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### Business Method Patents and Patent Floods

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## **BUSINESS METHOD PATENTS AND PATENT FLOODS**

MICHAEL J. MEURER

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## **Business Method Patents and Patent Floods**

Michael J. Meurer

**forthcoming Washington University Journal of Law and Policy**

Technological breakthroughs occasionally set off floods of inventions and associated patents. The decline of the business method exception to patentability is likely to increase the frequency of patent floods. Future technological breakthroughs might now cause two different patent floods: a flood of patents covering the relevant technology, and a flood of patents covering business methods in the new market opened by the breakthrough. Furthermore, a technological breakthrough is no longer a precondition for a patent flood. Any factor that opens a new market might cause a future flood of business method patents.

A flood of related patents in a new market creates special problems for competition in addition to the usual problems that arise from market power associated with individual patents. Patent floods strain the resources of the Patent Office and adversely affect the quality of issued patents. Of particular concern, reduced patent quality increases uncertainty about the scope and validity of patents and increases the frequency of patent litigation. The fragility of the many start-ups in new markets makes them vulnerable to strategic patent litigation. Furthermore, a thicket of patents may stultify development of technology because of the cost of securing patent licenses from the large numbers of patent owners. Cross-license agreements and patent pools mitigate problems caused by floods, but such agreements could be difficult to reach in response to future business method patent floods. The heightened risk of patent floods is a problem unique to business method patents, and justifies exceptional treatment of business method inventions. It is probably socially desirable to use the subject matter and nonobviousness standards for patentability to restrict grants of business method patents.

Keywords: patent, business method, patent pool

JEL Classifications: K21, K39, L4, O34

## Business Method Patents and Patent Floods

Michael J. Meurer\*

forthcoming Washington University Journal of Law and Policy

[O]ne of the great inventions of our times, the diaper service [is not patentable].<sup>1</sup>

Giles S. Rich

We take this opportunity to lay this ill-conceived exception to rest.<sup>2</sup>

Giles S. Rich

Après moi, le deluge.

Louis XIV

### I. INTRODUCTION

The decline of the business method exception to patentability will increase the frequency of patent floods. By patent flood, I mean a dramatic jump in the number of patents filed covering a specific class of inventions, as we now observe in e-commerce.<sup>3</sup> Floods are likely to become more frequent as future entrepreneurs respond to the

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\* Associate Professor of Law, Boston University School of Law. Thanks for helpful comments to Wendy Gordon, Scott Kieff, Mark Lemley, Maureen O'Rourke, Arti Rai, and participants at the American Law and Economic Association (2000) meeting, the Boston University School of Law faculty workshop, and the conference on Intellectual Property, Digital Technology & Electronic Commerce at Washington University Law School. This version: March 10, 2002.

<sup>1</sup> Giles S. Rich, "Principles of Patentability," 28 Geo.Wash.L. Rev. 393, 394 (1960).

<sup>2</sup> *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368, 1375 (Fed. Cir. 1998), *cert. denied*, 119 S. Ct. 851 (1999) (extinguishing the business method exception in a decision that confirms a diaper service is now patentable).

<sup>3</sup> See *infra* text accompanying notes 19-24.

appearance of a new market with a spate of business method patent applications claiming new methods tailored to the new market.

A flood of related patents in a new market creates special problems for competition in addition to the usual problems that arise from market power associated with individual patents. Patent floods strain the resources of the United States Patent and Trademark Office (PTO) and adversely affect the quality of issued patents. Of particular concern, reduced patent quality increases uncertainty about the scope and validity of patents and increases the frequency of patent litigation. The fragility of the many start-ups in new markets makes them vulnerable to strategic patent litigation. This phenomenon may deter entry or induce exit from the market. Furthermore, a thicket of patents may stultify development of technology because of the cost of securing patent licenses from the large numbers of patent owners.

Cross-licensing agreements and patent pools can mitigate the problems caused by patent floods, but may sometimes cause problems of their own. The historical record shows some successful pooling arrangements eliminated wasteful litigation and promoted technology development. Unfortunately, other pools fostered price-fixing agreements and other anti-competitive behavior. In some industries, patent floods did not stimulate patent owners to coordinate through cross-licensing or pooling, and innovation suffered.

Besides hoping that patent pools will mitigate problems caused by floods we can take steps through patent law doctrine to reduce these problems. I argue that the PTO and the courts should use the subject matter and nonobviousness standards for patentability to limit grants of business method patents. My favored solution is reversal of *State*

*Street*<sup>4</sup> and restoration of the business method exception. Short of reversal, I argue for a narrow reading of *State Street* and rigorous application of the nonobviousness standard.

In Part II of this Article, I recount the story of the recent demise of the business method exception to patentability and I categorize different business method patents. I explain that some “method patents” as defined by patent law really protect product features. These ersatz method patents that protect product features pose the greatest risk of patent floods and threat to competition. In Part III, I predict that as markets open in the future we will often see a flood of business method patents. (Evidence for the prediction is the current flood of Internet related business method patents.) In Part IV, I describe the problems that follow from a patent flood: low quality patents, increased litigation, exclusionary conduct, and delay of cumulative innovation. In Part V, I address the history of patent pools and cross-licensing agreements that have emerged in response to previous patent floods, as well as the benefits of pools compared to the risk that they may facilitate cartelization or other antitrust problems. Finally, in Part VI, I discuss the role of the patentable subject matter requirement and the nonobviousness standard in regulating future patent floods.

## II. BUSINESS METHOD PATENTS

### *A. The Business Method Exception*

Section 101 of the Patent Act specifies that patentable subject matter includes “any new or useful process, ... or any new and useful improvement thereof...”<sup>5</sup> Despite such broad language,<sup>6</sup> some processes have never been considered patentable subject

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<sup>4</sup> 149 F.3d 1368 (Fed. Cir. 1998).

<sup>5</sup> 35 U.S.C. §101.

