the primary, and perhaps even *the primary*, legal engine by which financial firms could keep their innovations proprietary.") (emphasis in original), available at http://www.suomenpankki.fi/en/tutkimus/konferenssit/konferenssit_tyopajat/Documents/CEPR2008/CEPR2008_DuffySquires_paper.pdf.

48. See, e.g., *In re Alappat*, 33 F.3d 1526, 1541 (Fed. Cir. 1994) *abrogated by In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008) (holding that business methods do not constitute statutory subject matter).

49. *State St. Bank & Trust Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368 (Fed. Cir. 1998), *abrogated by In re Bilski*, 545 F.3d 943 (Fed. Cir. 2008).

50. See 35 U.S.C. § 101 (discussing subject matter and utility); § 102 (defining novelty); § 103 (defining non-obviousness); § 112 (defining disclosure).

51. 35 U.S.C. § 101 (emphasis added).

52. 35 U.S.C. § 100(b) (emphasis added).

53. See *Bilski v. Kappos*, 130 S. Ct. 3218, 3239 (2010) (Stevens, J., concurring) (stating

Whether the fast moving advances in the business world are proper subject matter for patentability purposes is a question with a long, complex, and somewhat inconsistent history. Several justices of the Supreme Court recently explained that “[f]or centuries, it was considered well established that a series of steps for conducting business was not, in itself, patentable.”⁵⁴ That position is substantiated by a 1908 Second Circuit decision in which the court held that a method of bookkeeping “designed to prevent frauds and speculation by waiters and cashiers in hotels and restaurants” was merely a “system of transacting business” and, thus, not patentable subject matter.⁵⁵ Still, other evidence tends to show that business methods were in fact patentable in the early years of our nation. A recent study by Michael Risch identifies a number of business method patents issued in the nineteenth century.⁵⁶ Indeed, the earliest business method patent in the financial services industry dates back to a 1799 invention titled “Detecting Counterfeit Notes.”⁵⁷

Further complicating the question of whether business methods are patentable is the fact that most modern business methods are embodied in computer software. While a software-embodied business method may constitute a “process” under § 101, attempts to patent software often collide with the long-established rule that laws of nature, physical phenomena, and abstract ideas are not patentable subject matter.⁵⁸ In *Gottschalk v. Benson*, for example, the Supreme Court held that a software program that converted binary-coded decimals into pure binary numerals was not patentable based on a “natural principles” exception to § 101.⁵⁹ In doing so, the Court emphasized that its decision did not preclude the patentability of software programs *per se*. Rather, the Court found that in this particular case the mathematical formula for converting decimals into binary code had no practical application outside of its use in computers. Therefore, granting a patent on the software at issue “in practical effect would be a patent on the algorithm itself.”⁶⁰

that “the text of § 101 does not on its face convey the scope of patentable processes”).

54. *Id.* at 3232 (Stevens, J. concurring).

55. *Hotel Sec. Checking Co. v. Lorraine Co.*, 160 F. 467, 467 (2d Cir. 1908).

56. Michael Risch, *America’s First Patents*, 64 FLA. L. REV. 1279, 1320 (2012).

57. U.S. PATENT & TRADEMARK OFFICE, *A USPTO White Paper: Automated Financial or Management Data Processing Methods (Business Methods)* at 2, available at <http://www.uspto.gov/web/menu/busmethp/whitepaper.pdf>.

58. *Bilski*, 130 S. Ct. at 3221; *Diamond v. Diehr*, 450 U.S. 175 (1981); *Parker v. Flook*, 437 U.S. 585 (1978); see also Peter S. Menell, *Forty Years of Wondering in the Wilderness and No Closer to the Promise Land: Bilski’s Superficial Textualism and the Missed Opportunity to Return Patent Law to its Technological Moorings*, 63 STAN. L. REV. 1289, 1295-96 (2011) (discussing origins of “natural principles” and their exceptions to patentable subject matter).

59. *Gottschalk v. Benson*, 409 U.S. 63 (1972).

60. *Id.* at 72.

Almost a decade later, the Supreme Court in *Diamond v. Diehr* came to a different conclusion and upheld a software patent under § 101.⁶¹ In *Diehr*, the claimed invention was a computer-implemented process for molding uncured synthetic rubber into cured precision products.⁶² Although the PTO rejected the patent application on the grounds that the claims were drawn to nonstatutory subject matter, the Court of Customs and Patent Appeals (predecessor to the Federal Circuit) reversed.⁶³ The Supreme Court granted certiorari and affirmed the lower court's decision that the invention constituted patentable subject matter. In support of its decision, the Court distinguished the facts of *Diehr* from those of *Gottschalk*:

[T]he respondents here do not seek to patent a mathematical formula. Instead, they seek patent protection for a process of curing synthetic rubber. Their process admittedly employs a well-known mathematical equation, but they do not seek to preempt the use of that equation. Rather, they seek only to foreclose from others *the use of that equation in conjunction with all of the other steps in their claimed process . . .* Obviously, one does not need a "computer" to cure natural or synthetic rubber, but if the computer use incorporated in the process patent significantly lessens the possibility of "overcuring" or "undercuring," the process as a whole does not thereby become unpatentable subject matter.⁶⁴

The *Diehr* claims, in other words, did not seek patent protection for a mathematical algorithm in the abstract.⁶⁵ Instead, the claims sought protection for a software-embodied process that used an algorithm to "[perform] a function which the patent laws were designed to protect"—namely, to transform or reduce an article to a different state or thing.⁶⁶

Following the decision in *Diehr*, software patents were often treated as "conventional industrial processes that were accomplished using a computer, which computer just happened to run software."⁶⁷ Eventually, though, this hide-the-software game came to an end. In *State Street Bank & Trust Co. v. Signature Fin. I Grp.*,⁶⁸ the Federal Circuit was squarely faced with the question of whether a business method embodied in software constituted patentable subject matter under § 101.

61. 450 U.S. 175 (1981).

62. *Id.* at 177.

63. *Id.* at 179-81.

64. *Id.* at 187 (emphasis added).

65. *Id.* at 192.

66. *Id.*

67. *Merges, supra* note 40, at 3.

68. 149 F.3d 1368 (Fed. Cir. 1998). The system facilitated partnership (i.e., favorable) tax treatment. In this sense, it is an example of regulatory arbitrage.

The invention in *State Street* was a financial process that calculated and allocated costs, expenses, profits, etc. among related mutual funds.⁶⁹ Like most financial patents, plaintiff Signature's patent fell within Class 705 of the PTO's patent classification system, which is described as "Data Processing: Financial Business Practice, Management, or Cost/Price Determination."⁷⁰ At the trial court, defendant State Street moved for summary judgment on the ground that the patent was invalid under § 101. The district court agreed and granted summary judgment. Signature appealed to the Federal Circuit.⁷¹

In a seminal opinion, the Federal Circuit reversed and remanded, concluding that the patent claims were directed toward statutory subject matter.⁷² On its way to this decision, the Federal Circuit grappled with two difficult issues: (1) the patentability of business methods and (2) the patentability of software inventions that use mathematical algorithms. With respect to the former, the Federal Circuit struck down what the trial judge had called the "business methods exception" to patentability.⁷³ The court explained that this exception was "ill-conceived" because nothing in § 101 suggested that business methods should be treated differently than other types of processes.⁷⁴ Business method patents are proper subject matter, the court reasoned, as long as they satisfy the other requirements of patentability—utility, novelty, non-obviousness, and disclosure—and do not fall within the natural principles exception to § 101.⁷⁵

Turning then to the natural principles exception, the Federal Circuit held that the invention at issue in *State Street* was not a law of nature, physical phenomenon, or abstract idea.⁷⁶ As in *Diehr*, the invention was not merely a mathematical algorithm in the abstract, but a process that utilized a mathematical algorithm to produce a "useful, concrete and tangible result"—namely "a final share price momentarily fixed for recording and reporting purposes and even accepted and relied upon by regulatory authorities and in subsequent trades."⁷⁷ Because the software

69. *Id.* at 1370.

70. Allison & Tiller, *supra* note 45, at 1025 (referring to PTO's patent classification system—"Data Processing: Financial Business Practice, Management, or Cost/Price Determination."). "The PTO created Class 705 in 1997 [(the year before *State Street*)] from the business and cost/price subclasses of Classes 395 and 364." *Id.* "There are other classes of patents that are relevant to financial services. For example, Class 109 is for safes, bank protection or related device; Class 453 is for coin handling; and Class 283 covers printed matter including checks and deposit slips." *Id.*

71. *Id.*

72. *Id.*

73. *Id.* at 1375-77.

74. *Id.* at 1373, 1375-1377.

75. *Id.* at 1375-77.

76. *Id.* at 1375-77.

77. *Id.* at 1373 (internal quotations omitted).

algorithm could be applied in a useful way, the Federal Circuit concluded it was proper statutory subject matter under § 101.⁷⁸

In January 1999, the Supreme Court denied certiorari in *State Street*, allowing the Federal Circuit's decision to stand. Shortly thereafter, in *AT&T Corp. v. Excel Commc'n, Inc.*,⁷⁹ the Federal Circuit was given another chance to consider the patentability of business methods. Relying on *State Street*, the Federal Circuit reaffirmed that business methods were not categorically excluded under § 101 and held that the method at issue in *AT&T*—a process for billing telephone calls at different rates depending on the long-distance carrier used—was patentable.⁸⁰

C. Reactions to the State Street Decision

State Street took many by surprise and triggered strong negative reactions from commentators, businesspeople, and legislators alike. Some scholars argued that *State Street* expanded the concept of patentable subject matter in a way that threatened the integrity of our patent system.⁸¹ Others did not object to the patentability of business methods on subject matter grounds, but instead worried that the PTO would improperly grant business method patents for inventions that lacked novelty or were obvious because of inadequate written prior art in the field.⁸²

Yet, it was corporate America's outcry about business method patents that garnered real attention, most importantly from Congress. The business world was convinced that *State Street* would wreak havoc on industry (particularly financial services) by embroiling companies in frivolous lawsuits over patents that never should have been issued in the first place.⁸³

78. *Id.*

79. 172 F.3d 1352 (Fed. Cir. 1999).

80. *Id.* at 1357-58.

81. See, e.g., Alan L. Durham, "Useful Arts" in the Information Age, 1999 BYU L. REV. 1419, 1526-28 (1999) (exploring *State Street*'s aftermath and predicting an increase in patents on "non-technological" innovations"); John R. Thomas, *The Patenting of the Liberal Professions*, 40 B.C. L. REV. 1139 (1999) [hereinafter, Thomas, *Liberal Professions*] (discussing how *State Street* presents the latest in a series of cases testing the boundaries of the "useful arts").

82. See, e.g., Rochelle Cooper Dreyfuss, *Are Business Method Patents Bad for Business?*, 16 Santa Clara COMPUTER & HIGH TECH. L.J. 263, 268-69 (2000) (arguing that the standards for novelty and obviousness are not absolute and will be adjusted for business method patents); Rebecca S. Eisenberg, *Analyze This: A Law and Economics Agenda for the Patent System*, 53 VAND. L. REV. 2081, 2090 (2000) (explaining that for areas like business methods which were traditionally thought of as ineligible for patent protection, patent examiners have few sources of prior art).

83. See, e.g., Robert M. Kunstadt, *Opening Pandora's Box*, THE RECORDER, Jan. 1999, at 29 available at LEXIS (predicting a "large-scale disruption of U.S. commerce, as sharp operators move to patent business methods and assert patents against the unsuspecting"); Josh McHugh, *Barbed Wire on the Internet*, FORBES, May 17, 1999, at 183 (stating that

While some deemed this reaction “hysterical,”⁸⁴ Congress responded in record time by enacting the First Inventor Defense Act of 1999 to stem the impact of *State Street*. Congress did not reverse the Federal Circuit’s holding that business methods constitute patentable subject matter under § 101, but rather created an infringement defense for an inventor of a business method that was later patented by another.⁸⁵ The Act, sponsored by Senator Schumer of New York, provided for a stop-gap measure that protected alleged infringers from suit as long as they (i) reduced the business method to practice at least one year before the effective filing date of the patent, and (ii) commercially used the method before the effective filing date.⁸⁶ In other words, Congress established “prior user rights” for business method patents.

Like Congress, the PTO also took steps to mitigate the impact of *State Street*. In 2000, the agency launched various initiatives and instituted new examination procedures to enhance the quality of business method patents.⁸⁷ First, the PTO planned to hire and specially train additional examiners who were qualified to review business method/Class 705 applications.⁸⁸ Second, the PTO established industry outreach programs to encourage dialogue about business method patents and expand the PTO’s prior art database for better searching.⁸⁹ Finally, the PTO put in place various quality control mechanisms for business method patents, including a second level—or “second pair of eyes”—review of Class 705 applications.⁹⁰

patents may become “the barbed wire of the Internet”); Jaret Seidberg, *Ruling Threatens Banks With Patent Lawsuits*, AM. BANKER, Sept. 2, 1998, at 3 (positing that *State Street* will bring hundreds of patent infringement suits to the financial services industry).

84. See Carol B. Oberdorfer, “Boom” in Business Method Patent Filings Has Followed *State Street* Ruling, PTO Says, PAT. TRADEMARK & COPR. J. (BNA), Dec. 10, 1998, at 115 (discussing the reactions of banks and businesses affected by the *State Street* ruling).

85. PUB. L. NO. 106-113, § 1000(a)(9), 113 Stat. 1536, 1501A-555. In 2000 and 2001, additional bills addressing business method patents were introduced in Congress, but failed to gain traction. Allison & Tiller, *supra* note 45, at 1021-24.

86. PUB. L. NO. 106-113, § 1000(a)(9), 113 Stat. 1536, 1501A-555; 145 CONG. REC. S14,836 (daily ed. Nov. 18, 1999) (statement of Sen. Schumer) (justifying the prior user defense as providing certainty for the financial services industry in “the face of uncertainty presented by the Federal Circuit’s decision in the *State Street* case”). Of course, this commercial use had to be “secret” or else otherwise it would constitute invalidating prior art against the patented invention.

87. USPTO White Paper, *supra* note 57, at 1.

88. *Id.* at 9-10.

89. *Id.* at 22; Business Method Patents: Hearings on H.R. 1332 Before the House Comm. on the Judiciary, Subcomm. On Courts, the Internet & Intell. Prop., 107th Cong. 48 (2001) (statement of Nicholas P. Godici, Acting Under Secretary of Commerce for Intellectual Property and Acting Director of the U.S. Patent and Trademark Office).

90. U.S. Patent & Trademark Office, *Patent Quality Improvement: Expansion of the Second-Pair-of-Eyes Review*,

Though these congressional and administrative measures assuaged some immediate concerns over *State Street*, the debate over business method patents persisted.⁹¹ In the years following the Federal Circuit's decision, the number of business method patents granted by the PTO steadily rose, and critics continued to question the wisdom and legality of this practice.⁹² Moreover, as predicted in the wake of *State Street*, this increase in business method patents brought with it a proliferation of infringement litigation—ultimately leading to renewed calls for reform.

III. BUSINESS METHOD PATENTS FROM *STATE STREET* TO *BILSKI*

State Street naturally caused alarm for the banking world since the case involved financial institutions and financial products.⁹³ But the decision affected a number of other industries as well, particularly the emerging high tech sector. To be sure, *State Street* was decided at the height of the dot-com era when a slew of new business methods on purchasing, advertising, and other Internet-related activities were introduced.⁹⁴ With this convergence of circumstances, it is no small wonder that the past decade or so has witnessed an explosion of business method patents and litigation surrounding these patents.

A. *The Rise of Business Method Patents*

State Street sparked a significant uptick in applications for business method patents, and, at least initially, the number of Class 705 patents granted by the PTO correspondingly rose.⁹⁵ Before *State Street*, the most

<http://www.uspto.gov/web/offices/com/strat21/action/q3p17a.htm> (last visited Nov. 20, 2013); see also *USPTO White Paper*, *supra* note 57, at 21 (discussing the recommendation to expand the two-tiered review).

91. See Allison & Tiller, *supra* note 45, at 1007-17 (illuminating the ongoing debate in the wake of *State Street*).

92. See, e.g., John R. Allison & Starling D. Hunter, *On the Feasibility of Improving Patent Quality One Technology at a Time: The Case of Business Methods*, 21 BERKELEY TECH. L.J. 729, 730-31 (2006).

93. See *supra* note 83 and accompanying text (discussing the financial industry's reaction to *State Street*).

94. See Thomas, *Liberal Professions*, *supra* note 81, at 1140 (providing that following *State Street*, applicants "besieged the Patent Office with applications" [for] Internet-based business models" and other software.).

95. See *id.* (discussing how applicants seized upon *State Street* to seek patents for applications including financial software and Internet-based business models); Allison & Tiller, *supra* note 45, at 991 (explaining that software-embodied patents had been issued before *State Street*, but that number grew significantly after the decision); Carol B. Oberdorfer, *Patents: "Boom" in Business Method Patent Filings Has Following State Street Ruling, PTO Says*, Trademark & Copyright Daily (BNA), No. 57, at 115 (Dec. 10, 1998) (explaining that the PTO expected 300 business method-related patents in the first

Class 705 patents granted in a year since 1992 was 249; that number increased to 489 in 1998, 720 in 1999, and 736 in 2000.⁹⁶ Between 2001 and 2004, however, there was a marked decline in issued business method patents compared to the previous three years,⁹⁷ most likely resulting from the PTO's heightened examination procedures for these types of inventions.⁹⁸ That trend began to reverse itself in 2005 when the PTO granted 776 business method patents; by 2009, that number had grown to just shy of 2000.⁹⁹

Although we know that Class 705/business method patents have increased since *State Street*, it is difficult to ascertain which of these patents support financial products. That difficulty stems, at least in part, from the lack of consensus on a definition for financial products.¹⁰⁰ Still, a few scholars have undertaken empirical studies to collect more precise data on financial patenting, for example by eliminating certain subclasses of 705 patents or using key word searches to capture patents that were improperly classified.¹⁰¹ Despite using different methodologies, each of these empirical studies reaches the same conclusion: the number of financial patents has steadily risen.

Yet, it is important to bear in mind that financial patents are only one subset of business methods patents issued by the PTO.¹⁰² Indeed, one study

year following *State Street*).