<sup>6</sup> Section 100(b) provides an unhelpful definition of process as a “process, art or method, and includes a new use of a known process, machine, manufacture, composition of matter, or method.” 35 U.S.C. §100(b).

matter. For example, purely mental processes are not patentable.<sup>7</sup> Additionally, the steps of a square dance or the process of calling the dance are not patentable.<sup>8</sup> Until recently, the business method exception precluded patents on most business-related processes.<sup>10</sup>

Courts have struggled to clearly state a principle for dividing patentable from unpatentable processes. One approach limits patents to industrial processes,<sup>11</sup> while another approach limits patents to processes that manipulate artifacts or cause physical effects.<sup>12</sup> A new standard announced in *State Street* and confirmed in *AT&T v. Excel*,<sup>13</sup> expands patentable subject matter to include processes that produce a “useful, concrete and tangible result.”<sup>14</sup> While I business method exception was compatible with the earlier

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<sup>7</sup> See *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972).

<sup>8</sup> The square dance and call are both copyrightable subject matter if they are original and fixed. See 17 U.S.C. § 102(a).

<sup>10</sup> See Leo J. Raskind, *The State Street Decision: The Bad Business of Unlimited Patent Protection for Methods of Doing Business*, 10 *FORDHAM INTELLECTUAL PROP., MEDIA & ENTERTAINMENT L. J.* 61 (1999) (describing the ruling as a “sweeping a departure from precedent”). Despite the business method exception, there are occasional examples of business method patents throughout the last century. USPTO, White Paper on Automated Financial or Management Data Processing Methods (Business Methods), <http://www.uspto.gov/web/menu/busmethp/index2.htm>

Automated financial/management business data processing method patents cannot trace their origins back to the founding of our nation. However, contrary to popular view, they did not suddenly spring into being in the late 1990’s. On January 8, 1889, the era of automated financial/management business data processing method patents was born. United States patents 395,781; 395,782; and 395,783 were granted to inventor-entrepreneur Herman Hollerith on that date. (Footnote 5) See Appendix B for Mr. Hollerith’s Patents. Mr. Hollerith’s method and apparatus patents automated the tabulating and compiling of statistical information for businesses and enterprises. They were acclaimed nationally and viewed as revolutionizing business data processing. The protection of his patents allowed his fledgling Tabulating Machine Company to succeed and thrive. In 1924, Thomas J. Watson, Sr. changed the company name to International Business Machine Corporation. Hollerith manual punch cards (IBM punch cards) and his methods for processing business data were still being used up until the birth of the personal computer era.

<sup>11</sup> See John R. Thomas, *The Patenting of the Liberal Professions*, 40 *B.C.L.REV.* 1139, 1143, 1178-85 (1999).

<sup>12</sup> See *id.* at 1147, 1174; *Ex parte Turner*, 1894 Dec. Comm’r Pat. 36, 38.

<sup>13</sup> *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352 (Fed. Cir. 1999).

<sup>14</sup> *State Street*, 149 F.3d at 1373; see also *AT&T*, 172 F.3d at 1361.

narrower definitions of patentable processes, the new, expansive definition vitiates the exception.

In *State Street*, State Street Bank sought a declaratory judgment of invalidity of against Signature Financial's patent relating to software used to administer a type of mutual fund.<sup>15</sup> The patent claims describe a computerized accounting system that calculates daily share values. The district court ruled in favor of State Street Bank, invalidating the patent under the business method exception,<sup>17</sup> and the mathematical algorithm exception.<sup>18</sup>

On appellate review, Judge Rich denounced the business method exception. He complained that it was unworkable in the PTO<sup>21</sup> and not firmly grounded in case law.<sup>22</sup> Judge Rich was more deferential toward the mathematical algorithm exception which originated in *Gottschalk v. Benson*.<sup>23</sup> In that case, the Supreme Court denied patent protection to computer software designed to convert one type of number into another type

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<sup>15</sup> Specifically, a mutual fund with a hub and spoke structure that is open only to other mutual funds. This fund holds tax advantages. See *State Street*, 149 F.3d at 1370.

<sup>17</sup> *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 927 F.Supp. 502, 512-16 (D. Mass. 1996).

<sup>18</sup> *Id.* at 511. (“[T]he best clue to patentability [is] the mathematical algorithm/physical transformation test... [this invention is not patentable because it is] “designed to manipulate and record numbers.”)

<sup>21</sup> Judge Rich cited Patent Office guidelines stating “Office personnel have had difficulty in properly treating claims directed to methods of doing business. Claims should not be categorized as methods of doing business. Instead such claims should be treated like any other process claim.” 61 Fed.Reg. 7478, 7479 (1996) cited in *State Street*, 149 F.3d at 1377.

<sup>22</sup> *Id.* at 1375-76.

<sup>23</sup> 409 U.S. 63 (1972). For a discussion of the mathematical algorithm exception see generally Pamela Samuelson, *Benson Revisited: The Case Against Patent Protection for Algorithms and Other Computer-Related Inventions*, 39 EMORY L. REV. 1025 (1990).



of number. The *State Street* district court believed Signature's invention was governed squarely by *Benson*.<sup>24</sup> Judge Rich disagreed; he argued that unlike the software in *Benson*, Signature's invention achieves a useful, concrete, and tangible result, so the mathematical algorithm exception does not apply.<sup>25</sup> Essentially, *Benson* is distinguishable because Signature's method manipulated numbers representing share value.

The *State Street* decision set off a flood of e-commerce patents. The typical e-commerce patent has two distinguishing attributes: "(1) it describes an essentially commercial (as opposed to technological) activity, typically some way to make or save money; and (2) the hardware and software elements are described and claimed at such a high level of generality that they are for all practical purposes nominal."<sup>26</sup> A wide variety of business methods are now protected. For example, the PTO has issued patents covering financial instruments,<sup>27</sup> on-line gambling,<sup>28</sup> electronic postage,<sup>29</sup> health care administration systems,<sup>30</sup> and a method of distributing digital music.<sup>32</sup>

### *B. Taxonomy of Business Method Patents*

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<sup>24</sup> See *State Street*, 927 F.Supp. at 513-15. The district court judge was convinced that the reasoning in *In re Schrader*, 22 F.3d 290 (Fed.Cir.1994) applied. In that case the Federal Circuit found that the a computer implemented method for bidding at an auction was unpatentable because it was a mathematical algorithm that did not give rise to any physical effect. *Id.*

<sup>25</sup> See *State Street*, 149 F.3d at 1373-74.

<sup>26</sup> Robert P. Merges, *As Many As Six Impossible Patents Before Breakfast: Property Rights For Business Concepts And Patent System Reform*, 14 BERKELEY TECH. L.J. 577 note 5 (1999).

<sup>27</sup> See U.S. Patent No. 5,193,056 (mutual fund); U.S. Patent No. 4,839,804 (patent on a certificate of deposit that is designed to appreciate to meet college expenses, litigated in *Florida Prepaid Postsecondary Ed. Expense Bd. v. College Savings Bank*, 527 U.S. 627, 119 S.Ct. 2199, 144 L.Ed.2d 575 (1999)); U.S. Patent No. 4,346,442 (patent on a system combining a charge card, a money market account, and a brokerage account, litigated in *Paine, Webber, Jackson & Curtis, Inc. v. Merrill Lynch, Pierce, Fenner & Smith, Inc.*, 564 F. Supp. 1358 (D. Del. 1983)).

<sup>28</sup> U.S. Patent No. 5,800,268 (online gambling).

<sup>29</sup> U.S. Patent No. 6,240,196 (electronic postage).

<sup>30</sup> U.S. Patent No. 4,916,611 (automated health care payment) and U.S. Patent No. 5,070,452 (COBRA compliance system).

<sup>32</sup> U.S. Patent No. 5,191,573 (online music distribution).

The following taxonomy classifies business methods in terms of their effect on market behavior. Business-related inventions can be claimed as both products and processes,<sup>33</sup> and the business method exception was applied to both. The invention in *State Street* was claimed as a business system (i.e. machine) rather than a process because the law once favored software claimed as part of a system over software claimed as part of a process.<sup>34</sup> Sensibly, the business method exception extended to such system claims to block evasion of the rule. Courts could construe *State Street* narrowly to eliminate the business method exception only for business system patents, but the language in the case indicated that Judge Rich wanted to dispose of the exception entirely. *ATT v Excel* followed soon after *State Street* and left no doubt on this matter. An AT&T invention claimed as a process involving pricing of long distance phone service was judged to be patentable subject matter.<sup>35</sup>

Instead of focusing on claim format, I will focus on whether a business method patent protects a true process innovation or a product-related innovation. To capture the distinction between process innovations and product-related innovations I will introduce the terms *administrative method* and *customer service method* to classify business methods. Administrative methods are back-office methods that increase productivity or reduce organizational or production costs in a firm.<sup>36</sup> Customer service methods yield

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<sup>33</sup> Following a common practice, I use the term product informally to mean machine, or system; and I use the term process to mean process, art or method.

<sup>34</sup> The case *In re Alappat*, 33 F.3d 1526, (Fed. Cir.,1994) led patent applicants to favor machine claim format for software inventions. The patentee in *Alappat* successfully claimed a software related process as a machine by using means-plus-function language. 35 U.S.C. 112 para 6.

<sup>35</sup> U.S. Patent No. 5,333,184 (long distance telephone billing system).

<sup>36</sup> For example *see* Louis Uchitelle, *Business To Business: It's Just the Beginning*, N. Y. Times, June 7, 2000 (“A decade ago, before the Internet, Wal-Mart connected the cash registers in its stores to its thousands of suppliers so that a shirt sold in Omaha registered with the company that made it in South Carolina. That pioneering system, however, required a huge investment in special computers and dedicated phone lines. Few other companies matched Wal-Mart's achievement, and in 1998 Wal-Mart itself switched its network entirely to the less expensive, more flexible Internet.”)

services that are consumed by customers or methods related to pricing, advertising or other marketing concerns. I base this distinction on the function of the innovation in the market. Some business methods are consumable services and others are processes that contribute to business productivity.

There are two reasons to classify some business methods as product related innovations. First, the economic definition of product encompasses goods and *services*. A service like a massage is consumed by an end-user, and a patent on a new method of massaging protects a new product variety. Second, some method patents give *de facto* protection to a product variety as well as a process. A broad patent that protects the only method (or only practical method) of implementing a financial security extends *de facto* protection to the financial security.<sup>38</sup>

Customer service method inventors may create either new product varieties or new product features.<sup>39</sup> Many business method patents could effectively provide exclusive rights to a new product variety in an established market. Examples include: the Signature Financial patent on the hub-and-spoke mutual fund,<sup>40</sup> and other securities based patents could protect new varieties of securities;<sup>41</sup> the patent covering the use of

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<sup>38</sup> Economists speak of drastic and non-drastic process innovations. A drastic process innovation reduces that marginal cost of producing a product by a magnitude so large that no firm using a pre-existing process can compete with the innovator even if the innovator charges a monopoly price. Any process innovation of a lesser magnitude is called non-drastic. A patented drastic process yields *de facto* exclusive rights to the product produced using the process. See Jean Tirole, *The Theory of Industrial Organization* 411-12 (1988).

<sup>39</sup> A customer service inventor may even create a new product. For example, someone may create an online method for consumer financial management, and gain exclusive rights to the market from a patent. I am not aware of any current business method patents that protect a new product, but I would not be surprised to see future examples.

<sup>40</sup> *See supra* note 23

<sup>41</sup> *Id.*

online experts could protect a new variety of consulting;<sup>42</sup> the patent covering online gambling could protect a new variety of gambling;<sup>43</sup> the patent on electronic postage protects a new substitute for the postage stamp and postal meters;<sup>44</sup> and the patent on a cash management account protects a new variety of financial service.<sup>45</sup> It is too early to tell whether these patents will actually give exclusive rights to a new product variety. We must wait for more information to assess the validity and breadth of these patents. If these patents are valid but have a relatively narrow scope that would leave the patent holder with an advantage in the market for the new variety but no exclusivity.