96. U.S. Patent & Trademark Office, USPTO Patent Statistics, Patent Counts by Class by Year Report, available at <http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cbcby.pdf> (last modified April 2, 2013).

97. See *id.* (detailing that in the years 2001, 2002, 2003, and 2004, there were 485, 458, 444, and 323 Class 705 patents granted, respectively.).

98. See *supra* notes 87-90 (discussing additional measures taken by the PTO with respect to business method patents). In 2001, 2002, 2003, and 2004, there were 485, 458, 444, and 323 Class 705 patents granted, respectively.

99. U.S. Patent & Trademark Office, USPTO Patent Statistics, Patent Counts by Class by Year Report, available at <http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cbcby.pdf> (last modified April 2, 2013).

100. See, e.g., Josh Lerner, *The Litigation of Financial Innovations*, 53 J.L. & ECON. 807, 810 n.3 (2010) [hereinafter Lerner, *Financial Innovations*] (noting that “financial patents” could encompass innovations stemming from “banking, investing, payment systems, securities issuances, and trading”).

101. See Stefania Fusco, *Is the Use of Patents Promoting the Creation of New Types of Securities?*, 25 SANTA CLARA COMP. & HIGH TECH. L.J. 243, 263-64 (2009) (analyzing patents based on dividing financial securities into macro-categories); Robert M. Hunt, *Business Method Patents and U.S. Financial Services*, 1 (Feb. 2009), Supercedes Working Paper No. 07-21, available at <http://www.philadelphiafed.org/research-and-data/publications/working-papers/2008/wp08-10.pdf>; Josh Lerner, *Where Does State Street Lead? A First Look at Finance Patents, 1971-2000*, 5-7 (HBS FINANCE WORKING PAPER NO. 01-005, May 2000), available at <http://ssrn.com/abstract=224895> (analyzing financial formula and method patents); Josh Lerner, *The Two-Edged Sword: The Competitive Implications of Financial Patents* (2003) (on file with author).

102. Hunt, *supra* note 101, at 4.

estimates that less than one-tenth of all Class 705 patents are assigned to banks and other financial firms,¹⁰³ while the majority are issued to companies in the high tech sector like IBM, Microsoft, and Amazon.¹⁰⁴ In 2012, for example, the PTO granted IBM, Microsoft, and Amazon 262, 87, and 103 Class 705 patents, respectively.¹⁰⁵ To be sure, it was the litigation over these high tech business method patents, especially Amazon's "one-click" patent, that helped spur the outcry for reform.

B. Business Method Patent Litigation

It should come as no surprise that the number of patent suits filed in federal court has increased as the PTO has issued more patents.¹⁰⁶ In the past twenty-odd years, however, the rise in patent litigation has outpaced the increase in patent grants.¹⁰⁷ In fact, patent litigation is rising at a faster rate than any other type of civil litigation.¹⁰⁸ While there is no single cause of this surge in patent litigation, allowing patents on business methods has been a contributing factor.

Recent studies demonstrate that business method patents are indeed litigated at a significantly greater rate than other types of patents.¹⁰⁹

103. *Id.*

104. See U.S. Patent & Trademark Office, USPTO Statistics, Class 705, DP: Financial, Business Practice, Management, or Cost/Price Determination (Data Processing) 1969-2012, Extended Year Set – Patenting in Technology Classes, Breakout by Organization, available at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/tecasga/705_torg.htm [hereinafter USPTO Statistics, Class 705, Breakout by Organization] (identifying the above mentioned companies as being among the top ten receivers of such patents from 1969-2012).

105. *Id.*

106. U.S. Patent & Trademark Office, USPTO Statistics, Calendar Years 1963-2011, available at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.pdf.

107. Compare James Bessen & Michael J. Meurer, *PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK* 127 (Princeton Univ. Press 2008) (stating that ten times more patent suits were filed in U.S. federal courts in 2006 than in 1990) with U.S. Patent & Trademark Office, U.S. Patent Statistics, Calendar Years 1963-2011, available at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.pdf (demonstrating that 2.5 times more patents were issued by the USPTO in 2006 than 1990).

108. Andrew Beckerman-Rodau, F. Scott Kieff, Lawrence Sung & Thomas Woolston, *The New Private Ordering of Intellectual Property: The Emergence of Contracts as the Drivers of Intellectual Property Rights*, 4 J. BUS. & TECH. L. 5, 57 n.69 (2009); Lerner, *Financial Innovations*, *supra* note 100, at 818.

109. See Bessen & Meurer, *supra* note 107, at 213-14 (detailing how software patents are different than other patents as they are "particularly prone to litigation and to disputes over patent boundaries . . ."); John R. Allison, Emerson H. Tiller & Samanth Zyontz, *Patent Litigation and the Internet*, 2012 STAN. TECH. L. REV. 1, 6 (2012) (finding that Internet patents are between 7.5 and 9.5 times more likely to end up in infringement litigation); Lerner, *Financial Innovations*, *supra* note 100, at 818-19 (describing how the litigation rate for the most litigated technology group (drug and health) is still 7% less than the rate for financial patents).

Several theories may explain this phenomenon. For one, business method patents tend to have “unclear boundaries” that make infringement claims easier to assert against a broader group of potential defendants.¹¹⁰ Another possibility is that alleged infringers may be less willing to license and more willing to litigate business method patents because of questions surrounding their validity. Perhaps, instead, business method patents are litigated at higher rates because they are frequently owned by patent assertion entities (“PAEs”) rather than by competitors.¹¹¹ Whatever the reason, the fact remains that business method patents end up in court more often than other types of patents.

Since *State Street*, business method patent litigation has spread throughout the country. These suits have been filed in a number of different jurisdictions and involve a variety of inventions and litigants.¹¹² This Article highlights just a few of these litigation stories with a focus on high profile cases involving high tech and financial business method patents.

C. High Tech Business Method Patent Litigation

The list of patent suits involving high tech companies and high tech business methods is long.¹¹³ Yet a couple of these cases are worth mentioning because of their impact on the patent reform effort. In the 2001 “one-click patent” litigation, Amazon sued Barnes and Noble (“B&N”) for infringing U.S. Patent No. 5,960,411, which claimed a method of online shopping.¹¹⁴ The district court granted a preliminary injunction and required B&N to remove from its website a competing streamlined purchasing feature.¹¹⁵ The decision drew sharp criticism from members of the high tech community and scholars who were convinced that the PTO

110. *Id.* at 187; Allison, Tiller & Zyontz, *supra* note 109, at 5.

111. *See infra* note 179 and accompanying text (discussing patent assertion entities).

112. *See* Lerner, *Financial Innovation*, *supra* note 100, at 809-17; Allison, Tiller & Zyontz, *supra* note 109, at 39-82; Colleen V. Chien, *Of Trolls, Davids, Goliaths, and Kings: Narratives and Evidence in the Litigation of High-Tech Patents*, 87 N.C. L. REV. 1571, 1600 (2009) [hereinafter Chien, *Of Trolls*] (describing how patent litigation is brought by entities ranging from private and public corporations to nonprofits).

113. *See e.g.*, Chien, *Of Trolls*, *supra* note 112, at 1573-77 (mentioning the high profile patent suits involving Qualcomm and Broadcom).

114. *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 73 F.Supp.2d 1228 (W.D. Wash. 1999); Henry H. Perritt, Jr., *The Internet at 20: Evolution of a Constitution for Cyberspace*, 20 WM. & MARY BILL RTS. J. 1115, 1138 (2012) (“The one-click method reduced the number of steps a consumer must take to order an item from an e-commerce site, and relieved a consumer from having to reenter all of his basic information, such as name, address, and credit card information.”).

115. *Amazon.com*, 73 F. Supp. 2d at 1249; John R. Thomas, *Liberty and Property in the Patent Law*, 39 HOUS. L. REV. 569, 577 (2002) [hereinafter, Thomas, *Liberty and Property*].

never should have granted the patent in the first place.¹¹⁶ Some argued that business methods should not constitute patentable subject matter, while others claimed that such patents should have been rejected on novelty or obviousness grounds.¹¹⁷ Ultimately, the Federal Circuit vacated the preliminary injunction, and the parties settled the dispute.¹¹⁸ Nevertheless, the “one-click” patent litigation became the poster child for everything wrong with our patent system.

Though *Amazon v. Barnes & Noble* is probably the most notorious business method patent suit, others have garnered significant attention too. Since the late 1990s, for example, Walker Digital has filed a series of lawsuits against technology companies like Microsoft, Google, Facebook, Amazon, Yahoo, and others for patent infringement.¹¹⁹ While defendants have won a few of these cases on the merits,¹²⁰ the vast majority of such cases end in settlements totaling tens of millions of dollars.¹²¹ According to its website, Walker Digital is a “privately held research and development lab” led by Jay Walker, the co-founder of Priceline.com and owner of hundreds of patents—most famously the reverse auction patent.¹²² In 1999, *Forbes* spotlighted Mr. Walker in an article, suggesting he is “an Edison for a new age.”¹²³ In addition, *Time* magazine twice named Walker as one

116. See Peter R. Lando, *Business Method Patents: Update Post State Street*, 9 TEX. INTELL. PROP. L.J. 403, 404-05 (2001) (explaining critics’ belief that the PTO mistakenly issued many business method patents because the Office was overworked, understaffed, and used search databases that were antiquated and ill-suited for such patent applications).

117. See, e.g., *id.*; Margo A. Bagley, *Internet Business Model Patents: Obvious by Analogy*, 7 MICH. TELECOMM. & TECH. L. REV. 253, 260-1 (2001) (arguing that business method patents often resemble what are normally considered un-patentable “ideas”).

118. *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1366 (Fed. Cir. 2001); Thomas, *Liberty and Property*, *supra* note 115, at 577.

119. See, e.g., Robert M. Hunt, *You Can Patent That?*, PHILA. FED. RESERVE BANK BUS. REVIEW 2001(Q1): 5-15, available at <http://www.ftc.gov/os/comments/intelproperty/comments/youcanpatentthat.pdf> (explaining Walker Digital’s decision to sue Microsoft’s Expedia Travel Service for infringing its patent on Priceline.com’s “reverse auction” process); John Letzing, *Founder of Priceline Spoiling for a Fight Over Tech Patents*, THE WALL ST. J. (Aug. 22, 2011), <http://online.wsj.com/article/SB10001424053111904070604576516211224146034.html> (explaining that Walker Digital has filed 30 patent infringement lawsuits aimed at hundreds of companies).

120. See *Walker Digital, LLC v. Microsoft Corp.*, No. 2011-1419 (Fed. Cir. 2012) (upholding summary judgment of non-infringement in favor of Microsoft).

121. See, e.g., Josh Lowensohn, *Report: Apple, Groupon Settle Walker Digital IP Suits*, CNET.COM (July 22, 2011), http://news.cnet.com/8301-27076_3-20082292-248/report-apple-groupon-settle-walker-digital-ip-suits/ (reporting that the settlement topped \$25 million).

122. About Us: *The Company*, WALKER DIGITAL WEBSITE (2011), http://www.walkerdigital.com/about-us_the-company.html.

123. Dylan Machan, *An Edison for a New Age?*, *Forbes* (May 17, 1999), available at <http://www.forbes.com/global/1999/0517/0210020a.html>.

of the “50 most influential business leaders of the digital age.”¹²⁴

Yet, in the eyes of many, Walker Digital and companies like it are nothing more than unscrupulous patent trolls who thwart innovation by forcing defendants to divert resources from research and development to litigation.¹²⁵ So, beginning in the early 2000s, Microsoft, Oracle, and other high tech leaders called for patent reform.¹²⁶ These companies pushed hard for an overhaul of the patent system,¹²⁷ and Congress responded by introducing the first patent reform bill in 2005.¹²⁸ Although it would take another six years for Congress to pass the AIA (as discussed later in the Article), these early efforts by the high tech industry undoubtedly played a key role in patent reform.

D. Financial Business Method Patent Litigation

Federal courts have also witnessed a spike in litigation involving financial business method patents. In fact, empirical evidence shows that within the category of business methods, patents related to financial innovations are especially likely to become the subject of a lawsuit.¹²⁹ Thus, for the past decade, many financial institutions with little prior patent experience have found themselves in court facing infringement charges, injunctions, and steep damage awards.¹³⁰

One early chapter of this litigation story involved eSpeed, the electronic bond-trading subsidiary of Cantor Fitzgerald LP.¹³¹ Around the late 1990s, eSpeed started building its portfolio of business method patents

124. *About Us: The Company*, *supra* note 122 (internal quotations omitted).

125. See Martin Campbell-Kelly, *Not All Bad: An Historical Perspective on Software Patents*, 11 MICH. TELECOMM. & TECH. L. REV. 191, 200-01 (2005) (describing hostility towards entities that obtain and enforce low quality patents); Letzing, *supra* note 119 (discussing concerns that the spike in patent litigation will have a chilling effect on innovation).

126. McCullagh, *supra* note 7; Interview with Brad Smith, Senior Vice President, General Counsel and Corporate Secretary, Microsoft Corporation, in Washington, D.C. (Mar. 10, 2005), available at <http://www.microsoft.com/en-us/news/features/2005/mar05/03-10patentreform.aspx>.

127. Chien, *Of Trolls*, *supra* note 112, at 1576; Coalition for Patent Fairness Website, available at <http://www.patentfairness.org/learn/why/>.

128. Patent Reform Act of 2006, S. 3818, 109th Cong. (2005-06).

129. Lerner, *Financial Innovation*, *supra* note 100, at 827 (finding that financial patents are litigated two to three dozen times more frequently than patents as a whole).

130. See *id.* at 807, 826 (concluding that financial firms are especially likely to be targeted and named as defendants in patent litigation actions.).

131. Marius Meland, *eSpeed Seeks Up to \$64M in Patent Suit Over Bond Trading System*, Law 360 (May 27, 2004), available at <http://www.law360.com/articles/1523/espeed-seeks-up-to-64m-in-patent-suit-over-bond-trading-system>.

related to electronic trading of futures and other commodities.¹³² Lawsuits against several exchanges and other financial entities ensued, with many of the early cases ending in lucrative settlements for eSpeed.¹³³ Litigation involving just one eSpeed patent, for instance, resulted in approximately \$50 million in revenue from settlement.¹³⁴ These high payouts not only spurred eSpeed to file additional infringement actions, but also inspired competitors to pursue patent litigation of their own.¹³⁵

While eSpeed sustained a widespread litigation campaign, it does not compare to DataTreasury. DataTreasury, a company founded by inventor Claudio Ballard, has sued more than seventy financial services firms for infringing its check-processing patents.¹³⁶ DataTreasury has litigated against major financial institutions like Bank of America, Citibank, J.P. Morgan, and Wells Fargo, all of which have settled and agreed to pay hefty licensing fees.¹³⁷ The one bank that proceeded to trial, U.S. Bancorp, suffered a huge loss when the patents were upheld and DataTreasury was awarded more than \$50 million in damages.¹³⁸ After filing an appeal, U.S. Bancorp ended up settling as well.¹³⁹ To date, DataTreasury has collected an estimated \$400 million in settlement/licensing fees since it began enforcing its patents just over a decade ago.¹⁴⁰

132. Phillipa Leighton-Jones, *Chicago Exchanges Settle Patent Litigation with eSpeed*, FINANCIAL NEWS (Aug. 27, 2002), <http://www.efinancialnews.com/story/2002-08-27/chicago-exchanges-settle-patent-litigation-with-espeed>.

133. *Id.*; Jonathan M. Barnett, *Property as Process: How Innovation Markets Select Innovation Regimes*, 199 YALE L.J. 384, 419 (2009); Marius Meland, *eSpeed, Nymex Settle Patent Dispute Over Trading Technology*, LAW 360 (Dec. 23, 2003), available at <http://www.law360.com/articles/665/espeed-nymex-settle-patent-dispute-over-trading-technology>; Press Release, *eSpeed and New York Mercantile Exchange Reach Settlement Agreement on Wagner Patent* (Dec. 22, 2003), available at <http://www.espeed.com/articles/article20031222.htm>.

134. Meland, *supra* note 133, at 1.

135. See, e.g., Marius Meland, *Competition: Incentive to Protect Proprietary Business Methods*, LAW 360 (Jan. 31, 2006), available at <http://www.law360.com/articles/5169/competition-incentive-to-protect-proprietary-business-methods> (describing how companies, such as Trading Technologies International Inc., have sued on similar patent infringement grounds).

136. Barnett, *supra* note 133, at 419; Jan Wolfe, *Herrick, Weil Knock Out investor's Suit Against DataTreasury*, AM LAW LITIGATION DAILY (May 14, 2013), available at http://www.americanlawyer.com/digestTAL.jsp?id=1202600128424&Herrick_Weil_Knock_Out_Investors_Suit_Against_DataTreasury&slreturn=20130514000239.

137. *Id.*

138. Jackie Stewart, *DataTreasury, U.S. Bancorp Settles Image-Capture Patent Dispute*, AM. BANKER (Dec. 27, 2011), http://www.americanbanker.com/issues/176_249/datatreasury-us-bancorp-item-capture-patent-1045195-1.html.

139. *Id.*

140. Robert Sterne, et al., *America Invents Act: The 5 New Post-Issuance Procedures*, 13 SEDONA CONF. J. 27 (2012).

Calling DataTreasury a thorn in the side of the financial industry is putting it mildly. When attempts to knock out DataTreasury's patents in court failed,¹⁴¹ banks looked for other ways to eliminate the threat. They initially turned to the PTO, but DataTreasury's patents survived reexamination.¹⁴² The banks then sought relief from Congress, lobbying Senators Schumer, Sessions, and others for a legislative solution.¹⁴³ The 2007 and 2009 versions of the patent reform bill included provisions preventing DataTreasury from collecting patent infringement damages from banks.¹⁴⁴ This approach was problematic, however, because it arguably constituted a taking of private property that would require the government to compensate DataTreasury.¹⁴⁵ Meanwhile, as the banks and their congressional allies searched for alternative solutions, the courts were taking a hard look at business method patents too.