Other method patents relate to new product features instead of new product varieties. For example, many e-commerce patents protect features of Internet retailing sites. Patents have been granted on: an online auction method;<sup>46</sup> a method for real-time payments for Internet transactions;<sup>47</sup> an online method of evaluating credit risk;<sup>48</sup> a

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<sup>42</sup> U.S. Patent 5, 862,223 relates to the use of online experts. Similarly, a variety of wedding consultation might be protected by a method patent. *See* Jeffrey A. Berkowitz Patenting The Com In ".Com": Ecommerce: Strategies For Success In The Digital Economy, 570 PLI/Pat 643, 664 (Practising Law Institute, PLI Order No. G0-0090, August/September, 1999) ("The Wedding Channel has a patent for planning weddings, and the Home Gambling Network has a patent for remote, live wagering.")

<sup>43</sup> *See id.* at 670-671 ("Having just received U.S. Patent No. 5,800,268 in September 1998, for a 'Method of participating in a live casino game from a remote location,' Home Gambling Network (HGN) wasted no time in enforcing its rights. In early December 1998, the company sued Interactive Television Services for patent infringement. The company then sued several other concerns, including UUNET, and settled with them in early March of 1999. Most recently, on April 6, 1999, HGN sued Starnet Communications for patent infringement.")

<sup>44</sup> *See id.* at 668 ("Pitney Bowes, Inc., the dominant player in the postage-meter business, has several patents on computer-based postage metering. That company has been in contact with two companies involved in online postage systems, E-Stamp and Stamp Master, to discuss licensing those patents. The U.S. Postal Service has approved E-Stamp's and Stamp Master's systems for buying postage over the Internet and printing it onto envelopes. Pitney Bowes filed suit against E-Stamp, charging it with infringement of the Pitney Bowes patents.")

<sup>45</sup> *See* Paine Webber v. Merrill Lynch 564 F.Supp. 1358 (D. Del. 1983). (The patented invention combined a securities account, a money market account, and a credit card. The advantage of this combination was better cash management (less idle cash), a higher credit limit on the credit card, and integrated monthly statements.)

<sup>46</sup> U.S. Patent No. 5,794,207.

<sup>47</sup> U.S. Patent No. 5,974,146.

<sup>48</sup> *See* Berkowitz *supra* note 35 at 666.

method for paying web users who view web advertising;<sup>49</sup> credit card security methods;<sup>50</sup> methods of protecting consumer privacy;<sup>51</sup> and a method of purchasing using one mouse click.<sup>52</sup> Broad and valid patents of this sort allow a patent owner to differentiate its retail site by offering attractive and unique features. Customer service methods also include contract terms and other marketing strategies that economists treat like product features. Recent patents cover: airline ticket options;<sup>53</sup> a method related to long-distance telephone pricing;<sup>54</sup> a method that gives buyers price discounts based on the volume of orders;<sup>55</sup> electronic distribution of coupons;<sup>56</sup> and customized Internet promotions.<sup>57</sup>

Administrative method patents reach all sorts of management techniques. There are financial method patents relating to the analysis and presentation of financial data.<sup>58</sup> There are patents on inventory and distribution management methods.<sup>59</sup> There is a patent on a payment system.<sup>60</sup> Various Internet-based manufacturing consulting inventions are probably patentable.<sup>61</sup> There are even patented law-related administrative methods.<sup>62</sup>

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<sup>49</sup> See *id.* at 661.

<sup>50</sup> See U.S. Patent No. 5,724,424.

<sup>51</sup> See Berkowitz *supra* note 35 at 666

<sup>52</sup> The specification of U. S. Patent No. 5,960,411 states, “The present invention provides a method and system for single-action ordering of items in a client/server environment. The single-action ordering system of the present invention reduces the number of purchaser interactions needed to place an order and reduces the amount of sensitive information that is transmitted between a client system and a server system.” See Theresa Riordan, *Patents Considered Vital to Thrive on the Internet*, New York Times, Dec. 20, 1999 (Amazon.com holds a patent on a system that enables repeat online customers to avoid re-entering data when placing an order).

<sup>53</sup> See U.S. Patent No. 5,797,127; Merges, *supra* note 22 at note 5 (patent “covers ‘airline ticket options,’ i.e., the purchase and sale of the right to buy tickets at a later time for a specified price.”)

<sup>54</sup> See *supra* note 30.

<sup>55</sup> See Berkowitz *supra* note 35 at 666

<sup>56</sup> See U.S. Patent No. RE 34,915 (litigated in *Home Shopping Network, Inc. v. Coupco., Inc.*, 1998 U.S. Dist. LEXIS 2111 (S.D.N.Y. 1998)).

<sup>57</sup> See U.S. Patent No. 6,009,411 (method for distributing promotions over the Internet)

<sup>58</sup> See U.S. Patent No. 5,940,810, (method used to value securities). See also Berkowitz *supra* note 35 at y (“Block Financial Corp. received a patent for accessing recent financial information from a variety of providers using a variety of presentation tools.”)

<sup>59</sup> See U.S. Patent No. 4,528,643 (covers a method of digital music distribution).

<sup>60</sup> See *supra* note 26 (health care payment method).

<sup>61</sup> A recent article describes three innovations at General Electric that are patentable subject matter after *State Street*. See Douglas Frantz, *To Put G.E. Online Meant Putting a Dozen Industries Online, E-Commerce: A Special Section*, New York Times, March 29, 2000. First, GE developed a web site where its

Patenting customer service methods is more problematic than patenting administrative methods. Since customer service methods are closely connected to a particular market, the opening of a new market will induce a flood of customer service method inventions and patents. Administrative method inventions are less tied to a particular market and should not create the same risk of floods. Interestingly, proponents of business method patents tend to point to administrative method inventions to make their case, and opponents point to customer service methods. The recent PTO White Paper in this area emphasizes that business method inventions in Class 705, automated data processing methods, follow a long tradition of invention in the field of data processing machinery like the IBM tabulator machine.<sup>63</sup> On the other hand, opponents point to the patents on securities and ask whether there was adequate incentive for financial innovation without patents.<sup>64</sup>