E. Bilski

Questions about business method patents persisted after *State Street*. It was one thing for the Federal Circuit to say that business methods constitute patentable subject matter,¹⁴⁶ but another to establish criteria by which the patentability of those inventions could be assessed. In a series of cases since *State Street*, the courts have addressed § 101 patent eligibility for diverse technologies, including transitory signals,¹⁴⁷ diagnostic methods,¹⁴⁸ isolated DNA sequences,¹⁴⁹ and, most pertinent to this Article, methods of doing business.¹⁵⁰

141. Stewart, *supra* note 138.

142. Sterne, *supra* note 140, at 27.

143. See Barnett, *supra* note 133, at 425 (lobbying for relaxed legislation on patent restrictions); Letter from the Coalition of Patent Fairness to The Honorable Harry Reid, Majority Leader, U.S. Senate, and The Honorable Mitch McConnell, Republican Leader, U.S. Senate, Jan. 22, 2008, <http://www.sifma.org/issues/item.aspx?id=249> (urging Congress to pass patent reform legislation in order to promote innovation, growth, and balance in the patent system).

144. Barnett, *supra* note 133, at n.92; Jeffrey H. Birnbaum, *Lawmakers Move to Grant Banks Immunity Against Patent Lawsuit*, WASH. POST (Feb. 14, 2008), available at http://www.washingtonpost.com/wp-dyn/content/article/2008/02/13/AR2008021303731_pf.html.

145. U.S. CONST. amend. V; Birnbaum, *supra* note 144, available at http://www.washingtonpost.com/wp-dyn/content/article/2008/02/13/AR2008021303731_pf.html.

146. *State St. Bank & Trust Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368 (Fed. Cir. 1998).

147. *In re Nuijten*, 500 F.3d 1346 (Fed. Cir. 2007).

148. *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012).

149. *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 133 S. Ct. 2107 (2013).

150. *Bilski v. Kappos*, 130 S.Ct. 3218 (2010); *In re Comiskey*, 499 F.3d 1365 (Fed. Cir. 2007).

The first of the business method cases was *In re Comiskey*, which concerned a patent application directed toward a method for conducting mandatory arbitration.¹⁵¹ In that case, the PTO rejected Comiskey's application as obvious and the Federal Circuit affirmed, but on different grounds. Specifically, the court held that Comiskey's claims failed to satisfy § 101 because they were merely mental processes untied to a machine or other class of statutory subject matter; in short, the claims were simply abstract ideas.¹⁵² The Federal Circuit's decision to rely on § 101, rather than § 103, was notable because it signaled to the patent community a reigning in of the broad "useful, concrete, and tangible result" test announced a decade earlier in *State Street*.¹⁵³

This trend away from *State Street* and toward a more demanding § 101 analysis continued in *In re Bilski*. *Bilski* involved a financial innovation that provided a method for hedging risk in commodities trades.¹⁵⁴ The PTO rejected Bilski's application under § 101, *inter alia*, because the invention was not implemented on a specific apparatus.¹⁵⁵ Although Bilski's appeal was originally heard by a panel of the Federal Circuit, the court *sua sponte* ordered *en banc* review before the panel issued its decision.¹⁵⁶ The *en banc* court ultimately affirmed the PTO's rejection, yet the decision was highly fractured with a majority opinion, a concurrence, and three separate dissents.

As an initial matter, the majority reaffirmed the holding of *State Street* that business methods are not categorically excluded from § 101.¹⁵⁷ Aside from that, however, *State Street*'s precedential control came to an end as the majority proceeded to overrule the "useful, concrete or tangible results" test.¹⁵⁸ In its place, the court adopted the "machine-or-transformation" test, which provides that a business method is patentable if it (1) is tied to a specific machine or (2) transforms an article into a different state or thing.¹⁵⁹ Applying this new test, the majority held that Bilski's method was not statutory subject matter and therefore affirmed the PTO's rejection.¹⁶⁰

When the Supreme Court granted Bilski's petition for certiorari, many believed that sounded the death knell for business method patents. The Court heard oral arguments in November 2009 but did not issue its decision

151. *Id.* The court explicitly stated that it considered Comiskey's application as a business method patent. *Id.* at 1374.

152. *Id.* at 1376-78.

153. *State Street*, 149 F. 3d at 1373.

154. *Bilski v. Kappos*, 130 S. Ct. 3218, 3223 (2010).

155. *In re Bilski*, 545 F.3d 943, 950 (Fed. Cir. 2008) (*en banc*).

156. *Id.* at 949.

157. *Id.* at 960.

158. *Id.* at 960 n.19.

159. *Id.* at 959-60.

160. *Id.* at 964.

until the end of the term in June 2010.¹⁶¹ This unusually long delay caused some commentators to suggest that the Court was contemplating something ambitious, such as a complete bar of business method patents under § 101.¹⁶² Others predicted that Justice Stevens, who was retiring that year and had consistently taken a narrow view of patent rights, was authoring the opinion.¹⁶³ Briefly heartened by these predictions, opponents of business method patents were disappointed when they proved to be wrong.

The Supreme Court issued its decision in *Bilski* on the last day of the 2010 term. Contrary to expectations, Justice Kennedy authored the majority opinion joined by Justices Thomas, Alito, Scalia and the Chief Justice.¹⁶⁴ Justice Stevens did in fact write an opinion, but it was a concurrence in which Justices Ginsburg, Breyer, and Sotomayor joined. What all the justices agreed upon was the holding: *Bilski*'s method for hedging risk was not patentable subject matter.¹⁶⁵ They disagreed, though, on the rationale. The majority reasoned that business methods are not categorically excluded under § 101, but that this particular method could not be patented because it was merely an abstract idea.¹⁶⁶ The majority further explained that the Federal Circuit's machine-or-transformation test was not the sole means of proving proper subject matter.¹⁶⁷ Instead of using bright-line tests, the Court said, compliance with § 101 should be assessed on a situational basis.

Justice Stevens, on the other hand, argued that business methods are

161. *Bilski*, 130 S. Ct. at 3231.

162. See, e.g., *Tom Goldstein Predicts the Outcomes (and the Authors) of the Final Four Supreme Court Cases of this Term*, ALTHOUSE (June 27, 2010), <http://althouse.blogspot.com/2010/06/tom-goldstein-predicts-outcomes-and.html>; Gerard Magliocca, *Where is Bilski?*, CONCURRING OPINIONS (Apr. 5, 2010), <http://www.concurringopinions.com/archives/2010/04/where-is-bilski.html>.

163. Josh Blackman, *Who Will Write Bilski?*, JOSH BLACKMAN'S BLOG (June 23, 2010), <http://joshblackman.com/blog/2010/06/23/who-will-write-bilski-black-pcaob-mcdonald-cla-and-doe-my-final-predictions/>; Goldstein, *supra* note 162; Joe Miller, Comment to *Where is Bilski?*, CONCURRING OPINIONS (Apr. 5, 2010), <http://www.concurringopinions.com/archives/2010/04/where-is-bilski.html>.

164. *Bilski*, 130 S. Ct. at 3223 (2010).

165. *Id.* at 3221.

166. *Id.* at 3231 (explaining how the majority rejected a categorical exclusion of business methods because it would be inconsistent with (1) the broad definition of "process" under 35 U.S.C. §100(b), and (2) the passage of the First Inventor Defense Act); see *supra* notes 85-86 (discussing prior user defense); see also *Bilski*, 130 S. Ct. at 3228 (discussing how Congress would not have had to create a defense to business method patents if business methods were not patentable).

167. *Id.* at 3227-28. Since *Bilski*, district courts have continued to apply the machine-or-transformation text. For a discussion of those cases, see Mark A. Lemley, Michael Risch, Ted Sichelman, & R. Polk Wagner, *Life After Bilski*, 63 STAN. L. REV. 1315, 1319-22 (2011) (discussing cases involving the machine-or-transformation test).

per se excluded from patentability under § 101.¹⁶⁸ He considered § 101 through an historical lens and concluded that business methods were not subject to patent protection in the past and should not be patentable today.¹⁶⁹ In Justice Stevens's view, the Founders and Congress intended patents to protect "useful" or "technological" arts – meaning inventions like ships, gunpowder, paper, and stone work – not methods of doing business.¹⁷⁰ In sum, *State Street* was wrongly decided (or has been wrongly interpreted), and it was time to fix that mistake.¹⁷¹

Unfortunately for the high tech and financial industries, Justice Stevens was unable to muster a majority for this across-the-board ban on business method patents. In the wake of *Bilski*, the number of Class 705 patents issued by the PTO grew rapidly,¹⁷² while lower courts continued to struggle with the subject matter eligibility of business methods.¹⁷³ If there were any chance for meaningful change in the law, it would have to come from Congress. Consequently, those seeking patent reform shifted their attention back to Capitol Hill.

168. *Bilski*, 130 S. Ct. at 3230 (Stevens, J., concurring).

169. *Id.* at 3246 ("By the early 20th century, it was widely understood that a series of steps for conducting business could not be patented."). There appears to be evidence supporting both sides of the debate about the role business method patents have played historically. See *supra* Part II.B.

170. *Bilski*, 130 S. Ct. at 3243-44.

171. *Id.* at 3248 n.40. Justice Stevens argued that *State Street* does not support the position that business methods are *per se* patentable because that case "dealt with whether a piece of software could be patented and addressed only claims directed at machines, not processes." *Id.*

172. Before *Bilski*, the PTO issued 1,177, 1,694, and 1,996 Class 705 patents in 2007, 2008, and 2009, respectively. Following *Bilski* the number of Class 705 patents increased to 4,059, 4,064 and 4,854 between 2010 and 2012. See U.S. Patent & Trademark Office, *USPTO Patent Statistics, Patent Counts by Class by Year Report*, available at <http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cbcbby.pdf> (displaying patent statistics).

173. See, e.g., *CLS Bank Int'l. v. Alice Corp. Pty. Ltd.*, 713F.3d 1269 (Fed. Cir. 2013) (en banc). In *CLS Bank*, the Federal Circuit granted en banc review to consider the subject matter eligibility of certain claims of various business method patents held by Alice Corporation. Although a majority of the judges agreed that the claims were not patentable under § 101, the court issued a highly splintered decision with seven different opinions as to the rationale. The patent owner recently filed a petition for certiorari arguing that the Federal Circuit is "irreconcilably fractured" on § 101 questions. See Petition for a Writ of Certiorari at 3, *Alice Corp. v. CLS Bank*, No. 13-____ (U.S. Sept. 4, 2013) (asking whether computer implemented inventions are patentable subject matter). On December 6, 2013, the Supreme Court granted certiorari and oral argument is scheduled for March 31, 2014. See *Alice Corporation Pty. Ltd. v. CLS Bank International*, SCOTUSBLOG, available at <http://www.scotusblog.com/case-files/cases/alice-corporation-pty-ltd-v-clb-bank-international/> (last accessed Dec. 19, 2013) (listing the filings and proceedings in the case).

IV. BUSINESS METHOD PATENTS AND THE AIA

Several factors contributed to the call for patent reform that ultimately culminated in the passage of the America Invents Act in 2011.¹⁷⁴ As the boundaries of patentability expanded,¹⁷⁵ the number of patents issued by the PTO skyrocketed.¹⁷⁶ Questions abounded about the legitimacy of many of these patents, particularly software and other business method patents.¹⁷⁷ Along with this upsurge in patents came a rise in litigation, with ten times more patent suits filed in U.S. federal courts in 2006 than in 1990.¹⁷⁸ Yet, it was not just the quantity of litigation that spawned the reform movement; it was the quality too. Many of these patent suits were brought by PAEs—or “trolls” as they are pejoratively called—which are companies that acquire and assert patents but do not practice their inventions.¹⁷⁹ PAEs tend to litigate more aggressively than competitors because (1) there is no risk of inviting a counterclaim for infringement of a related patent (PAEs do not produce products), and (2) discovery is significantly less burdensome (PAEs do not generate many documents).¹⁸⁰ Consequently, companies (particularly in the high tech and financial sectors) were repeatedly named as defendants in patent infringement suits or threatened with litigation if they did not agree to license the patents.

To make matters worse for defendants, patent owners who litigated these suits to trial frequently won big verdicts and/or obtained injunctions. For example, when a PAE sued Research in Motion (“RIM”), the provider of the popular BlackBerry™ handheld device, the jury awarded the patent owner almost \$54 million in damages and the court entered a permanent

174. Leahy-Smith America Invents Act, Pub. L. No. 112-29, 125 Stat. 284-341 (2011) (codified as amended in scattered parts of 35 U.S.C.). One important motivating force behind the AIA not discussed in this Article was the need for international harmonization of our patent laws. See Robert P. Merges, *Priority and Novelty Under the AIA*, 27 BERKELEY TECH. L.J. 1023, 1046 (2012).

175. See, e.g., *State Street Bank and Trust Co. v. Signature Fin. Grp., Inc.*, 149 F.3d 1368 (Fed. Cir. 1998) (holding that business methods are patentable subject matter).

176. The number of patents issued by the PTO increased five-fold between 1963 and 2011. U.S. Patent & Trademark Office, *U.S. Patent Statistics, Calendar Years 1963-2011*, available at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.pdf.

177. Mark Lemley, Doug Lichtman & Bhaven Sampat, *What to Do About Bad Patents*, REG., 10, 10-13 (Winter 2005).

178. Bessen & Meurer, *supra* note 107, at 127.

179. Colleen V. Chien & Mark A. Lemley, *Patent Holdup, the ITC, and the Public Interest*, 98 CORNELL L. REV. 1, 2 (2012).

180. David H. Harper & Jason P. Bloom, *Eastern District of Texas Issues New Model Order Regarding E-Discovery in Patent Cases*, HAYNES & BOONE'S NEWSROOM (October 3, 2012), <http://www.haynesboone.com/new-model-order-e-discovery/> (noting the “large discovery asymmetries . . . such as when an [NPE], which typically has little ESI to produce, initiates an infringement suit against a larger company, which normally bears much greater expenses for e-discovery”).

injunction.¹⁸¹ When the decision was partially affirmed by the Federal Circuit, RIM ended up settling for over \$600 million.¹⁸² Microsoft too was slapped with a number of huge verdicts in the mid-2000s, the largest totaling \$1.52 billion.¹⁸³ And PAEs like DataTreasury have collected close to half a billion dollars in licensing fees and damages from big banks and other financial institutions.¹⁸⁴

The convergence of these circumstances provided fertile ground for patent reform. Microsoft, RIM, Google, and other major tech companies claimed the patent system was broken, and they called on Congress to fix it.¹⁸⁵ The first patent reform bill was introduced during the 109th Congress on June 8, 2005 by Representative Lamar Smith, then-Chairman of the House Judiciary Committee's Intellectual Property Subcommittee.¹⁸⁶ A similar bill was introduced in the Senate by Orrin Hatch and Patrick Leahy in 2006.¹⁸⁷ But both bills died in committee.¹⁸⁸ It wasn't until the 110th Congress, when the financial services industry took on a leadership role in patent reform, that legislative efforts began in earnest.¹⁸⁹

A. *The Banks' Role in Patent Reform*

Although the financial industry took some interest in the earliest patent reform efforts, it became a real priority in 2007.¹⁹⁰ That year, bank lobbyists (particularly the Financial Services Roundtable) stepped up their

181. NTP, Inc. v. Research in Motion, Ltd., 418 F.3d 1282 (Fed. Cir. 2005).

182. Rob Kelley, *BlackBerry Maker, NTP Ink \$612 Million Settlement*, CNN MONEY (Mar. 3, 2006), http://money.cnn.com/2006/03/03/technology/rimm_ntp/.

183. See, e.g., Sinead Carew, *Microsoft Hit With \$1.52 Billion Patent Suit Damages*, REUTERS (Feb. 23, 2007), <http://www.reuters.com/article/2007/02/23/us-microsoft-verdict-idUSWEN465120070223>.

184. See *supra* notes 136-140 and accompanying text (discussing DataTreasury's litigation campaign against the finance industry).

185. See Tom Krazit, *RIM Calls for Patent Reform in Newspaper Ad*, CNET (Mar. 14, 2006), http://news.cnet.com/RIM-calls-for-patent-reform-in-newspaper-ad/2100-1047_3-6049699.html (discussing RIM's use of newspaper ads to raise public support to change current patent policies); McCullagh, *supra* note 7; Hannibal Travis, *The Future According to Google: Technology Policy from the Standpoint of America's Fastest-Growing Technology Company*, 11 YALE J.L. & TECH. 209, 218-19 (2009) (discussing Google's view that software patents threatened innovation).

186. Joe Matal, *A Guide to the Legislative History of the America Invents Act: Part I of II*, 21 FED. CIR. B.J. 435, 438 (2011-12) [hereinafter "Matal Part I"].

187. *Id.* at 439.

188. *Id.*

189. *Id.*; Lisa Lerer, *Finance Industry Leads on Patent Reform*, POLITICO.COM (July 31, 2007), <http://www.politico.com/news/stories/0707/5187.html>.

190. *Id.*; *Patent Law Reform: Injunctions and Damages: Hearing before the Subcomm. on Intellectual Property of the Comm. on the Judiciary, U.S. Senate*, (109th Cong. June 14, 2005) (Prepared Statement of Jonathan Band on behalf of Visa U.S.A. and the Financial Services Roundtable).

efforts with Congress, and it paid off.¹⁹¹ In April 2007, parallel patent reform bills were introduced in both houses of Congress.¹⁹² The bills included a number of provisions that aren't directly relevant to this Article, most notably an adoption of a "first-to-file" rather than a "first-to-invent" priority system. Yet, several features of the bills were intended to address the problems of patent quality, including a post-grant review proceeding that would allow patents to be challenged at the PTO rather than in expensive and prolonged litigation.¹⁹³

The high tech and financial sectors applauded the proposed legislation and encouraged Congress to move forward with the reform effort.¹⁹⁴ But there were powerful dissenting voices too, especially from the pharmaceutical and biotechnology industries.¹⁹⁵ Dissenters argued that the new laws would weaken the patent system and hamper innovation.¹⁹⁶ This schism forced Congress back to the drawing board to modify or eliminate the bills' most controversial provisions.¹⁹⁷

The Senate continued its work on patent reform during the 111th Congress (2009-10), but it would take until September 2011 for the AIA to finally pass. During that time, the banks' lobbyists continued to pressure Congress.¹⁹⁸ At a hearing before the House Subcommittee on Intellectual Property, for example, a representative of the Financial Services Roundtable stated:

[G]iven the importance of the financial services sector to the [n]ation's economy and infrastructure, it's important that the patent system work for everyone, and currently, it does not. So

191. The American Bankers Association and Securities Industry and Financial Markets Association also lobbied on the banks' behalf. Lerer, *supra* note 189, at 1.

192. Matal Part I, *supra* note 186, at 439.

193. *Id.*; Stephen T. Schreiner & Karen Axt, *Why Banks are Now Implementing Patent Programs and How Patent Legislative Reforms Will Affect Banks*, 124 BANKING L.J. 724, 730 (2007) (noting the banks' support for post-grant review of patents).

194. Press Release, Coalition for Patent Fairness Supports Introduction of Bipartisan, Bicameral Patent Reform Bills (Apr. 18, 2007), *available at* <http://www.prnewswire.com/news-releases/coalition-for-patent-fairness-supports-introduction-of-bipartisan-bicameral-patent-reform-bills-58578362.html>. The Coalition for Patent Fairness is a diverse group of companies supporting patent reform that included, among others, Apple, Intel, Microsoft, Visa, and the Financial Services Roundtable back in 2007. *Id.*

195. DAN L. BURK & MARK A. LEMLEY, *THE PATENT CRISIS AND HOW THE COURTS CAN SOLVE IT* 101 (2009).

196. *Id.*

197. Matal Part I, *supra* note 186, at 441-42.

198. Letter from the Coalition of Patent Fairness to The Honorable Harry Reid, Majority Leader, U.S. Senate, and The Honorable Mitch McConnell, Republican Leader, U.S. Senate, Jan. 22, 2008, http://www.sifma.org/regulatory/comment_letters/61653310.pdf. Signatories to the letter included Bank of America, Citigroup, JP Morgan, Wells Fargo, and many other financial institutions. *Id.*

instead, the confluence of inoperability, forum shopping, and a lack of quality prior art, particularly in the area of business method patents, has conspired to leave financial firms, from the smallest community banks or local credit union or insurance agent to the largest global company, mired in . . . meritless litigation over patents of dubious quality.¹⁹⁹

Moreover, citing Lerner's studies, the banks claimed that reform is particularly critical for the financial industry because financial patents are 27 times more likely to be asserted in litigation than non-financial patents.²⁰⁰

In March 2011, the banks got what they wanted. The Senate adopted an amendment to the reform bill, including a provision sponsored by Senators Schumer and Kyl that established a new post-issuance review procedure exclusively for financial business method patents.²⁰¹ This provision, which ultimately became section 18 of the AIA, has proven quite controversial.

B. Section 18 of the AIA and Covered Business Method Patents

Section 18 of the AIA establishes an administrative post-grant review proceeding for "covered business method" or "CBM" patents, meaning patents related to financial products.²⁰² According to the legislative history, this proceeding will "offer a relatively cheap alternative to civil litigation for challenging these patents," and will ease the burden on federal courts "dealing with the backwash of invalid business-method patents."²⁰³ When considered alone this provision seems perfectly reasonable. Therefore, to

199. *America Invents Act: Hearing on H.R. 1249 Before the H. Subcomm. on Intellectual Prop., Competition, & the Internet of the H. Comm. on the Judiciary*, 112th Cong. 3 (2011) (Statement of Steve Bartlett for the Financial Services Roundtable).

200. Schreiner & Axt, *supra* note 193, at 732 (summarizing the testimony of Tony Squires of Goldman Sachs).

201. Matal Part I, *supra* note 186, at 445; Joe Matal, *A Guide to the Legislative History of the America Invents Act: Part II of II*, 21 FED. CIR. B.J. 539, 626-642 (2012) [hereinafter "Matal Part II"].

202. Specifically, the Act defines "covered business method patent" as "a patent that claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of a financial product or service, except that the term does not include patents for technological inventions." 35 U.S.C. § 321. The legislative history reveals the direct connection between this provision of the Act and the banking industry. The legislative history explains that covered business method patents are intended to encompass patents "claiming activities that are financial in nature, incidental to financial activity or complementary to a financial activity." 157 Cong. Rec. S5432 (daily ed. Sept. 8, 2011) (statement of Sen. Schumer). This language, i.e., "financial in nature" etc., is derived from the provisions of federal banking statutes which limit banks' activities to those that are "financial in nature" etc. See 12 U.S.C. § 1843(k).

203. 157 CONG. REC. S1367 (Mar. 8, 2011) (statement of Sen. Kyl).

understand the controversy surrounding section 18, it is necessary to look at the other post-grant review proceedings created by the AIA.

In addition to CBM, Congress created two other new administrative proceedings for challenging patents at the PTO: Inter Partes Review (“IPR”) and Post-Grant Review (“PGR”).²⁰⁴ With few exceptions, IPR allows any patent to be challenged at any time after issuance.²⁰⁵ But IPR is limited in scope in that a petitioner may only raise questions of novelty and non-obviousness based on patents and printed publications.²⁰⁶ PGR, on the other hand, is broad in scope, as it allows challenges on any ground “relating to the invalidity of the patent,” including prior use and § 101 subject matter eligibility.²⁰⁷ However, PGR is available only for patents filed under the first-to-file system and, even as to those patents, the window to initiate a PGR remains open just for nine months after issuance.²⁰⁸ Thus, while these proceedings will no doubt prove useful, each has significant constraints that may impede effectiveness.

Yet, there are far fewer constraints with respect to the CBM proceedings, leading some (including the former Chief Judge of the Federal Circuit) to conclude that section 18 is nothing more than a “bail out” for the banks.²⁰⁹ Specifically, section 18 permits parties accused of infringement to challenge *any* CBM (not just first-to-file patents as with PGR) on *any* validity ground (not just novelty and non-obviousness as with IPR).²¹⁰ Although section 18 was added to the Senate’s version of the reform bill

204. 35 U.S.C. §§ 311, 321 (2011).

205. IPR may only be initiated within twelve months of being served with an infringement complaint, and parties who have filed declaratory judgment actions are barred from seeking IPR. 35 U.S.C. § 315.

206. *Id.* § 312.

207. *Id.* § 321; Melissa F. Wasserman, *The Changing Guard of Patent Law: Chevron Deference for the PTO*, 54 WM. & MARY L. REV. 1959, 1993 (2013).

208. 35 U.S.C. § 321.

209. The Honorable Paul Michel, *Rein in the Big Bank Bail-Out*, PATENTLY-O (July 7, 2011), <http://www.patentlyo.com/patent/2011/07/guest-post-rein-in-the-big-bank-bail-out.html>; Sterne, *supra* note 140, at 45 (“Section 18 is widely considered to be a ‘bailout’ to the financial sector”); 157 CONG. REC. S5408 (daily ed. June 23, 2011) (statement of Sen. Cantwell) (condemning section 18 as an “earmark rifleshot” for the banks); *see also Financial Services Group Criticizes Foley & Lardner Attorney Over Patent Reform Issue*, THE BLT: THE BLOG OF LEGAL TIMES (July 21, 2011), <http://legaltimes.typepad.com/blt/2011/07/financial-services-group-criticizes-foley-lardner-attorney-over-patent-reform-issue.html> (discussing banks’ criticism of a law firm when one of its members distributed an email repeating Judge Michel’s criticism of Section 18).

210. 35 U.S.C. § 321. While section 18 currently includes an 8-year sunset provision, *id.*, legislation has been proposed to eliminate it. *See* S. 866 (May 6, 2013 113th Cong.); Tony Dutra, *Schumer Seeks Permanent, Expanded CBM PTAB Challenges on Any Management Patent*, BLOOMBERG BNA (May 7, 2013), available at <http://www.bna.com/schumer-seeks-permanent-n17179873837/>.

with little discussion, it was a hotly debated topic in the House.²¹¹ To be sure, Representative Shock offered an amendment striking section 18 from the bill as an earmark for the banks.²¹² Those who supported Shock's amendment, like Representative Waters, believed section 18 would permit banks "to steal legally issued and valid patents."²¹³ Proponents of section 18 responded that the new law would benefit a cross-section of the business community, not just financial institutions.²¹⁴ In the end, Shock's amendment was voted down 262-158,²¹⁵ and section 18 became law when the AIA was passed by Congress and signed by President Obama on September 16, 2011.²¹⁶

C. *Post-AIA Reactions to Section 18*

The financial industry presumably was pleased with the inclusion of section 18 in the AIA. With all the lobbying efforts and money spent, it seemed a huge coup for the banks.²¹⁷ Yet, in the first year after section 18 became effective on September 16, 2012, only about 50 CBM petitions were filed, as compared to more than 500 IPR petitions filed during the same time period.²¹⁸ More to the point, remarkably few proceedings were initiated by financial institutions. Instead, most of the early section 18 proceedings were brought by a diverse group of petitioners ranging from Apple and Google to LinkedIn and Liberty Mutual Insurance.²¹⁹

211. *Matal II*, *supra* note 201, at 628-30. More members participated in the debate on the CBM proceeding than any other provision of the bill. *Id.* at 629.

212. 157 CONG. REC. H4496 (daily ed. June 23, 2011) (statement of Rep. Shock).

213. *Id.* at H4496 (statement of Rep. Waters).

214. *Id.* at H4496 (statement of Rep. Grimm) (including McDonald's, Wal-Mart, Costco, Home Depot, Best Buy, and Lowes among the companies that would benefit from § 18).

215. *Id.* at H4503.

216. 35 U.S.C. § 321.

217. *See Lerer*, *supra* note 189, at 1 (stating that banks spent at least \$20 million lobbying for patent reform). *But see* Jay P. Kesan & Andres A. Gallo, *The Political Economy of the Patent System*, 87 N.C. L. REV. 1341, 1382 (2009) (finding that the pharmaceutical, manufacturing, and high tech industries spent more on lobbying for patent reform than the banks).

218. *See* Scott A. McKeown, *Where are all the Business Method Patent Challenges?*, Patents-Post Grant (Apr. 24, 2013), <http://www.patentspostgrant.com/lang/en/2013/04/where-are-all-the-business-method-patent-challenges>. Notably, the PTO's cumulative statistics indicate that 522 IPR proceedings and 56 CBM proceedings were filed between September 16, 2012 and September 27, 2013. *See* U.S. Patent & Trademark Office, *AIA Statistics* (Oct. 30, 2013), available at http://www.uspto.gov/aia_implementation/statistics.jsp. As indicated in Appendix A, however, we have identified 50 CBM proceedings during that timeframe involving different patents, so it's unclear how the PTO is recording this data.

219. U.S. Patent & Trademark Office, *AIA Statistics*, available at https://ptabtrials.uspto.gov/prweb/PRWebLDAP2/HcI5xOSeX_yQRYZAnTXXCg%5B%5B*/!STANDARD?UserIdentifier=searchuser (last visited Dec. 2, 2013).

That trend appears to be changing, however. As demonstrated in the chart at Appendix A, sixty-three new CBM petitions were filed between October 1, 2013 and February 21, 2014. If filings continue at this rate, approximately four times as many CBM petitions will be filed in fiscal year 2014 (189) as were filed in fiscal year 2013 (44). And it is not only the overall number of CBM petitions that is increasing, but the number of financial institutions utilizing these proceedings appears to be on the rise as well.²²⁰ There are potential explanations for this shift in the data.²²¹ Perhaps in the immediate wake of the AIA fewer patent owners asserted their business method patents for fear of inviting section 18 challenges. Another possibility is that petitioners initially chose IPR over section 18 proceedings out of concern that the challenged patents would not fall within the definition of “covered business method.”²²² Indeed, early questions swirled about the proper interpretation of CBM. Although the PTO issued a rulemaking in August 2012 stating that CBM would be interpreted broadly so as to include non-financial business method patents,²²³ that interpretation quickly became the subject of a lawsuit.²²⁴ This uncertainty regarding the scope of section 18 may explain petitioners’ initial reluctance to use the new procedure.

Some recent developments appear to have allayed these concerns, however, leading to a dramatic increase in the number of CBM petitions filed in the first two months of the current fiscal year. First, in June 2013, the White House made various recommendations for improving our patent system, including expansion of the CBM program “to include a broader category of computer-enabled patents”²²⁵ Second, in August 2013, the

220. See Appendix A (demonstrating that Bank of America, PNC Bank, US Bancorp, and Fidelity have all filed CBM petitions in the current fiscal year).

221. This data was collected from the USPTO’s PRPS Filing System, https://ptabtrials.uspto.gov/prweb/PRServlet/oO9O9iMscyJc_fy6LnBDXO9xEtRpDxfL3At36r8Aw8k%5B*/!STANDARD?. In six instances, matters involving the same parties and patents are listed as two separate cases by the PTO (CBM2012-00002 and CBM2012-00004; CBM2012-00010 and CBM2012-00011; CBM2013-00001 and CBM2013-00002; CBM2013-00003 and CBM2013-00004; CBM2013-00019 and CBM2013-00020; CBM2013-00021 and CBM2013-00023); CBM2014-00060, CBM2014-00066, and CBM2014-00067). We have deleted duplicates for simplicity’s sake.

222. Susan Decker, *SAP Wins Ruling on Versata Patent in \$345 Million Case*, BLOOMBERG (June 12, 2012), <http://www.bloomberg.com/news/2013-06-12/sap-wins-ruling-on-versata-patent-in-345-million-case.html> (“People had a misapprehension of how narrow the definition of covered business method patents is . . . False.”). Between September 2012 and May 2013, a total of 260 IPRs have been initiated. See U.S. Patent & Trademark Office, *AIA Statistics* (May 31, 2013), available at http://www.uspto.gov/aia_implementation/statistics.jsp

223. 37 C.F.R. § 42.301.

224. *Versata Dev. Grp. Inc. v. Rea*, No. 1:13-cv-328(GBL/IDD), 2013 WL 4014649, at *1 (E.D. Va. Aug. 7, 2013).

225. Press Release, The White House, Fact Sheet: White House Task Force on High-

federal lawsuit challenging the PTO's interpretation of CBM was dismissed for lack of subject matter jurisdiction.²²⁶ Finally, as discussed further below, Congress has proposed multiple bills over the past several months that would expand the scope of section 18 beyond patents related to financial products and services.²²⁷

At this point, it is still too early to draw any conclusions regarding the CBM program since the procedures have been in place for less than two years. What we do know is that CBM, IPR, and PGR have the potential to profoundly impact our patent system going forward. For example, last June the PTO issued its first CBM decision in *SAP America, Inc. v. Versata Dev. Grp., Inc.* in which the agency struck down all the challenged claims under section 101.²²⁸ This case is being closely watched not only as the PTO's first decision in this area, but because it conflicts with a recent Federal Circuit decision holding that the patent is valid, infringed, and that the patent owner is entitled to over \$300 million in damages.²²⁹ Although the Federal Circuit denied SAP's motions for stay and rehearing and the Supreme Court recently denied its petition for certiorari,²³⁰ Versata has appealed the PTO's decision,²³¹ so this may not be the last we have heard on this case.²³² How the Federal Circuit will resolve this sort of inconsistency is impossible to predict, and eventually the Supreme Court may have to weigh in on this and other issues raised by the AIA.²³³

Tech Patent Issues (June 4, 2013), <http://www.whitehouse.gov/the-press-office/2013/06/04/fact-sheet-white-house-task-force-high-tech-patent-issues>.

226. *Versata Dev. Grp. Inc.*, 2013 WL 4014649, at *1. The patent owner did, however, file a notice of appeal to the Federal Circuit on December 2, 2013. Notice of Appeal, *Versata Dev. Grp. Inc.*, 2013 WL 4014649 (E.D. Va. Aug. 7, 2013) (No. 1:13-cv-328(GBL/IDD)).

227. See *infra* note 234 and accompanying text (discussing the Patent Quality Improvement Act).

228. *SAP America, Inc. v. Versata Dev. Grp., Inc.*, Case CBM2012-00001, Final Written Decision (PTA June 11, 2013), available at https://www.eff.org/sites/default/files/sap_cbm_decision.pdf.

229. *Versata Software, Inc. v. SAP America, Inc.*, 717 F.3d 1255 (Fed. Cir. 2013).

230. *Id.*; see *SAP America, Inc. v. Versata Software, Inc.*, SCOTUSBLOG, available at <http://www.scotusblog.com/case-files/cases/sap-america-inc-v-versata-software-inc/> (last accessed Feb. 26, 2014) (indicating that the Court denied certiorari on Feb. 21, 2014).

231. *SAP Am., Inc. v. Versata Software, Inc.*, Brief in Opp., No. 13-716, at 13 (Dec. 2013), available at <http://sblog.s3.amazonaws.com/wp-content/uploads/2014/01/Versata-Final.pdf>.

232. Only time will tell whether the parties will settle in light of the Supreme Court's denial of SAP's certiorari petition or whether the Federal Circuit will end up reviewing the PTO's invalidity determination.

233. Compare *In re Baxter Int'l, Inc.*, 698 F.3d 1349, 1350 (Fed. Cir. 2012) (on petition for panel rehearing and rehearing en banc) (O'Malley, J., concurring in the denial of rehearing) ("[A] prior court decision in which a party has failed to prove a patent invalid does not bar the [...] PTO] from subsequently reexamining that same patent."), with *In re Baxter Int'l, Inc.*, 678 F.3d 1357, 1366 (Fed. Cir. 2012) (Newman, J., dissenting) ("No

In the meantime, the last several months have witnessed a resurgence of patent reform efforts, including one related directly to section 18. This past May, Senator Schumer introduced the Patent Quality Improvement Act (“PQIA”) which would (i) expand the definition of “covered business methods” so that section 18 is no longer limited to financial patents, and (ii) eliminate section 18’s sunset provision to make the program permanent.²³⁴ In July, Representative Issa introduced the Stopping the Offensive Use of Patents Act (“STOP Act”), which is nearly identical to the PQIA.²³⁵ Simply put, these two acts would subject all business method patents to PTO scrutiny, not just those related to financial products. While these proposals may seem logical in theory, they are unlikely to gain momentum given the extreme pressure such an expanded program would place on the PTO’s already-stretched resources. Moreover, recent opposition from a coalition that includes major players like IBM, Microsoft, and 3M makes expansion of the CBM program even more improbable.²³⁶ In fact, the patent reform bill passed by the House last December—the Innovation Act introduced by Representative Goodlatte—originally expanded the CBM program,²³⁷ but was amended to eliminate those provisions because of opposition from these powerful software companies.²³⁸

Yet, some of the other current proposals appear to have substantial support from the banks and other industries.²³⁹ First, there has been a lot of

authority, no theory, no law or history, permits administrative nullification of a final judicial decision Judicial rulings are not advisory; they are obligatory.”).