### III. PATENT FLOODS

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engineers in 100 countries can share ideas and work on projects simultaneously. *Id.* Second, G.E. created “wizards” that enable customers to solve complex problems on the Web. A design engineer at a manufacturing company, for example, can log on to the G.E. plastics site and use a specialized engineering calculator to determine a polycarbonate's strength, adhesion and color.” *Id.* And third, the G.E. aircraft-engines business implemented imaging methods through a web site in a way that cuts the cost of engine repairs. In the past, a G.E. representative would visit a customer and inspect engine parts to decide whether they could be retained or rebuilt, or discarded for a new part. Now much of that work can be done cheaply and quickly over the Internet with images transmitted from the customer to G.E. *Id.*

<sup>62</sup> See *supra* note 26 (method for assuring COBRA compliance); see also Theresa Riordan, *Patents Considered Vital to Thrive on the Internet*, New York Times, Dec. 20, 1999 (describing a patent on a method of allocating assets in a divorce settlement); U.S. Patent No. 6,246,991 (patented software for implementing multimedia wills).

<sup>63</sup> See USPTO White Paper, Automated Financial or Management Data Processing Methods (Business Methods) [www.uspto.gov/web/menu/busmethp/index.html](http://www.uspto.gov/web/menu/busmethp/index.html). Business machines really play a role in a firm that is comparable to an administrative method. The photocopier is a durable business machine that provides a flow of copying service. A substantial portfolio of patents relating to xerography gave Xerox a monopoly in the market for photocopiers. See *SCM Corp. v. Xerox Corp.*, 645 F.2d 1195, 1204 (2d Cir., 1981). Buyers and lessees value this copying service the same way they value an administrative method that reduces some other administrative cost. I imagine that if Xerox had invented and patented an administrative method related to document management that drastically reduced the number of copies required by organizations the economic effect would have been quite similar to the actual case.

<sup>64</sup> See *infra* notes 123-24.

A patent flood occurs when many inventors apply for patents on similar inventions during an interval of a few years.<sup>65</sup> A recent example is the flood of gene patents.<sup>66</sup> The development of efficient gene sequencing technology and the Human Genome Project provided the impetus for a flood of gene discoveries and patents.<sup>67</sup> Earlier patent floods occurred in the motion picture, airplane, and petroleum refining industries. The motion picture and airplane patent floods followed the efforts of Edison and the Wright brothers demonstrating technical feasibility of the motion picture and the airplane. The flood of petroleum refining patents followed the discovery of the cracking process of refining. The flood of e-commerce and other business method patents<sup>68</sup> is the latest patent flood.

There has been a dramatic rise in the number of business method patents since State Street.<sup>69</sup> In particular, the number of e-commerce patents has jumped,<sup>70</sup> as have the number of financial patents.<sup>71</sup> Two factors jointly caused the flood of e-commerce patents: (1) the introduction of the Internet; and (2) the demise of the business method

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<sup>65</sup> See Carl Shapiro, *Navigating the Patent Thicket: Cross Licenses, Patent Pools, and Standard-Setting*, University of California at Berkeley, March 2001 <http://www.haas.berkeley.edu/~shapiro/thicket.pdf> page 5 (noting the recent patent floods in various industries)

<sup>66</sup> See Michael A. Heller & Rebecca S. Eisenberg, *Can Patents Deter Innovation? The Anticommons in Biomedical Research*, 280 *SCIENCE* 698, May 1, 1998.

<sup>67</sup> See Andrew Pollack, *Approaching Biology from a Different Angle: Scientist at Work: Leroy Hood*, N. Y. Times, April 17, 2001, available at [www.nytimes.com/2001/04/17/health/17HOOD.html](http://www.nytimes.com/2001/04/17/health/17HOOD.html).

<sup>68</sup> See Richard H. Stern, *Scope-of-Protection Problems with Patents and Copyrights on Methods of Doing Business*, 10 *FORDHAM INTELLECTUAL PROP., MEDIA & ENTERTAINMENT L. J.* 105, 154 (1999). (“Given the boom or land rush in applications for patents on methods of doing business, particularly in regard to electronic commerce, the matter is urgent.”)

<sup>69</sup> See Sabra Chartrand, *Patents: E-Commerce Spurs Changes at Patent Office*, N.Y. TIMES, April 3, 2000. In 1997 the PTO established department 570 for business method patents. Applications rose from 920 in 1997, to 1,300 in 1998, and to 2,600 in 1999. In 1999, The PTO issued 583 business method software patents. *Id.*

<sup>70</sup> See *supra* Stern note 61, at 154; Riordan, *supra* note 45. There are about half a dozen firms modeled after Walker Digital; they hope to be patent factories. Walker Digital has received 30 patents including the key Priceline.com patent covering online auctions. Walker Digital also has 300 patent applications pending.

<sup>71</sup> Josh Lerner, *Where Does State Street Lead? A First Look at Finance Patents, 1971-2000*, 7-8 available at <http://www.people.hbs.edu/jlerner/StateStreet.pdf>. There was a dramatic increase in the number of financial patents starting in 1997.

exception. The introduction of the Internet is a technical breakthrough equivalent to the Wright brothers' flight at Kitty Hawk. The Internet makes e-commerce possible and e-commerce creates new opportunities for invention.

Equally, the expansion of patentable subject matter sanctioned by *State Street* caused the flood of e-commerce patents since most of the e-commerce inventions would not be patentable subject matter under pre-*State Street* standards. In contrast, the flood of financial patents is caused strictly by the demise of the business method exception because there has not been a technical breakthrough in the financial services industry.<sup>72</sup>

Eliminating the business method exception will increase the frequency of future patent floods. Past patent floods were set off by a technical breakthrough. Such technical breakthroughs will continue to occur and set off patent floods. Any change in patent law that increases the range of patentable subject matter will naturally increase the frequency of patent floods by bringing a wider range of technology within the ambit of patent protection. Thus, the *Chakrabarty* decision, which confirmed that living organisms are patentable subject matter, increased the likelihood of biotechnology patent floods by broadening the range of biotechnology that is patentable. *State Street* had the same effect in the field of business methods.