234. S. 866 (May 6, 2013 113th Cong.). The proposed bill defines “covered business method patent” to include a patent that “claims a method or corresponding apparatus for performing data processing or other operations used in the practice, administration, or management of any enterprise, product, or service, except technological inventions.” S. 866 – Patent Quality Improvement Act of 2013, CONGRESS.GOV, <http://beta.congress.gov/bill/113th/senate-bill/866> (last visited Dec. 20, 2013).

235. Stopping the Offensive Use of Patents Act, H.R. 2766, 113th Cong. (2013).

236. Letter to Chairmen Leahy and Goodlatte re: Patent Reform (Sept. 19, 2013), available at <http://www.chi.org/wp-content/uploads/2013/03/Cross-Sector-Letter-Addressing-Concerns-with-Proposals-to-Expand-PTO-%E2%80%9CCovered-Business-Method-Patents%E2%80%9D-Program-Sept.-19-2013.pdf>.

237. Innovation Act, H.R. 3309, 113th Cong. (2013).

238. Amendment in the Nature of a Substitute to H.R. 3309, Offered by Mr. Goodlatte of Virginia, Innovation Act, H.R. 3309, 113th Cong. (2013). Of course, only time will tell what will happen in Congress, as Schumer and others still strongly support expansion of the CBM program. See Timothy B. Lee, *Software Patent Reform Just Died in the House, Thanks to IBM and Microsoft*, WASH. POST. (Nov. 20, 2013, 10:17 AM) <http://www.washingtonpost.com/blogs/the-switch/wp/2013/11/20/software-patent-reform-just-died-in-the-house-thanks-to-ibm-and-microsoft/> (quoting Schumer as saying that he expects the CBM provisions to remain in the Senate legislation even though they were removed from the House bill).

239. Letter to Majority Leader Reid, Minority Leader McConnell, Speaker Boehner, and Minority Leader Pelosi re: Patent Reform (July 17, 2013), available at

discussion recently, including in the popular media,²⁴⁰ about using attorney fee awards and/or sanctions to ward off patent trolls.²⁴¹ Second, limitations on discovery in patent cases have already been implemented in a number of courts,²⁴² and there are legislative proposals to codify these discovery restrictions to curb patent litigation abuse.²⁴³ And finally, both Congress and the Executive Branch have taken on the “who owns what patent” problem,²⁴⁴ which refers to the widespread practice of failing to disclose patent transfers and other ownership information to the public.²⁴⁵ Sometimes patent owners set up shell companies to hide the identity of the real party in interest, while other patent owners simply fail to inform the PTO when the patent changes hands.²⁴⁶ Either way, anonymous patents can create real problems when it comes to managing, licensing, and litigating

<http://www.patentfairness.org/media/press/#2013-07-17-1> [hereinafter July 17 Letter] (signatories include the American Bankers Association, the Financial Services Roundtable, and the Independent Community Bankers of America); Tony Dutra, *Obama Anti-Patent Troll Announcement Hints a Nerve in U.S. Business Community*, BNA’S PATENT, TRADEMARK & COPYRIGHT J., Vol. 86, No. 2117, at 281 (June 7, 2013) (stating that the American Bankers Association has been active in the current patent reform debate).

240. See, e.g., Randall R. Rader, Colleen V. Chien & David Hricik, *Make Patent Trolls Pay in Court*, N.Y. TIMES (June 4, 2013), http://www.nytimes.com/2013/06/05/opinion/make-patent-trolls-pay-in-court.html?_r=0 (explaining the problematic behavior of patent trolls and the legal tools that should be used to combat this behavior).

241. See, e.g., Innovation Act (H.R. 3309) (providing that the prevailing party in a patent suit should usually be awarded attorneys’ fees and other costs); Patent Abuse Reduction Act of 2013 (S. 1013) (awarding attorney’s fees in patent cases to the prevailing party except in certain cases); Patent Litigation Integrity Act of 2013 (S. 1612) (same).

242. See, e.g., The Honorable Leonard Davis, *In the United States District Court for the Eastern District of Texas General Order 12-6*, (Feb. 27, 2012) (adopting a new model order to limit discovery in patent cases); DCG Sys., Inc. v. Checkpoint Techs., LLC, No. 5:11-cv-03792-PSG, at *1 (N.D. Cal. 2011) (adopting a version of the “Model Order on E-Discovery in Patent Cases” that limits the scope of electronic discovery).

243. See, e.g., Patent Litigation and Innovation Act (H.R. 2639) (staying discovery in patent cases until certain motions are resolved); Patent Abuse Reduction Act, *supra* note 241 (limiting the scope of discovery, sequencing discovery, and imposing cost shifting for the discovery of “non-core” documentary evidence).

244. Colleen V. Chien, *The Who Owns What Problem in Patent Law* (Jan. 30, 2012), available at <http://ssrn.com/abstract=1995664> [hereinafter Chien, *Who Owns What*].

245. See, e.g., End Anonymous Patents Act, H.R. 2024 (requiring names of patent owners and real parties in interest to be disclosed to PTO); Patent Abuse Reduction Act of 2013, S. 1013 (proposing that patent complaints must include “the identity of any person with a direct financial interest in the outcome of the action”); The White House Task Force on High-Tech Patent Issues, Legislative Priorities & Executive Actions (June 4, 2013) (requiring patentees and applicants to disclose the “real party-in-interest” to the PTO). More recently, the PTO put out for notice and comment rules requiring patent applicants and owners to regularly update ownership information. See *Attributable Ownership*, USPTO, last visited Feb. 26, 2014, available at http://www.uspto.gov/patents/init_events/attributable_ownership.jsp.

246. See Chien, *Who Owns What*, *supra* note 244, at 3-4.

patents.

Whatever the outcome of these various reform efforts, the message has been consistent: our patent system remains broken. Nevertheless, the number of patent applications filed and patents issued by the PTO continues to rise each year, even for business method patents.²⁴⁷ The fact is that many of the same financial firms that pled with Congress to fix business method patents are building their own patent portfolios. Questions about what the banks are patenting and why it matters are explored next.

V. THE PATENT PORTFOLIOS OF BIG BANKS

In the current environment, it is commonplace for financial institutions of all sizes to own patents. For purposes of this Article, however, we focused our research on large financial institutions for several reasons. First, to the extent that the patent process involves a significant investment of resources, one would expect that larger institutions would be more likely to have significant patent activity.²⁴⁸ Second, large institutions are often industry leaders. Therefore, if there has been a change in attitude toward the benefits of patents in the financial services industry, one might expect to see a change in larger financial institutions before smaller ones.²⁴⁹ Finally, and most generally, the political and economic power of large financial institutions means that their interest in patents may have a significant impact on patent practice and policy.²⁵⁰

247. In 2012, there were 542,815 utility patent applications filed compared to 503,582 in 2011 and 490,226 in 2010. As for patent grants, the total for utility patents was 253,155 in 2012 compared to 224,505 in 2011 and 219,614 in 2010. *U.S. Patent & Trademark Office*, U.S. Patent Statistics, Calendar Years 1963-2012, available at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/us_stat.pdf. In 2012, 4,854 class 705 patents were granted compared to 4,064 in 2011 and 4,059 in 2010. See *U.S. Patent & Trademark Office*, U.S. Patent Statistics, Patent Counts by Class by Year, available at <http://www.uspto.gov/web/offices/ac/ido/oeip/taf/cbcby.pdf>.

248. Innovation, in general, is expensive. Early studies by Peter Tufano estimated that the costs of developing a new financial product range from \$50,000 to \$5 million. Peter Tufano, *Financial Innovation and First-Mover Advantages*, 25 J. OF FIN. ECON. 213, 213-40 (1989).

249. Consistent with this observation, Tufano found that the large financial institutions were the primary innovators. *Id.* at 219. Outside of financial services, larger firms spend more on research and development than smaller ones. Michael Mandel, *Scale and Innovation in Today's Economy*, PROGRESSIVE POLICY INSTITUTE POLICY MEMO (December 2011) at 3-4, available at http://progressivepolicy.org/wp-content/uploads/2011/12/12.2011-Mandel_Scale-and-Innovation-in-Todays-Economy.pdf. Whether that means more generally that larger firms innovate more than smaller firms is not as clear. *Id.* at 2.

250. Although our study focuses on big banks, we recognize the unique value that patents could provide to smaller financial institutions, especially in the effort to raise capital

Specifically, we examined the patent activity of U.S. banks that are global systemically important banks (“G-SIFIs”). G-SIFIs are institutions that have been identified by the Financial Stability Board (“FSB”)²⁵¹ as requiring special supervision because their size, complexity, and systemic interconnectedness make these institutions especially important to the world financial system and economy.²⁵² While the patent activities of such institutions are not important to their supervision, we chose the G-SIFI status as a proxy for institutions with the most political and economic power. Since November of 2011, the FSB has identified, annually, the banks that meet the G-SIFI criteria. The following U.S. banks are included (in alphabetical order): Bank of America (“BOA”); Bank of New York Mellon; Citigroup;²⁵³ Goldman Sachs; JP Morgan Chase (“JP Morgan”); Morgan Stanley;²⁵⁴ State Street; and Wells Fargo. The discussion below focuses on the recent patent activity of those eight banks.

A. Patent Activity of Big Banks

Companies acquire patents—or build patent portfolios—in different ways. Companies patent their own inventions, meaning the company’s employees file patent applications for “on the job” inventions, and then assign any issued patents to the company as required by their employment

and attract business. See, e.g., Amelia S. Rinehart, *Patents as Escalators*, 14 VAND. J. ENT. & TECH. L. 81, 111 (2011) (arguing that patents are particularly important for start-up companies that need to raise capital, but lack other measurable values of success); Clarisa Long, *Patent Signals*, 69 U. CHI. L. REV. 625, 653 (2002) (“Among venture capitalists, both the quantity and quality of patents have long been factors that are taken into consideration when deciding whether to invest in a company, particularly in its early stages.”).

251. “The FSB, originally the Financial Stability Forum, was established in 1999. The FSB was established to coordinate at the international level the work of national financial authorities and international standard setting bodies and to develop and promote the implementation of effective regulatory, supervisory and other financial sector policies. It brings together national authorities responsible for financial stability in significant international financial centres, international financial institutions, sector-specific international groupings of regulators and supervisors, and committees of central bank experts.”

Overview, FINANCIAL STABILITY BOARD,

<http://www.financialstabilityboard.org/about/overview.htm> (last visited Dec. 20, 2013).

252. Specifically, the FSB states: “SIFIs are financial institutions whose distress or disorderly failure, because of their size, complexity and systemic interconnectedness, would cause significant disruption to the wider financial system and economic activity.” FSB, *Policy Measures to Address Systemically Important Financial Institutions*, 1 (Nov. 4, 2011), available at http://www.financialstabilityboard.org/publications/r_111104bb.pdf.

253. In considering patent grants, Citigroup includes Citigroup, N.A., Citicorp Development Center, Inc., Citigroup Global Markets, Inc., and Citicorp Credit Services, Inc.

254. In considering patent grants, Morgan Stanley includes Morgan Stanley, Morgan Stanley Dean Witter & Co., and Morgan Stanley Capital International, Inc.

contracts.²⁵⁵ Information about these types of patent transactions is widely available because the PTO maintains records of the names of the inventors, as well as the names of the individuals or entities to whom ownership of the patent was assigned at the time the patent was issued.²⁵⁶

Portfolios are also built by purchasing patent rights from other firms. Although patents have always been bought and sold, the practice has become ubiquitous in recent years.²⁵⁷ Some patent transfers have even garnered the attention of the mainstream media, such as Kodak's 2012 sale of its portfolio to Apple, Google, Facebook, and others for \$525 million.²⁵⁸ Aside from the rare high-profile transaction, however, publicly available data about patent transfers is scarce. Patent owners are not required to notify the PTO when patents change hands,²⁵⁹ nor are firms usually compelled to disclose their financial interests in patents. As noted earlier, proposals to remedy this information deficit are currently on the table, but for the moment the "who owns what patent" problem persists.²⁶⁰ Consequently, our ability to evaluate the patent activity of big banks suffers from these limitations.²⁶¹

Still, even given these constraints, the data tell an interesting story about patents and the financial industry—namely, that G-SIFIs have been patenting many of their own inventions in recent years. Looking first at utility patents generally, the PTO has issued an annual report for almost two decades (1995-2012) that lists in descending order the organizations that received forty or more patents during a given calendar year.²⁶² From 1995 to 2007, none of the G-SIFIs appeared on this list.²⁶³ That trend began to shift in 2008 when JP Morgan was issued forty-seven patents; JP

255. See generally Merges, Menell & Lemley, *supra* note 42, at 86-87.

256. See U.S. Patent & Trademark Office, USPTO Patent Full-Text and Image Database, Tips on Field Searching, available at http://patft.uspto.gov/netahtml/PTO/help/helpflds.htm#Assignee_Name.

257. See Chien, *Who Owns What*, *supra* note 244 at 2 (reporting that patent transfers have grown from less than 2,000 in 1980 to almost 90,000 by 2003).

258. See Andrew Martin, *Kodak to Sell Digital Imaging Patents for \$525 Million*, N.Y. TIMES, Dec. 19, 2012, at B3 (reporting on Kodak's announcement of its sale of 1,100 digital imaging patents to a "consortium that includes many of the world's biggest technology firms").

259. Chien, *Who Owns What*, *supra* note 244, at 2-3.

260. See *supra* notes 244, 245 (discussing proposals to curb "anonymous patents").

261. With regard to the activities of banks in particular, one might expect to see banks taking a security interest in patents as collateral for loans. A security interest in a patent, however, is perfected through compliance with state law Uniform Commercial Code filing systems. Security interests are not recorded with the PTO. *In re Cybernec Inc.*, 252 F.3d 1039, 1043 (9th Cir. 2001).

262. The threshold number was thirty until 1998 when it was increased to forty.

263. U.S. Patent & Trademark Office, Reports By Patenting Organization, Final Tabulation - Patenting by Organizations Report, Single Year Reports, 1995 to Present, available at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/reports_topo.htm.

Morgan has remained on the list for the past four years with its highest number of patent grants (eighty-four) in 2010.²⁶⁴ The other G-SIFs with substantial patenting activity include BOA, Morgan Stanley, and Goldman Sachs. BOA received seventy-three patents in 2011 and 165 patents in 2012, while Morgan Stanley and Goldman Sachs have each only appeared on the list once since 2008.²⁶⁵

To understand the significance of these figures, it helps to put them in perspective. In 2012, the two organizations issued the greatest number of patents were International Business Machines Corporation (“IBM”) and Samsung Electronics Co. (“Samsung”). That year, IBM and Samsung received 6,457 and 5,043 patents, respectively, far outpacing the other leading patenting organizations. Indeed, only twenty-six other entities were granted more than 1,000 patents in 2012, most of which are in the high tech sector.²⁶⁶ Thus, while the G-SIFs’ total patents are low compared to the high tech giants, their numbers resemble those of firms in more traditional patenting industries. In 2012, for example, the PTO issued BOA 165 patents, and issued a similar number to Stanford University (182), Advanced Micro Devices (178), and the U.S. Army (172). Likewise, when JP Morgan received eighty-four patents in 2010, it was not far behind entities with longstanding patent practices like Konica Minolta (87) and Whirlpool Corporation (86).²⁶⁷

Perhaps even more telling about this surge in financial industry patenting are the data regarding Class 705 patents. The PTO reports on the patents in certain technology classes with a breakdown by organization. The report for Class 705 provides patent count numbers from 1969 to 2012.²⁶⁸ Before 2006, the only G-SIFI with any substantial Class 705 patenting activity was Citigroup.²⁶⁹ That started to change in the mid-2000s, however, as illustrated in the table below.

264. *Id.* JP Morgan was issued forty-two, sixty, and seventy-three utility patents in 2009, 2011, and 2012, respectively. *Id.*

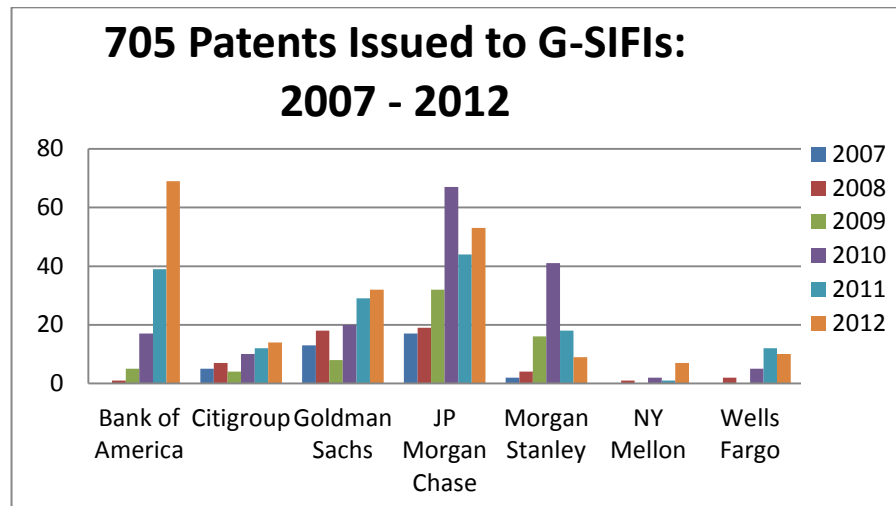
265. *Id.* Morgan Stanley was issued forty-six utility patents in 2010 and Goldman Sachs was issued forty utility patents in 2012. *Id.*

266. *Id.* These companies include, *inter alia*, Sony, Panasonic, Microsoft, Google, and Apple.

267. *Id.* Minolta and Whirlpool have appeared on the list consistently since 1995.

268. See U.S. Patent & Trademark Office, USPTO Statistics, Class 705, Breakout by Organization, *supra* note 104, *available* at http://www.uspto.gov/web/offices/ac/ido/oeip/taf/tecasga/705_torg.htm.

269. From 1969-2005, the PTO issued Citibank and affiliated entities fifty-nine Class 705 patents. See *supra* note 247. During that same time period, the other G-SIFs received a total of eight Class 705 patents broken down as follows: BOA (one); JP Morgan (one); Wells Fargo (zero); Goldman Sachs (four); State Street (zero); Morgan Stanley (two); Bank of NY Mellon (zero). *Id.*



As the table reflects, all of the G-SIFs except State Street have increased their Class 705 patenting over the past six years. Of the 320 firms listed in the Class 705 report, IBM was the organization granted the most patents between 1969 and 2012 with 1,402. While none of the G-SIFs are in IBM's league, some of them are real contenders in the world of business method patents. JP Morgan has 238 Class 705 patents, ranking 9th overall; BOA has 133 Class 705 patents, ranking 21st overall; and Goldman Sachs has 130 Class 705 patents ranking 22nd overall.²⁷⁰ This is particularly remarkable given that these three banks had so few Class 705 patents before 2006.²⁷¹ In other words, this rapid rise in the ranks is based exclusively on the banks' patenting activity over the past six years.

Moreover, most of the G-SIFs have continued their patenting efforts even after the AIA. The most extreme example is BOA, which has filed at least seventy Class 705 patent applications since September 2011.²⁷² But Goldman, JP Morgan, Morgan Stanley, and Wells Fargo have also pursued business method patents in the post-AIA era.²⁷³ We cannot

270. Morgan Stanley and Citigroup would have ranked higher if the patents owned by their affiliates were consolidated.

271. See *supra* note 265 (discussing G-SIFs' patenting activity before 2006).

272. We gathered this data from the PTO database on patent applications available here: <http://appft1.uspto.gov/netahtml/PTO/search-adv.html>. The search terms used for BOA were [an/"Bank of America" and ccl/705/\$; for Goldman [an/"Goldman Sachs" and ccl/705/\$; for JP Morgan [an/"JP Morgan" and ccl/705/\$; for Morgan Stanley [an/Stanley and ccl/705/\$; and for Wells Fargo [an/"Wells Fargo" and ccl/705/\$. From this list, we identified those application filed after September 16, 2011—the date the AIA was enacted. Similar searches were run for Citigroup, NY Mellon, and State Street, but no Class 705 post-AIA patent applications were found.

273. *Id.*

determine the exact number of pending patent applications submitted by banks because such information is not generally published until eighteen months after filing.²⁷⁴ But the fact that banks are continuing to patent at all raises questions about what the future holds.²⁷⁵

B. Character of Big Bank Patents

Clearly, big banks are patenting more now than ever before, but the nature of those patents is difficult to measure. We do not offer an empirical characterization of G-SIFIs' patent holdings or activities. Such a study is beyond the scope of this project.²⁷⁶ Instead, we offer some general observations regarding recent patent activity that may be worthy of future study. As discussed in Part I, financial innovations can be categorized into the following groups: new products or services; new processes or procedures; and new organizations.²⁷⁷ The following discussion includes observations of big banks' business method patents for each of those groups.²⁷⁸

Not surprisingly, many Class 705 patents relate to traditional banking products and services, *i.e.*, lending and deposit taking. BOA holds patents for "evaluating customers' ability to manage revolving credit"²⁷⁹

274. 35 U.S.C. § 122(b)(1)(A) (2006).

275. See Vanessa Kortekaas, *Financial Services Patents Hit Seven-Year Low*, FINANCIAL TIMES (June 2, 2013), <http://www.ft.com/intl/cms/s/0/51fe3f9c-cb65-11e2-8ff3-00144feab7de.html> (stating that, although the number of financial patent applications is down, there were still 3,500 financial services patent applications filed worldwide in 2012).

276. Duffy and Squires studied 100 recent 705/35 patents. Based on that data, Duffy and Squires offer two observations. First, a significant number of patents in that group had little to do with finance. Second, even among the patents that had a connection to finance "very few even *purported* to disclose the type of cutting edge financial engineering in valuation or product and market design that would be cognizable as a significant development in financial theory (with significance judged by the standards that would be applied in business schools or economics departments)." Duffy & Squires, *supra* note 47, at 26.

277. As discussed in Part I, financial innovation can also be categorized according to function. Both types of categorizations present difficulties in application in the context of reviewing patents. We found that the new products/processes/organizations categorization presented relatively fewer difficulties.

278. These categories are overlapping. For example, many new processes and procedures relate directly to new products. Similarly, many new business structures offer new products. See Tufano, *supra* note 22 at 4-5 ("The[se] 'innovations' are sometimes divided into *product* or *process* innovation [i]n practice, even this innocuous differentiation is not clear, as process and product innovation is often linked."). Despite this obvious overlap, we think these categories are a useful mechanism for organizing our discussion of big banks' patents.

279. U.S. Patent No. 8,078,529 (filed May 28, 2009). Revolving credit includes credit cards. This patent involves the aggregation of certain types of spending behavior by customers utilizing revolving credit.

and an “automated teller machine transaction queue.”²⁸⁰ Wells Fargo holds a patent for a “system and method for MICR-based duplicate detection and management.”²⁸¹ While many patents that relate to traditional banking activities do not, on their face, appear especially innovative, some do. For example, BOA owns a patent for a process that measures the “physiological response of a customer during financial activity.”²⁸² This innovation recognizes that while technological advances allow consumers to pay for their purchases with great ease, such convenience may lead to overspending or other undesirable financial transaction behavior. This technology would, among other things, provide a customer with an alert if conditions were present (e.g., elevated heart rate) that would likely produce an unfavorable financial transaction.²⁸³

Big banks’ Class 705 patents also include those relevant to modern, complex financial products. Citibank, for instance, holds a patent for a “system and method for creating and managing a synthetic currency.”²⁸⁴ Goldman Sachs owns a patent for a “system and method for creating, managing and trading hedge portfolios.”²⁸⁵ Bank of New York Mellon owns a patent for a “method and system for securitizing a currency related commodity.”²⁸⁶

Big banks also hold patents relevant to new processes and procedures. Several Class 705 patents relate to internal compliance or risk management. In fact, we found a surprising number of big bank patents that included “risk management” in the title: twenty-one held by Goldman Sachs;²⁸⁷ two by BOA;²⁸⁸ and three by JP Morgan.²⁸⁹ Both Morgan Stanley

280. U.S. Patent No. 8,260,707 (filed July 15, 2008). This patent covers a process by which a customer can initiate a banking transaction from a networked device, e.g., a personal computer. The transaction is then stored and available for completion by the customer at an ATM location.

281. U.S. Patent No. 8,060,442 (filed Apr. 21, 2008). MICR is an acronym for magnetic ink character recognition and refers to the string of characters printed at the bottom of a check. This patent is for a process of detecting the presentation of duplicate checks.

282. U.S. Patent No. 8,417,584 (filed July 29, 2010).

283. *Id.*

284. U.S. Patent No. 6,188,993 (filed Apr. 11, 1997). The patent description explains that “[s]ynthetic currency is created by pooling and dividing into shares a portfolio of highly liquid assets and frequent evaluation and disbursements of dividends on those assets so as to hold the value of the synthetic currency share at unity with the underlying currency.” *Id.*

285. U.S. Patent No. 7,885,885 (filed Aug. 15, 2007). This patent “discloses apparatuses, systems and methods for providing optimal hedge portfolios that minimize single stock idiosyncratic risk for a given level of transactional costs.” *Id.*

286. U.S. Patent No. 8,332,292 (filed Sept. 28, 2005).

287. U.S. Patent Nos. 8,311,933 (filed Oct. 19, 2011); 8,266,051 (filed Jan. 15, 2010); 8,099,357 (filed Feb. 2, 2010); 8,086,617 (filed May 21, 2010); 8,285,615 (filed May 11, 2009); 8,024,251 (filed Sept. 10, 2008); 7,711,637 (filed Feb. 7, 2007); 8,209,246 (filed June 18, 2003); 8,140,415 (filed Mar. 20, 2001); 8,126,800 (filed Mar. 15, 2004); 7,752,227 (filed Mar. 15, 2004); 8,069,105 (filed June 17, 2003); 7,979,347 (filed Nov. 16, 2000);

and the Bank of New York Mellon hold patents involving VaR,²⁹⁰ the popular risk management tool discussed in Part I.

Other big bank patents cover some of the newer business structures also discussed in Part I, such as Internet banks and special purpose vehicles. Several big bank patents support Internet banking operations.²⁹¹ Both Bank of New York Mellon and JP Morgan own patents creating systems that rely on special purpose vehicles or similar structures.²⁹² Given the attractiveness of banks to the sensibilities of wrongdoers, it is not surprising that banks hold patents related to fraud and crime prevention.²⁹³ By way of example, BOA holds a patent for a “fraudulent transaction identification system”²⁹⁴ and one for a “method and system to evaluate anti-money laundering risk.”²⁹⁵

Finally, while our study is focused on business method patents, we note that banks also hold more conventional patents that have nothing to do with the business of banking in particular or business methods generally. BOA owns a patent for video game technology,²⁹⁶ several patents on a light fixture,²⁹⁷ and a patent on a golf ball.²⁹⁸ JP Morgan owns a patent for an “active night vision image intensity balancing system.”²⁹⁹ These non-

7,904,361 (filed June 18, 2003); 7,676,426 (filed June 19, 2003); 8,121,937 (filed July 24, 2003); 7,548,883 (filed Aug. 1, 2003); 7,529,702 (filed Dec. 8, 2003); 7,181,428 (filed Jan. 30, 2001); 7,024,383 (filed Mar. 16, 2000); 6,829,590 (filed Oct. 31, 2000).

288. U.S. Patent No. 7,630,934 (filed Feb. 20, 2008); 7,496,964 (filed Nov. 23, 2004).

289. U.S. Patent No. 8,311,922 (filed Oct. 13, 2010); 7,890,343 (filed Jan. 11, 2005); 7,840,468 (filed Mar. 2, 2007).

290. U.S. Patent No. 8,234,201 (filed Mar. 20, 2009) (“system and method for determining a liquidity-adjusted value at risk (LA-Var)” held by Morgan Stanley); U.S. Patent No. 8,275,686 (filed July 24, 2008) (“methods for measuring hedging value-at-risk and profitability” held by Bank of New York Mellon).

291. U.S. Patent No. 8,458,070 (filed June 15, 2012) (held by JP Morgan Chase); U.S. Patent No. 7,971,059 (filed June 28, 2011) (held by Bank of America); U.S. Patent No. 7,865,605 (filed June 16, 2008) (held by Citibank).

292. U.S. Patent No. 8,326,720 (filed Aug. 4, 2012) (“systems and methods for securitizing a commodity” owned by Bank of New York Mellon); U.S. Patent No. 8,374,938 (filed Mar. 26, 2010) (“system and method for managing hedging of longevity risk” owned by JP Morgan Chase); U.S. Patent No. 8,332,292 (filed Sept. 28, 2005) (“method and system for securitizing a currency related commodity” owned by Bank of New York Mellon).

293. According to the PTO, Jacob Perkins was granted the first patent in financial services for an invention for “Detecting Counterfeit Notes.” *USPTO White Paper, supra* note 57, at 2.

294. U.S. Patent No. 8,103,568 (filed Oct. 15, 2008).

295. U.S. Patent No. 8,412,601 (filed Sept. 30, 2004).

296. U.S. Patent No. 8,251,815 (filed June 19, 2008).

297. U.S. Design Patent Nos. D601,297 (filed May 6, 2009) and D601,296 (filed May 6, 2009).

298. U.S. Patent No. 6,482,109 (filed Nov. 29, 2000).

299. U.S. Patent No. 7,646,884 (filed Jan. 12, 2008). This patent relates to night vision system for a vehicle. The Ford Motor Company is also an assignee on this patent.

financial patents raise interesting legal questions. Under federal law, “financial holding compan[ies]”³⁰⁰ are permitted to engage only in activities that are “financial in nature or incidental to such financial activity” or, in some instances, activities that are “complementary to a financial activity.”³⁰¹ All of the G-SIFs are financial holding companies³⁰² and are, therefore, subject to this activity restriction. While we defer analysis of this question to future study, as an initial matter we find it hard to imagine that patenting a video game is “financial in nature,” “incidental to such financial activity,” or even “complementary to a financial activity.”³⁰³ Golf balls, on the other hand, are clearly essential to banking.³⁰⁴

C. Why Are Big Banks Patenting?

Entities are motivated to patent their inventions for various reasons. Some of the most common explanations are that patents help commercialize inventions, provide a return on investment, and prevent competitors from free-riding.³⁰⁵ Even while banks may be engaging in this traditional calculus, we consider additional explanations for the recent higher rates of patenting by big banks.

An obvious explanation is that banks increased their patenting activity once *State Street* made clear that business methods were patentable. If it were that simple, however, one would expect to see a significant rise in the number of Class 705 patents issued to G-SIFs in the few years post-*State Street*, but this is not the case.³⁰⁶ Instead, the surge in bank patents did not materialize until a decade after the Federal Circuit decided *State Street*.

Another possibility is that G-SIFs started patenting defensively when others sued or threatened to sue for patent infringement. The purpose of defensive patenting is three-fold: (1) to prevent others from patenting an

300. 12 U.S.C. § 1841(p) (2006).

301. 12 U.S.C. § 1843(k)(1); Saule T. Omarova, *Merchants of Wall Street: Banking, Commerce and Commodities*, 98 MINN. L.R. 1178 (2013), available at <http://ssrn.com/abstract=2180647>; Saule T. Omarova & M. Tahyar, *That Which We Call a Bank: Revisiting the History of Bank Holding Company Regulation in the United States*, 31 REV. BANKING & FIN. L. 113 (2011).

302. For a current list of all financial holding companies, see Bd. of Gov. of the Fed. Reserve Sys., Financial Holding Companies (Oct. 8, 2013), <http://www.federalreserve.gov/bankinfo/fhc.htm>.

303. 12 U.S.C. § 1843(k)(1) (2006).

304. That BOA owns a patent on a golf ball is somewhat amusing. In the traditional 3-6-3 model of commercial banking, bankers paid 3% on deposits; charged 6% interest on loans; and were on the golf course by 3:00. Over the last forty years, the 3-6-3 model has become less reality and more old joke. See Schooner & Taylor, *supra* note 32, at 7-11.

305. Merges, Mennell & Lemley, *supra* note 42, at 125-34.

306. See USPTO Statistics, *supra* note 104.

invention; (2) to discourage patent suits with the threat of a counterclaim; and (3) to create prior art that can be used to invalidate asserted patents.³⁰⁷ Ideally, defensive patents avoid litigation and force competitors to enter into cross-licenses since each party owns patents covering the others' products.³⁰⁸ Of course, defensive patenting works best against competitors, as opposed to PAEs, because PAEs do not manufacture products and cannot be countersued for infringement.³⁰⁹ Perhaps this explains why the big banks have not sued each other for patent infringement, but instead have been targeted by PAEs.³¹⁰

Alternatively, the G-SIFIs may be patenting their inventions in order to sell those patent rights to others. As discussed earlier, a substantial marketplace has developed for patents in recent years, so it is possible that banks are acquiring patents and then selling them to PAEs to enforce or exploit as they see fit.³¹¹ Unfortunately, little public information exists regarding these sorts of transactions. Therefore, it is not possible to know for certain what banks are doing with their patents post issuance. Yet, given how common this transfer practice has become in the high tech industry,³¹² it seems fair to speculate that banks are engaged in it as well.

Banks could also be holding onto their patents and licensing them to practicing companies as a revenue source. Many companies, IBM being a prime example, license (rather than practice) a substantial portion of their patent portfolios.³¹³ Like patent transfers, however, the publicly available information regarding patent licenses is extremely limited.³¹⁴ One way patent licenses come to light is through litigation, but so far big banks have not sought to enforce their patents in court. That could change, however, as the patent landscape continues to evolve and banks build bigger and stronger patent arsenals.

307. Colleen V. Chien, *From Arms Race to Marketplace: The Complex Patent Ecosystem and Its Implications for the Patent System*, 62 HASTINGS L.J. 297, 299-301 (2010) [hereinafter Chien, *From Arms Race*]

308. *Id.* at 307-10.

309. *Id.*

310. *See id.* (arguing that defensive patenting has reduced the number of competitor suits in the high tech arena); *see also supra* Part III (discussing patent litigation against the banking industry).

311. Chien, *From Arms Race*, *supra* note 307, at 301.

312. *Id.* at 300-01.

313. *See, e.g.,* Xuan-Thao Nguyen & Jeffrey A. Maine, *The History of Intellectual Property Taxation: Promoting Innovation and Other Intellectual Property Goals?*, 64 SMU L. REV. 795, 848 (2011) ("Texas Instruments and IBM changed their core businesses, moved away from manufacturing products, and embraced a licensing model that allowed them to capitalize on their strengths based on powerful patent portfolios.").

314. Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991, 2021-23 (2007).

Finally, we do not doubt that some part of the increasing interest in patenting by big banks is a result of law firm marketing.³¹⁵ Changes in law provide opportunities for lawyers to market their services. Certainly, *State Street* and its progeny have given law firms the basis for selling patent expertise beyond the more typical client base of manufacturing, pharmaceutical, and biotechnology firms. Many bank managers or even in-house counsel may simply have not had patents on their radars in the past, but have responded favorably to the suggestion that patent protection be added to their repertoire for protecting intellectual property.

VI. IMPLICATIONS OF BANK PARTICIPATION IN THE PATENT SYSTEM

While the banking industry and the patent system have co-existed in this country for centuries,³¹⁶ only recently have these two institutions begun to intersect. In this final Part, we consider potential implications of big banks participating in our patent system, both as advocates for patent reform and as patent owners themselves.

A. *The Banks as Patent Reformers*

For almost a decade now, patent reform has been a hot topic on Capitol Hill. During the initial phase of the patent reform effort, which began around 2005 and culminated in the passage of the AIA in 2011, the banks played a prominent role, despite being relative newcomers to the patent arena.³¹⁷ The banks aligned themselves with high tech/software companies and together they lobbied Congress for various changes to the patent system—changes that, for the most part, would weaken patent owners' rights vis à vis alleged infringers.³¹⁸ Importantly, these

315. See, e.g., NovusIP, LLC Website, *Financial Patents*, available at <http://www.novusip.com/Practice-Areas/Financial-Patents.shtml> (last visited Nov. 20, 2013) (offering legal services related to patent protection); Chapman & Cutler LLP Website, *Patent Procurement*, available at <http://www.chapman.com/practices-Patent-Procurement.html> (last visited Nov. 20, 2013) (offering legal services for the procurement and enforcement of patents).