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<sup>72</sup> Defenders of *State Street* disagree with my view that the case eliminated the business method exception. Both Judge Rich and Judge Newman in her dissent in *In re Schrader*, 22 F.3d 290, 297-98 (Fed. Cir., 1994) searched the case law and found only weak support in dicta from a few cases establishing a business method exception. Judge Rich intended to dispel the misperception that a business method exception existed. He argued that cases supposedly standing for the business method exception could be better explained through application of the rule that abstract principles are unpatentable. Although I think his treatment of the cases is reasonable, Judge Rich evades the longstanding Patent Office rule against patents on business methods and the consensus among commentators (including himself at an earlier date) that there was a business method exception. For further critical commentary see the excellent analysis in Thomas, *supra* note 10 at x.

Regardless, whether *State Street* eliminated the business method exception or simply clarified established law, it set off a flood of business method patents. Defenders of *State Street* admit this. They blandly assert that *State Street* made practitioners aware of a class of inventions they had previously overlooked. See PTO, *supra* note 56, at x.



But *State Street* has two other effects that create special concern. First, a technological breakthrough is no longer a precondition for a patent flood. Any factor that opens a new market might set off a future flood of business method patents. New markets might often yield various new methods of doing business – all of which can now be patented. Second, future technological breakthroughs might now set off two different patent floods: a flood of patents covering the relevant technology, and a flood of patents covering business methods in the new market opened by the breakthrough.<sup>73</sup>

Fears about future business method patent floods could be allayed by a narrow interpretation of *State Street* and a rigorous application of the nonobviousness standard. The courts, though, may allow a broad reach of patent law to all sorts of business methods<sup>74</sup> with a modest role for the nonobviousness requirement. A broad reading of *State Street* allows business method claims that do not mention software.<sup>75</sup> Judge Rich apparently acknowledged the pre-computer method, in *Hotel Security Checking Co. v. Lorraine Co.*,<sup>76</sup> is patentable subject matter. The patent covered a manufacture and a process designed to prevent waiters and other restaurant employees from falsifying sales and receipts. Judge Rich explained that the patent was invalidated on obviousness

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<sup>73</sup> Note that even if the technical breakthrough does not set off a flood of technology-based patents, for example because a pioneer inventor secures broad patent rights, it is still possible that there will be a flood of business method-based patents.

<sup>74</sup> Several scholars have expressed concern about the broad reach of *State Street*. See Stern, *supra* note 61, at 154 (“Accordingly, a line of subsequent poor decisions based on *State Street* should be anticipated.”) See Raskind, *supra* note 9, at 91 “A further source of unease over this opinion is its potential for generating a boom in business method patents. This protection extends to fields other than financial services.”

“Banking, insurance, and accounting are most likely to be immediately involved in seeking such patent protection. However, protection is unlikely to be limited to these sectors...” John R. Thomas, *The Post-Industrial Patent System*, 10 FORDHAM INTELLECTUAL PROP., MEDIA & ENTERTAINMENT L. J. 3, 4 (1999). “In its place the Federal Circuit required only that a claimed process achieve a useful result, an exceptionally lenient standard that appears to place few limitations on the possibilities for private appropriation. Keenly aware of these holdings, applicants have besieged the Patent Office with applications ranging from financial software to Internet-based business models.”

<sup>75</sup> See *Merges supra* note 22 at note 24. Cf. *Amazon.com, Inc., v. Barnesandnoble.com, Inc.*, 2001 U.S. App. Lexis 2163 (Fed. Cir. 2001). p.44 The '411 patent specification states that "one skilled in the art

grounds and not because it claimed a business method. After *State Street* he would also judge a diaper service to be patentable subject matter. More significantly, basic business method innovations like the distribution system at Sear's,<sup>77</sup> the multi-divisional structure of the firm, and the Fed-Ex hub and spoke air delivery system are now likely to be patentable subject matter.

#### IV. PROBLEMS CAUSED BY PATENT FLOODS

Patent floods can exacerbate three social costs attributable to patents: (1) high licensing and litigation costs; (2) exclusionary misuse of patents; and (3) a retarding effect on diffusion and cumulative innovation.<sup>78</sup> Patents deter entry or induce exit of firms competing with a patent owner. Exclusion of competitors is justified when a firm owns a strong and valid patent. But exclusion can also be achieved with the aid of weak or invalid patents. A large firm can use the threat of patent litigation to drive smaller firms out of a market. The threat may succeed even if the patent is likely invalid or the defendant is unlikely to be an infringer. The high cost of defending a patent suit can strain the financial resources of a small start-up. Potential entrants will survey market

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would appreciate that the single-action ordering techniques can be used in various environments other than the Internet."

<sup>76</sup> 160 F. 467 (2d Cir. 1908).

<sup>77</sup> Sear's devised a distribution method that gave it a great cost advantage in retailing in the early 1900s. See ALFRED D. CHANDLER, JR., *SCALE AND SCOPE: THE DYNAMICS OF INDUSTRIAL CAPITALISM* 59-62 (1990).

The heart of the operation... was the scheduling system, which helped assure consistently high stock-turn. A complex, rigidly enforced timetable made it possible to fill a steady stream of orders from a large number of different departments. Each department was given fifteen minutes to send the assembling rooms the items listed on a specific order. If any items failed to appear within that time period, the order was shipped without them. The delayed part of the order was sent by prepaid express as soon as it was ready, and the negligent department was charged both for the extra express cost and for a fine of fifty cents per item.

*Id.* at 61.

<sup>78</sup> Kenneth Dam presents a similar list of social costs associated with patents. See Kenneth Dam, *The Economic Underpinnings of Patent Law*, 23 J. LEGAL STUD. 247 (1994).

niches and try to steer clear of niches with lots of patents, so they can reduce the risk of patent litigation.