316. See, e.g., Jerry W. Markham, A FINANCIAL HISTORY OF THE UNITED STATES: FROM CHRISTOPHER COLUMBUS TO THE ROBBER BARONS (1492-1900) 88-89 (M.E. Sharpe Books 88-89 2002) (discussing at length the development of the United States banking system while mentioning the existence of patents); Edward C. Walterscheid, *Patents and Manufacturing in the Early Republic*, 80 J. PAT. & TRADEMARK OFF. SOC'Y 855 (1998) (discussing the initial interpretations and purposes of the U.S. patent system).

317. See *supra* Part IV.A (recounting the banks' evolving role in patent reform).

318. *Id.*; see also William C. Rooklidge, *Reform of the Patent Laws: Forging Legislation Addressing Disparate Interests*, 88 J. PAT. & TRADEMARK OFF. SOC'Y 9, 13-16 (2006) (discussing how proposals for limits on injunctive relief and damages could "alter the

recommendations were met with resistance from a separate powerful coalition consisting of pharmaceutical and biotechnology firms who advocated for a first-to-file system, elimination of the inequitable conduct defense, and other measures to protect patent owners.³¹⁹

Still, the banks emerged as clear winners in this first round of reform, securing broad rights to challenge financial patents at the PTO under section 18 of the AIA.³²⁰ When section 18 was first proposed, commentators pondered why banks should get such a “sweet deal,”³²¹ and high-profile figures in the patent community, including the former Chief Judge of the Federal Circuit, called it a blatant “bail out” for a favored constituency.³²² Despite the opposition and criticism, section 18 became law—a testament to the strength of the bank lobby. Indeed, banks have been called the most powerful lobby in Congress today.³²³

It is precisely because of this influence that we believe the banks’ participation in the current patent reform effort is worthy of close attention. As Kesan and Gallo have observed, “The design of a patent system, like any other formal institution, depends not only on objective technical or scientific characteristics that will promote optimal efficiency, but also on the political preferences of the economic actors with a stake in the matter to be regulated.”³²⁴ The most recent patent reform measures,³²⁵ which are primarily aimed at curbing PAE or troll activity, are supported by the high tech and banking industries,³²⁶ as well as a number of retailers, restaurants,

balance of rights between patent owners and accused infringers”).

319. Eric E. Williams, *Patent Reform: The Pharmaceutical Industry Prescription for Post-Grant Opposition and Remedies*, 90 J. PAT. & TRADEMARK OFF. SOC’Y 354 (2008).

320. See *supra* Part IV.B (discussing the AIA and the big banks’ role in this legislative reform effort).

321. Janie Lorber, *Patent Carve-Out Finds Opponents Left and Right*, ROLL CALL (June 15, 2011, 12:00 AM), http://www.rollcall.com/issues/56_139/patent-reform-bill-206475-1.html.

322. Michel, *supra* note 16 (criticizing section 18 and arguing that Congress should remove it from the patent reform bill).

323. See, e.g., Interview by Ray Hanania with Richard Durbin, U.S. Senator, Ill., on Radio Chicagoland (WJGG 1530 AM radio broadcast Apr. 27, 2009), available at <http://www.progressillinois.com/sites/progressillinois.com/files/durbin-banks.mp3> (explaining that the bank lobby is the most powerful in Congress: “they frankly own the place.”).

324. Kesan & Gallo, *supra* note 217, at 1348.

325. See *supra* Part IV.C (summarizing the legislative, executive, and judicial patent reform proposals).

326. It is true that the high tech industry is not monolithic in its view on patent policy. See R. Allison, Abe Dunn & Ronald J. Mann, *Software Patents, Incumbents and Entry*, 85 TEX. L. REV. 1579, 1621 (2007) (stating that the software industry has diverse perspectives on patent policy). Indeed, as discussed earlier, several leading software companies like IBM and Microsoft opposed the expansion of the § 18 CBM program, while others (like Google) supported it. Yet a substantial number of the industry players support the remaining reform efforts, which are directed primarily at patent trolls. See *About the Coalition*, COALITION

grocery stores, and other small business groups.³²⁷ What may be absent from this wave of reform, however, is the formidable counter-voice that the pharmaceutical and biotech industries provided Congress during the last reform effort. Because PAEs don't usually target and sue pharmaceutical companies, that industry is less interested in the present debate.³²⁸ This leaves the door open for banks to take on greater significance in shaping patent law.³²⁹

This possibility of increased bank involvement in the patent system should cause pause. Just a few years ago, big banks had virtually no stake in the patent system, while the manufacturing and pharmaceutical industries have decades of experience in this area.³³⁰ Moreover, even though banks have begun to patent their inventions more, skepticism remains about the efficacy of patents with respect to financial innovation.³³¹

This skepticism should come as no surprise in light of some fundamental differences between technological innovation, on the one hand, and financial innovation, on the other.³³² Pharmaceutical innovation

FOR PATENT FAIRNESS, <http://www.patentfairness.org/learn/about/> (last visited Oct. 17, 2013); July 17 Letter, *supra* note 239 at 1 (listing various organizations that wrote to Congress to urge support for current reform proposals).

327. See Letter to Sen. Patrick Leahy, Chairman, Committee on the Judiciary, et al. in support of Patent Reform (Oct. 28, 2013), *available at* <http://www.ccianet.org/wp-content/uploads/2013/10/Orgs-Letter-to-Congress-on-CBM.pdf> (listing various organizations that wrote to Congress to urge support for current reform proposals, e.g. National Grocers Association, National Restaurant Association, and National Retail Association); July 17 Letter, *supra* note 239, at 1 (stating the same).

328. See Dutra, *supra* note 239 (stating that the "patent troll problem has generally not affected the pharmaceutical" industry); Tom Ewing, *Indirect Exploitation of Intellectual Property Rights by Corporations and Investors*, 4 HASTINGS SCI. & TECH. L.J. 1, 30 (2012) (stating that there are very low levels of NPE litigation in the pharmaceutical industry).

329. See Letter from the American Bankers Association, the Financial Services Roundtable, and other bank lobbyists to Rep. Goodlatte dated Oct. 29, 2013, *available at* <http://www.aba.com/Advocacy/LetterstoCongress/Documents/PatentTrolls-HJudJointLetter-102913.pdf> (expressing support for the Innovation Act and urging Rep. Goodlatte to propose further reforms to the patent system); Tracy Kitten, Push for Patent Reform Advances (Nov. 27, 2013), *available at* <http://www.bankinfosecurity.com/interviews/patent-reform-legislative-update-i-2121> (discussing the banking industry's support for the current patent reform measures); Press Release, Independent Community Bankers of America (Nov. 21, 2013), *available at* <http://www.icba.org/news/newsreleasedetail.cfm?ItemNumber=175133> (praising the Innovation Act and suggesting additional reforms to the patent system).

330. See Schreiner & Axt, *supra* note 193, at 725-26 (explaining that banks did not worry about patents before *State Street* and believed patents were limited to "hard technology").

331. Fusco, *Patentability of Financial Methods*, *supra* note 27, at 16-23.

332. There is some indication that financial innovation may be heading in a more technical direction, as compared to more traditional financial innovation, which consists primarily of business methods and systems. See, e.g., Kortekaas, *supra* note 275 (discussing technology-based financial innovations, including Barclay's smartphone apps to enable

is a useful example. Pharmaceutical products are developed over an extended period of time during which they are tested, challenged, and replicated before introduction to the market.³³³ While some pharmaceuticals are fabulously successful, many fail, so the industry relies on patents to recoup development costs.³³⁴ Financial innovation, by contrast, occurs very quickly with little experimentation or external scrutiny.³³⁵ Consequently, banks and other financial innovators tend not to value patents as highly as inventors of more traditional technologies.

In the end, the big banks are nascent players in the patent system whose experience with and contextualization of this complex landscape are far too limited to effectively advocate for well-balanced patent policy. Yet, because of their powerful lobbying force, the banks are poised to exert disproportionate influence over our patent system in the years to come.

B. The Banks as Patent Owners

Most of the country's largest banks have increased their patent holdings in recent years, probably as a defensive response to actual and threatened infringement suits. Whatever the initial reason for pursuing patent protection, the end result is that several G-SIFIs now own substantial patent portfolios. What does this mean for our patent system, specifically, and our society, more generally? What potential implications should we consider going forward as our financial industry and patent system become further intertwined?

1. Litigation Implications

More patents generally translate to more lawsuits,³³⁶ so an increase in litigation surrounding financial business method patents is a distinct possibility. It might seem ironic that defensive patents—which are

customers to make faster payments).

333. See Melissa F. Wasserman, *The PTO's Asymmetric Incentives: Pressure to Expand Substantive Patent Law*, 72 OHIO ST. L.J. 379, 423 n.161 (2011) (describing how patent law affects the decisions of the pharmaceutical industry).

334. See *id.*

335. See Glaser, *supra* note 41, at 18 (describing the fast-paced nature of financial innovation); Charles W. Murdock, *The Big Banks: Background, Deregulation, Financial Innovation, and "Too Big to Fail,"* 90 DENV. U. L.REV. 505, 531 (2012) ("To put financial innovation on the same continuum as technological innovation is disingenuous."); James F. Bauerle, *Technology, Law & Banking*, 125 BANKING L.J. 563, 570 (2008) (explaining that technological innovations are "tested and certified" and suggesting that financial innovations should be too).

336. See, e.g., ADAM B. JAFFE & JOSH LERNER, *INNOVATION AND ITS DISCONTENTS: HOW OUR BROKEN PATENT SYSTEM IS ENDANGERING INNOVATION AND PROGRESS, AND WHAT TO DO ABOUT IT* 56 (2004) (explaining that some patent holders use patents as weapons).

supposed to facilitate “patent peace”—actually increase litigation, but that is precisely what happened in the high tech sector.³³⁷ In the past fifteen or so years, high tech companies have stockpiled patents to protect themselves against litigation.³³⁸ Over time, companies have come to realize they no longer need all these unused patents—either because litigation threats from competitors have dissipated or because defensive patents are ineffective against PAEs. These unused patents are sold to PAEs “who can make better use of them,” namely by asserting them against other practicing companies.³³⁹ Bank patents may follow a similar trajectory.

Or perhaps the G-SIFIs will attempt to profit by enforcing their patents themselves. There are a few different ways the banks might accomplish this. First, as noted above, the banks could enforce their patents through licensing campaigns.³⁴⁰ Other companies, including financial services firms like American Express, have successfully exploited their once defensive patent portfolios this way.³⁴¹ Second, banks could create intellectual property subsidiaries to sue non-competitors for patent infringement.³⁴² Finally, the banks could start suing each other.³⁴³ Before the Smartphone wars, Apple primarily used its patents for defensive purposes and was generally viewed as a target of patent litigation.³⁴⁴ But that all changed when Apple sued Samsung, Motorola, HTC, and others for patent infringement over its smartphone and tablet technology.³⁴⁵ Although

337. Chien, *From Arms Race*, *supra* note 307, at 308, 337-40.

338. *Id.* at 340-41.

339. *Id.* at 341 (internal quotations omitted).

340. See *supra* Part V.C (discussing why big banks are patenting their inventions).

341. See Chien, *From Arms Race*, *supra* note 307, at 342; The Evolving IP Marketplace: The Operation of IP Markets: Hearing Before the Fed. Trade Comm’n 38 (Apr. 17, 2009) (statement of Tracey R. Thomas, Chief IP Strategist and License Negotiator, American Express Co.) (explaining that some companies including American Express have found it profitable to enforce their patent portfolios).

342. See Chien, *From Arms Race*, *supra* note 307, at 342; Jay P. Kesan, David L. Schwartz & Ted Sichelman, *Paving the Path to Accurately Predicting Legal Outcomes: A Comment on Professor Chien’s Predicting Patent Litigation*, 90 TEX. L. REV. 97, 104 (2012) (“[A] large manufacturing company may be the parent of an IP holding company. Yet, executives at the parent company often decide whether to litigate and, effectively, control all aspects of the litigation.”).

343. But see Fusco, *Patentability of Financial Methods*, *supra* note 27, at 18-20, 27 (concluding that, for many financial institutions, it is more advantageous to be able to copy competitors’ products than to have the exclusive rights over one’s own products).

344. Chien, *From Arms Race*, *supra* note 307, at 322.

345. See, e.g., *Smartphone Cases Caught Up in Patent Wars*, CHICAGO TRIBUNE (Jan. 31, 2013), http://articles.chicagotribune.com/2013-01-31/business/chi-smartphone-cases-nowcaught-up-in-patent-wars-20130131_1_patent-wars-lifeproof-smartphones (last visited Nov. 9, 2013); Glenn G. Lammi, *‘Tis the Season for More Smartphone ‘Patent War’ Court Rulings*, FORBES (Dec. 19, 2012), <http://www.forbes.com/sites/wlf/2012/12/19/tis-the-season-for-more-smartphone-patent-war-courtrulings/>; Charles Duhigg & Steve Lohr, *The Patent, Used as a Sword*, N.Y. TIMES (Oct. 8, 2012),

the litigation is ongoing, Apple has enjoyed some great successes so far, including a \$1.05 billion jury verdict in 2012 in its suit against Samsung.³⁴⁶ Although the judge reduced the verdict by \$405 million, on retrial the jury awarded \$290 million, so Apple still recovered more than \$900 million in damages.³⁴⁷

Litigation can certainly be profitable for patent owners, yet there are serious costs as well. Patent litigation has always been risky and unpredictable, but that may be even truer going forward as patents are subjected to post-grant review, discovery in patent cases is severely limited, and district courts exercise wider latitude with respect to attorney's fees.³⁴⁸ Moreover, patent litigation detracts firms from their core business, diverts resources, jeopardizes important business relationships with competitors, and potentially impedes long-term growth.³⁴⁹ This is especially problematic for small companies for whom patent litigation is often cost prohibitive.³⁵⁰ In short, excessive patenting and litigation can deter small firms from entry into a market, thereby stifling competition to the detriment of consumers.³⁵¹

The costs of patent litigation are further complicated in the context of the business of banking. As discussed in Part V.B., the activities of financial holding companies (which include all the G-SIFIs) are limited to

<http://www.nytimes.com/2012/10/08/technology/patent-wars-among-tech-giants-canstifle-competition.html> (discussing Apple's litigious nature in regards to protecting its products through patent suits).

346. Nick Wingfield, *Jury Awards \$1 Billion to Apple in Samsung Patent Case*, N.Y. TIMES (Aug. 24, 2012), available at http://www.nytimes.com/2012/08/25/technology/jury-reaches-decision-in-applesamsung-patent-trial.html?_r=0.

347. Gerry Shih, *U.S. Jury Awards Apple \$290 Million in Retrial Against Samsung*, REUTERS (Nov. 21, 2013, 6:29 PM), <http://www.reuters.com/article/2013/11/21/us-apple-samsung-verdict-idUSBRE9AK19V20131121>.

348. See *supra* Part IV.C (discussing new proposals for patent reform).

349. See, e.g., FED. TRADE COMM'N, TO PROMOTE INNOVATION: THE PROPER BALANCE OF COMPETITION AND PATENT LAW AND POLICY, 5-6 (2003), available at <http://www.ftc.gov/os/2003/10/innovationrpt.pdf> (explaining that questionable patents may deter innovation or raise its costs); Judge James Scott Sledge, *Mediating Copyright and Intellectual Property Disputes*, Sept./Oct. 2013, LANDSLIDE at 48, 49, available at http://www.mccammongroup.com/articles/LAND_MAG_V6N1_SepOct_Sledge.pdf ("Business relationships are a casualty of litigation.").

350. See, e.g., Gwendolyn G. Ball & Jay P. Kesan, *Transaction Costs and Trolls: Strategic Behavior by Individual Inventors, Small Firms and Entrepreneurs in Patent Litigation* 5-6 (Univ. of Ill. Pub. Law & Legal Theory Research Paper Series, Paper No. 08-21, Univ. of Ill. Law & Econ. Research Paper Series, Paper No. LE09-005 (2009) (explaining that small firms have fewer resources to pursue patent litigation), available at <http://papers.ssrn.com/abstract=1337166>.

351. See, e.g., James Bessen, *Adoption Costs and the Rate of Return to R&D* 4-6 (2002) (introducing a formula which estimates adoption costs), available at <http://www.researchoninnovation.org/rdadopt.pdf>.

those that are “financial in nature.”³⁵² The full explanation for such limitation is complex and beyond the scope of this Article. However, one of the less discussed justifications for limiting the activities of banks is to ensure that banks provide an impartial and efficient source of credit without the prospect of distraction from that task by unrelated or conflicting activities.³⁵³ From this view, banks are seen as something like a public utility in that they provide a necessary public service and in return receive government support through, among other programs, deposit insurance.³⁵⁴ One might conclude that banks’ involvement in patent litigation—especially in cases in which the patented invention is unrelated to their core operations—is an undesirable distraction from the business of banking. On the other hand, if patent litigation by big banks centers on innovations that are important to the banking business, then big banks (who already maintain a competitive advantage by being deemed “too big to fail”) may gain even greater competitive advantage over smaller institutions that can afford neither the costs of litigation, nor the costs of licensing patented processes.

2. Regulatory Implications

To the extent that big banks are highly regulated entities, we also consider the possibility of regulatory implications associated with this increase in the big banks’ patent activities. A search through the patents owned by large financial institutions turns up all of the high profile culprits of the recent Financial Crisis, e.g., securitizations, hedge funds, VaR, etc. We wonder whether increased reliance on the patent process for such innovations has benefits beyond those associated with the patent system. Perhaps the enhanced transparency associated with the patent process is valuable. The filing of a patent application requires the inventor to fully describe the invention.³⁵⁵ The disclosure requirement provides transparency that is obviously missing when inventors rely on trade secrets to prevent appropriability. While bank regulators and the new Office of Financial Research³⁵⁶ have the ability to probe financial institutions for

352. *See supra* note 202.

353. *See Omarova, supra* note 301, at 10 (“The need to ensure an impartial and efficient allocation of credit throughout the national economy provides another compelling justification for disallowing the mixing of banking and commerce.”).

354. Former Kansas City Federal Reserve President Thomas Hoenig attracted attention when he labeled banks public utilities in the wake of the bailouts of the Financial Crisis. *See Joe Rauch, Big Banks are Government Backed: Fed’s Hoenig*, REUTERS, (Apr. 12, 2011), <http://www.reuters.com/article/2011/04/12/us-fed-hoenig-idUSTRE73B3S820110412>. Hoenig is currently Vice Chairman of the Federal Deposit Insurance Corporation.

355. *See supra* Part II.B. (discussing the patentability of financial innovations).

356. The Dodd Frank Wall Street Reform and Consumer Protection Act of 2010

detailed information regarding their financial products even when such information is not available to the public, patents may still be useful to regulators because they “push information exchange from an informal basis to a more formal one.”³⁵⁷

To highlight this point, consider what happens if a bank forgoes patent protection and relies on trade secrecy instead. Trade secrets, unlike patents, can last forever.³⁵⁸ So unless the trade secret is reverse engineered or disclosed some other way by a third party, the bank could protect its invention indefinitely. But even if a bank chooses to disseminate information regarding the innovation either directly (e.g., through press releases) or indirectly (e.g., through interactions with regulators, customers, or even competitors), the quality of that information may be low. With a patent, on the other hand, formal disclosure is required in the patent application so the invention can be practiced by someone having ordinary skill in the art.³⁵⁹ The patent process may serve as an additional source of information to regulators interested in bank activities—especially those that the banks deem worthy of significant investment. We also recognize the possibility that the information generated in the patent process might not be useful to regulators—either because it is irrelevant to regulatory goals or too stale to illuminate current practices.

It may also be true that the patenting of certain innovations could be detrimental to effective bank regulation. Consider, for example, the fact that big banks have shown interest in patenting risk management processes.³⁶⁰ As discussed in Part I, risk management has become an essential tool of bank regulation. If any of these risk management innovations proves particularly effective, regulators may want to adopt such processes as part of best, or even required, practices for all banks, large and small. If the process is patented and cannot be designed around, then the owners of such patents may balk at the suggestion of use by their competitors (or, at least, they will want to charge for it). After all, the whole point of the innovation is that it gives a competitive advantage. Therefore, allowing for the patenting of such processes may prevent efforts to improve overall financial stability. Admittedly this is conjecture, but

established the Office of Financial Research (OFR) in recognition of the lack of financial data and sophisticated analysis of the financial system prior to the Financial Crisis. The OFR supports the Financial Stability Oversight Council by providing information and analytical tools regarding future systemic threats. 12 U.S.C. § 5343 (2006).

357. Merges, *supra* note 40, at 23.

358. Merges, Mennell & Lemley, *supra* note 42, at 27.

359. See, e.g., *ALZA Corp. v. Andrx Pharm., LLC*, 603 F.3d 935, 940-41 (Fed. Cir. 2010) (holding the patent in question invalid for lack of enablement).

360. See *supra* notes 287-289 and accompanying text (listing various patents held by financial institutions).

similar problems have arisen with standards essential patents in the high tech industry.³⁶¹

CONCLUSION

The story of big banks and their business method patents may be in its first chapter. This Article highlights some of the potential tensions created by the intersection of the financial industry and the patent system—two vitally important institutions to our nation’s prosperity. Big banks’ experience with our patent system is short-lived and their motivations for seeking patents are likely multifaceted. If big banks continue to seek patent protection, engage in patent litigation, and lobby Congress for reform, the impact on the U.S. patent system could be significant. Big banks have the political and economic power to impose change that spills well beyond the boundaries of financial innovation and the financial industry. While it is too soon to tell what this merging of landscapes will mean for our financial system, innovation policy, or society more generally, we suggest that policymakers and stakeholders keep a close eye as this relationship continues to evolve.

361. See generally Mark A. Lemley, *Intellectual Property Rights and Standard-Setting Organizations*, 90 CAL. L. REV. 1889 (2002) (discussing the role of standard-setting organizations in the patent industry).

APPENDIX

| CASE NUMBER | DATE FILED | PATENT | PETITIONER | PATENT OWNER |
|----------------|---------------|---------|------------------------------|-------------------------------|
| CBM2014-00077 | 2/21/14 | 7424438 | Monster Worldwide, Inc. | |
| CBM2014-00076 | 2/19/14 | 8311945 | US Bancorp | |
| CBM2014-00075 | 2/18/14 | 7827119 | GTNX, Inc. | |
| CBM2014-00074 | 2/18/14 | 7752142 | GTNX, Inc. | |
| CBM2014-00073 | 2/19/14 | 7761387 | GTNX, Inc. | |
| CBM2014-00072 | 2/18/14 | 7756794 | GTNX, Inc. | |
| CBM2014-00071 | 2/18/14 | 6963826 | ComScore, Inc. | |
| CBM2014-00070 | 2/12/14 | 8374901 | Monster Worldwide, Inc. | |
| CBM2014-00069 | 2/12/14 | 8374901 | Indeed, Inc. | |
| CBM2014-00068 | 2/12/14 | 7424438 | Indeed, Inc. | |
| CBM2014-00064 | 1/29/14 | 8161104 | Experian Marketing Solutions | RPOST Int'l |
| CBM2014-00063 | 1/28/14 | 8489420 | CoreSource, Inc. | Quality Healthcare Intermed., |
| CBM2014-00062 | 1/28/14 | 8036916 | CoreSource, Inc. | Quality Healthcare Intermed., |
| CBM2014-00061 | 1/28/14 | 7117165 | Coupa Software, Inc. | Ariba, Inc. |
| CBM2014-00060 | 1/23/14 | 6857022 | MotionPoint Corp. | Trans Perfect Global, Inc. |
| CBM2014-00059 | 1/8/14 | 7899704 | Cardlytics, Inc. | Tuition Fund LLC |

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|---------------|----------|---------|----------------------------|---------------------------|
| CBM2014-00058 | 1/8/14 | 7653572 | Cardlytics, Inc. | Tuition Fund LLC |
| CBM2014-00057 | 1/7/14 | 5910988 | Jack Henry & Assocs. Inc. | Data Treasury Corp. |
| CBM2014-00056 | 1/7/14 | 6032137 | Jack Henry & Assocs. Inc. | Data Treasury Corp. |
| CBM2014-00054 | 12/23/13 | 7035914 | Google, Inc. | SimpleAir, Inc. |
| CBM2014-00053 | 12/20/13 | 8468099 | Hulu LLC | Intertainer, Inc. |
| CBM2014-00052 | 12/20/13 | 8479246 | Hulu LLC | Intertainer, Inc. |
| CBM2014-00051 | 12/20/13 | 8165939 | Stewart Title Guaranty Co. | Segin Software LLC |
| CBM2014-00050 | 12/19/13 | 8239451 | American Express Co. | Metasearch Sys. LLC |
| CBM2014-00049 | 12/19/13 | 6237916 | GTECH Corp. | SHFL Enter. Inc. |
| CBM2014-00048 | 12/19/13 | 6698759 | GTECH Corp. | SHFL Enter. Inc. |
| CBM2014-00047 | 12/18/13 | 8266000 | Ebay Inc. | Advanced Auctions LLC |
| CBM2014-00044 | 12/15/13 | 7899704 | Edo Interactive, Inc. | Tuition Fund LLC |
| CBM2014-00043 | 12/15/13 | 7653572 | Edo Interactive, Inc. | Tuition Fund LLC |
| CBM2014-00042 | 12/15/13 | 7499872 | Edo Interactive, Inc. | Tuition Fund LLC |
| CBM2014-00041 | 11/22/13 | 6237095 | PNC Bank, N.A. | Maxim Integrated Products |
| CBM2014-00040 | 11/22/13 | 6105013 | PNC Bank, N.A. | Maxim Integrated Products |
| CBM2014-00039 | 11/22/13 | 5949880 | PNC Bank, N.A. | Maxim Integrated Products |

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|---------------|----------|---------|--|------------------------------|
| CBM2014-00038 | 11/22/13 | 5940510 | PNC Bank, N.A. | Maxim Integrated Products |
| CBM2014-00037 | 11/16/13 | 7693783 | SecureBuy, LLC | Cardinal Commerce Corp. |
| CBM2014-00036 | 11/15/13 | 8140429 | SecureBuy, LLC | Cardinal Commerce Corp. |
| CBM2014-00035 | 11/15/13 | 7051002 | SecureBuy, LLC | Cardinal Commerce Corp. |
| CBM2014-00034 | 11/13/13 | 7596784 | Rackspace Hosting, Inc. | Clouding IP LLC |
| CBM2014-00033 | 11/12/13 | 7260587 | Bank of America, Nat'l Ass'n | Intellectual Ventures II LLC |
| CBM2014-00032 | 11/12/13 | 7757298 | PNC Fin. Servs. Group, Inc. & PNC Bank | Intellectual Ventures I LLC |
| CBM2014-00031 | 11/12/13 | 6182894 | PNC Fin. Servs. Group, Inc. & PNC Bank | Intellectual Ventures II LLC |
| CBM2014-00030 | 11/12/13 | 7603382 | Bank of America, Nat'l Ass'n | Intellectual Ventures I LLC |
| CBM2014-00029 | 11/12/13 | 7664701 | PNC Fin. Servs. Group, Inc. & PNC Bank | Intellectual Ventures I LLC |
| CBM2014-00028 | 11/12/13 | 8083137 | Bank of America, Nat'l Ass'n | Intellectual Ventures I LLC |
| CBM2014-00027 | 11/9/13 | 5361201 | REDFIN Corp. | Corelogic Solutions |
| CBM2014-00026 | 11/4/13 | 5576951 | eBay Inc. | Landmark Techs., LLC |
| CBM2014-00025 | 11/4/13 | 7010508 | GSI Commerce Solutions, Inc. | Landmark Techs., LLC |
| CBM2014-00024 | 11/1/13 | 8402281 | Voltage Security, Inc. | Protegrity Corp. |
| CBM2014- | 10/25/13 | 5910988 | Fidelity Nat'l | Data |

| | | | | |
|---------------|----------|---------|------------------------------------|-------------------------------------|
| 00021 | | | Info. Servs., Inc. | Treasury Corp. |
| CBM2014-00020 | 10/25/13 | 6032137 | Fidelity Nat'l Info. Servs., Inc. | Data Treasury Corp. |
| CBM2014-00019 | 10/22/13 | 7490091 | American Express Co. | Metasearch Sys. LLC |
| CBM2014-00018 | 10/21/13 | 8037158 | SAP America | Pi-Net Int'l |
| CBM2014-00017 | 10/16/13 | 8209389 | Epsilon Data Mgmt. LLC | RPOST Communications Ltd. |
| CBM2014-00016 | 10/15/13 | 6871325 | Agilysys, Inc. | Ameranth, Inc. |
| CBM2014-00015 | 10/15/13 | 6384850 | Agilysys, Inc. | Ameranth, Inc. |
| CBM2014-00014 | 10/15/13 | 8146077 | Agilysys, Inc. | Ameranth, Inc. |
| CBM2014-00013 | 10/15/13 | 6982733 | Apple, Inc. | Ameranth, Inc. |
| CBM2014-00012 | 10/16/13 | 6625582 | Regions Fin. Corp. | Retirement Capital Access Mgmt. Co. |
| CBM2014-00010 | 10/11/13 | 8224913 | Experian Marketing Solutions, Inc. | RPOST Communications Ltd. |
| CBM2014-00008 | 10/11/13 | 6950807 | Westlake Fin. Servs. | Credit Acceptance Corp. |
| CBM2014-00007 | 10/11/13 | 5412730 | Callidus Software Inc. | TQB Development LLC |
| CBM2014-00006 | 10/9/13 | 7203752 | Google Inc. | Unwired Planet LLC |
| CBM2014-00005 | 10/8/13 | 7024205 | Google Inc. | Unwired Planet LLC |
| CBM2014-00004 | 10/8/13 | 7463151 | Google Inc. | Unwired Planet LLC |

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|---------------|---------|---------|------------------------------|-----------------------------------|
| CBM2014-00003 | 10/4/13 | 5884272 | Google Inc. | Inventor Holdings LLC |
| CBM2014-00002 | 10/4/13 | 5884270 | Google Inc. | Inventor Holdings LLC |
| CBM2014-00001 | 10/1/13 | 8326924 | American Express Co. | Metasearch Sys. LLC |
| CBM2013-00059 | 9/16/13 | 5949880 | Branch Banking & Trust Co. | Maxim Integrated Products, Inc. |
| CBM2013-00058 | 9/17/13 | 7840486 | MasterCard Int'l Inc. | John D'Agostino |
| CBM2013-00057 | 9/17/13 | 8036988 | MasterCard Int'l Inc. | John D'Agostino |
| CBM2013-00056 | 9/11/13 | 7970674 | Trulia, Inc. | Zillow, Inc. |
| CBM2013-00055 | 9/4/13 | 8266015 | GSI Commerce Solutions, Inc. | Clear With Computers, LLC |
| CBM2013-00054 | 8/30/13 | 7908304 | Callidus Software, Inc. | Versata Dev. Grp., Inc. |
| CBM2013-00053 | 8/29/13 | 7958024 | Callidus Software, Inc. | Versata Dev. Grp., Inc. |
| CBM2013-00052 | 8/28/13 | 7904326 | Callidus Software, Inc. | Versata Dev. Grp., Inc. |
| CBM2013-00051 | 9/6/13 | 8266044 | Int'l Securities Exch., LLC | Chicago Board Options Exch., Inc. |
| CBM2013-00050 | 9/6/13 | 7980457 | Int'l Secs. Exch., LLC | Chicago Board Options Exch., Inc. |
| CBM2013-00049 | 9/6/13 | 7356498 | Int'l Secs. Exch., LLC | Chicago Board Options Exch., Inc. |
| CBM2013- | 8/21/13 | 5664110 | eBay, Inc. | Cronos |

| | | | | |
|---------------|---------|----------|----------------------------------|------------------------------|
| 00048 | | | | Techs. LLC |
| CBM2013-00047 | 8/19/13 | RE043904 | David W. Gillman | StoneEagle Servs., Inc. |
| CBM2013-00046 | 8/16/13 | 8438055 | Groupon, Inc. | Blue Calypso, LLC |
| CBM2013-00044 | 8/16/13 | 8452646 | Groupon, Inc. | Blue Calypso, LLC |
| CBM2013-00042 | 8/16/13 | 5878400 | SAP America, Inc. | Versata Software, Inc. |
| CBM2013-00040 | 8/2/13 | 5424944 | Dell, Inc. | Disposition Servs., LLC |
| CBM2013-00038 | 7/29/13 | 8185408 | Search America, Inc. | TransUnion Intelligence, LLC |
| CBM2013-00037 | 7/29/13 | 7333937 | Search America, Inc. | TransUnion Intelligence, LLC |
| CBM2013-00036 | 7/16/13 | 7441196 | Google, Inc. | EMG Technology, LLC |
| CBM2013-00035 | 6/25/13 | 7664516 | Groupon, Inc. | Blue Calypso, Inc. |
| CBM2013-00034 | 6/25/13 | 8457670 | Groupon, Inc. | Blue Calypso, LLC |
| CBM2013-00033 | 6/25/13 | 8155679 | Groupon, Inc. | Blue Calypso, LLC |
| CBM2013-00032 | 6/25/13 | 7792749 | Fidelity Nat'l Info Servs., Inc. | CheckFree Corp. |
| CBM2013-00031 | 6/24/13 | 7996311 | Fidelity Nat'l Info Servs., Inc. | CheckFree Corp. |

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| CBM2013-00030 | 6/24/13 | 7853524 | Fidelity Nat'l Info Servs., Inc. | CheckFree Corp. |
| CBM2013-00028 | 6/24/13 | 7383223 | Fidelity Nat'l Info Servs., Inc. | CashEdge, Inc. |
| CBM2013-00027 | 6/18/13 | 6418419 | Chicago Merc. Exch., Inc. | 5th Market, Inc. |
| CBM2013-00026 | 5/31/13 | 7298271 | Google, Inc. | Peter Sprogis |
| CBM2013-00025 | 5/29/13 | 7856430 | LinkedIn Corp. | AvMarkets Inc. |
| CBM2013-00024 | 5/24/13 | 8095413 | salesforce.com, Inc. | VirtualAgility, Inc. |
| CBM2013-00021 | 5/6/13 | 5966440 | Apple Inc. | SightSound Tech., LLC |
| CBM2013-00019 | 5/6/13 | 5191573 | Apple Inc. | SightSound Tech., LLC |
| CBM2013-00018 | 4/23/13 | 7426481 | Volusion, Inc. | Versata Dev. Grp., Inc. |
| CBM2013-00017 | 4/23/13 | 6834282 | Volusion, Inc. | Versata Dev. Grp., Inc. |
| CBM2013-00016 | 4/23/13 | 8346637 | Harland Clarke Holdings Corp. | EZShield, Inc. |
| CBM2013-00015 | 4/2/13 | 5862223 | Oracle Corp. | Community United IP, LLC |
| CBM2013-00014 | 3/29/13 | 6625582 | US Bancorp | Retirement Capital Access Management, LLC |
| CBM2013-00013 | 3/22/13 | 8037158 | SAP America, Inc. | Pi-Net Int'l Inc. |
| CBM2013-00009 | 11/20/12 | 8140358 | Liberty Mut. Ins. Co. | Progressive Cas. Ins. |
| CBM2013-00008 | 11/14/12 | 6438526 | MeridianLink, Inc. | DH Holdings LLC |
| CBM2013-00005 | 10/15/12 | 7941357 | Bloomberg Inc. | Markets Alert Pty Ltd. |

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|---------------|----------|---------|--------------------------|---------------------------|
| CBM2013-00003 | 10/15/12 | 8090598 | Liberty Mut. Ins. Co. | Progressive Cas. Ins. Co. |
| CBM2013-00001 | 10/3/12 | 7877269 | Liberty Mut. Ins. Co. | Progressive Cas. Ins. Co. |
| CBM2012-00010 | 9/29/12 | 7124088 | Liberty Mut. Ins. Co. | Progressive Cas. Ins. Co. |
| CBM2012-00007 | 9/19/12 | 5361201 | Interthinx, Inc. | CoreLogic Solutions, LLC |
| CBM2012-00005 | 9/21/12 | 6675151 | CRS Advanced Tech., Inc. | Frontlines Techs., Inc. |
| CBM2012-00003 | 9/16/12 | 8140358 | Liberty Mut. Ins. Co. | Progressive Cas. Ins. Co. |
| CBM2012-00002 | 9/16/12 | 6064970 | Liberty Mut. Ins. Co. | Progressive Cas. Ins. Co. |
| CBM2012-00001 | 9/16/12 | 6553350 | SAP America, Inc. | Versata Software, Inc. |