Although patents certainly promote innovation they also retard diffusion of technology and cumulative innovation. Patent owners slow diffusion by sometimes refusing to license their patents, or more commonly, by charging royalties that discourage efficient use of patented inventions. Patent owners slow cumulative innovation by bargaining for a share of the surplus created by inventors who improve the patented invention or use it in their research.<sup>79</sup> Naturally, the incentive to improve patented inventions is diminished compared to the case in which the improver keeps the entire surplus from the improvement.

Patent floods lead to lower quality patents exacerbating the first two social costs. “Low patent quality” is shorthand for such problems as overlapping claims, inappropriately broad claims, slow patent prosecution, and patents on obvious inventions.<sup>80</sup> The problem of overlapping claims is inherent to patent floods because of the likelihood of near simultaneous invention and multiple patent applications covering the same invention. The other problems arise because of the difficulty the Patent Office has dealing with patent floods.<sup>81</sup> Time pressure, lack of expertise, and lack of available prior art yield low patent quality during floods.<sup>82</sup> The Patent Office directs patent

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<sup>79</sup> Improvers are usually infringers and need a license from the owner of the patent on the basic invention.

<sup>80</sup> See *Merges supra* note 22 at 590 for a discussion of the low quality of software and business method patents. See also *Lerner supra* note 64, at 24 U.S. Patent No. 5,884,286 entitled “Apparatus and process for executing an expiration less option transaction.” Patent does not cite a wealth of academic prior art that quite possibly makes the invention unpatentable. *Amazon.com, Inc., v. Barnesandnoble.com, Inc.*, 2001 U.S. App. Lexis 2163 (Fed. Cir. 2001). The Federal Circuit reversed a preliminary injunction against Barnes and Noble because of substantial questions about patent validity.

<sup>81</sup> Even a well-run Patent Office will suffer from these problems. For an explanation that good patent policy calls for limited resources and a limited examination process see Mark Lemley, *Rational Ignorance at the Patent Office*, forthcoming 95 NW. L. REV. (2001).

<sup>82</sup> The PTO has instituted a mandatory second review of business method patents to increase the quality of the examination process. See William M. Bulkeley, Fewer Patents on Methods Get Clearance, WALL ST. J., A3, March 21, 2001.

applications to examiners in the field of technology appropriate for the claimed invention. A flood in a particular field means that the average time to complete prosecution rises as resources are stretched.<sup>83</sup> The demand for skilled people in the emerging area of technology makes it difficult to attract and retain examiners in the field.<sup>84</sup> And the technical breakthrough precipitating a flood might not be described in a source easily available to patent examiners.<sup>85</sup>

Low patent quality increases patent licensing and litigation cost. These costs increase because bargaining becomes more difficult and the probability of patent disputes grows as quality deteriorates. Delayed patent prosecution, and numerous and overlapping patents make it costly for a possible infringer to negotiate a license or even determine who to bargain with. Overly broad claims inappropriately expand the number of potential infringers and the probability of litigation. And when numerous inventors<sup>86</sup> own related patents and patent applications there are apt to be disputes about priority or the scope of similar claims.<sup>87</sup>

Periods of patent flood magnify the problem of exclusionary conduct. Patent floods often coincide with the birth of a new industry. The normal life-cycle of an

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<sup>83</sup> See Chartrand, *supra* note 62 (The PTO recently increased training, supervision, and staff in response to complaints about examination of business method patents.)

<sup>84</sup> See *id.* (The PTO recently increased training, supervision, and staff in response to complaints about examination of business method patents.); Patenting Business Methods, A White Paper of the AIPLA, November 27, 2000 [www.aipla.org/html/whitepaper2.html](http://www.aipla.org/html/whitepaper2.html) (calling for better training of examiners and better collection of prior art by the PTO).

<sup>85</sup> See Lerner *supra* note 64, at 26-27; see also Sabra Chartrand, Federal Agency Rethinks Internet Patents: Government Changing Its Evaluations of Business-Method Filings, N. Y. Times, March 30, 2000. Critics claim the PTO does not understand what business methods are widely used or already in the public domain.

<sup>86</sup> The flood of finance patents is distributed to a large and diverse collection of patent owners. See Lerner *supra* note 64, at 9.

<sup>87</sup> See Teresa Riordan, Patents: Historians Take a Longer View of Net Battles, N.Y. Times, April 10, 2000. "The most extreme example of simultaneous development is when you have Alexander Graham Bell and Elisha Gray arriving at the patent office on the same day with the idea of the telephone," said Winston, who is the author of "Media Technology and Society: A History From the Telegraph to the Internet."

industry begins with a large number of small firms, followed by a period of shake-out when many firms fail.<sup>88</sup> Thus, there is a large population of start-ups that are vulnerable to exclusionary tactics, and low quality patent examination makes it easy for a dominant firm intent on exclusion to collect a portfolio of patents.<sup>89</sup> Even if the patent flood does not promote socially unwarranted exclusionary tactics, it may have a negative impact on industry evolution. The patent flood raises the cost of entry to the new market and overly broad or invalid patents may favor inefficient producers who survive the shake-out at the expense of more efficient but patent-poor firms.<sup>90</sup>

These problems are becoming apparent in e-commerce markets that have entered the shake-out phase.<sup>91</sup> Commentators predict huge amounts of patent litigation.<sup>92</sup> Weak

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Gray and Bell settled their differences, with Gray getting a \$100,000 settlement and lucrative contract work. But the early days of the telephone were marked by many other patent disputes. At one point the Bell System had 600 pending patent infringement cases.

<sup>88</sup> See Steven Klepper and Elizabeth Graddy, *The Evolution of New Industries and the Determinants of Market Structure*, 21 RAND J. ECON. 27, 28-35 (1990) (gathering evidence that shows that new industries first experience rapid entry, followed by a shake-out phase when many more firms exit than enter, and finally a mature phase with a steady number of firms).

<sup>89</sup> Dominant firms can patent their own inventions and purchase patent rights from other firms, especially those exiting the market during a shake-out. See e.g., Kevin G. Rivette and David Kline, *Discovering New Value in Intellectual Property*, HARV. BUS. REV. 54, 64 (Jan.-Feb. 2000) (stent manufacturer bought out a company to gain access to its patent portfolio to bolster its position in a patent infringement suit); Gwendolyn Mariano, *Net Shakeout More Sweeping Than Expected*, CNET NEWS.COM, N. Y. Times, June 4, 2001 (“incredible” rate of acquisition of failed Internet firms).

<sup>90</sup> See Klepper & Graddy, *supra* note 81 at 28. In their model “factors governing the early evolution of industries will shape their market structure at maturity.” Specifically, the model shows that increasing the cost of imitation in a new industry tends to raise the level of concentration as the industry matures. Rivette & Kline, *supra* note 82, at 66. Patents are often decisive in determining which firms survive the shakeout phase of the industrial life cycle.

<sup>91</sup> See Bob Tedeschi, *When Digital Darwinists Seek Their Predators* June 25, 2000 N. Y. Times (shake-out of Internet retailers causing a wave of consolidation); Mariano, *supra* note 82; Rochelle Cooper Dreyfuss, *Are Business Method Patents Bad for Business?* 16 SANTA CLARA COMPUTER AND HIGH TECHNOLOGY LAW JOURNAL 263, x (2000).

<sup>92</sup> For example, the two major remaining providers of free Internet access are suing each other over infringement of patents that cover aspects of Internet advertising critical to their business model. See Matt Richtel, *NetZero Sues Juno Online in a Patent Dispute*, N. Y. Times, Dec. 28, 2000. Stern *supra* note 61, at 105 collects the following references in note 98: “See ‘Boom’ in Business Method Patent Filings Has Followed State Street Ruling, PTO Says, Pat. Trademark & Copr. J. (BNA) 115 (Dec. 10, 1998). Forbes Magazine suggests that e-commerce magnates may ‘try to turn patents into the barbed wire of the Internet.’ Josh McHugh, *Barbed Wire on the Internet*, Forbes, May 17, 1999, at 183. The American Banker asserts that the State Street decision ‘threatens to embroil the financial services industry in hundreds of patent infringement lawsuits,’ creating possible liability exceeding \$2 billion. Jaret Seidberg, *Ruling Threatens Banks With Patent Lawsuits*, Am. Banker, Sept. 2, 1998, at 3. A story in IP Magazine warns that ‘a

or invalid business method patents might be used to deter entry,<sup>93</sup> or induce firms to accept licenses.<sup>94</sup> Moreover, patent suits instead of efficiency will shape the structure of the industry by encouraging mergers.<sup>95</sup>

Patent floods also exacerbate the costs from slowed diffusion and cumulative innovation.<sup>96</sup> The transaction costs associated with obtaining numerous licenses may retard technical progress.<sup>97</sup> These transaction costs probably rise faster than the number of patents because multilateral bargaining is more difficult than bilateral bargaining. Furthermore, the flood of patents increases the likelihood that different parties will own patents on complementary inventions – i.e., inventions that efficiency dictates should be used together. The owners of complementary patents have an incentive to charge combined license fees even higher than the monopoly license fee.<sup>98</sup> Finally, when a technical breakthrough opens a new market, a flood of business method patents could

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firestorm of litigation threatens to engulf corporate America' and predicts 'large-scale disruption of U.S. commerce, as sharp operators move to patent business methods and assert patents against the unsuspecting.' Robert M. Kunststadt, *Opening Pandora's Box*, IP Mag., Jan. 1999 (visited May 12, 1999) <<http://www.ipmag.com/monthly/99-jan/kunststadt.html>>.”

<sup>93</sup> See Shapiro *supra* note 58, at 34 “Our current patent system is causing a potentially dangerous situation in several fields, including biotechnology, semiconductors, computer software, and e-commerce in which a would-be entrepreneur or innovator may face a barrage of infringement actions that it must overcome to bring its product or service to market. In other words, we are in danger of creating significant transactions costs for those seeking to commercialize new technology based on multiple patents, overlapping rights, and hold-up problems.” Dreyfuss, *supra* note 84 at 270 (entry deterrent effect created by business method patents that are likely to be invalid).

<sup>94</sup> See Seth Shulman, *Software Patents Tangle the Web*, 103 TECHNOLOGY REV. 68, 71-72 (March/April 2000). There will be a lot of cross-licensing of e-commerce patents because a lot of the patents are invalid. Even though the odds of invalidity are high the patents are powerful weapons.

<sup>95</sup> See James Gleick, *Patently Absurd*, New York Times Magazine, March 12, 2000. (New e-commerce patents will continue to flood the PTO and surprise entrepreneurs. Patent suits are a catalyst for mergers.)

<sup>96</sup> See Matt Richtel, *Chairman of Amazon Urges Reduction of Patent Terms: Bezos Suggests 3 to 5 Years, Instead of 20*, N. Y. Times, March 12, 2000. The chairman of Amazon.com has acknowledged that business method patents may stifle others from building upon the patented innovations. “He is calling for the government to limit patents for software and Internet business models to three to five years and to require a period for public comment on patent applications in those areas before they are granted.”

<sup>97</sup> See Heller & Eisenberg, *supra* note 59; Riordan, *supra* note 80. “A radio patent pool was finally formed in 1919,” said historian Amy Friedlander. “One of the reasons it was formed was there were so many patents and so much cross-licensing that development of radio had become almost sclerotic.” Shulman, *supra* note 87, at 76 (describing a thicket of patents that created problems for development of automobiles and airplanes in the U.S).

block commercial exploitation of the underlying technology. The cost of negotiating appropriate business method patent licenses reduces the incentive effect of broad patent protection for a technical pioneer.<sup>99</sup>

## V. CAN POOLING AND CROSS-LICENSING SOLVE THE PROBLEMS CREATED BY PATENT FLOODS?

Patent floods usually induce extensive patent licensing managed through patent pools or cross-licensing agreements.<sup>100</sup> A patent license is a contract in which a patent owner grants the licensee permission to practice the patented invention.<sup>101</sup> Cross-licensing describes reciprocal patent licenses that two or more patent owners grant to each other. Pooling is more comprehensive than cross-licensing. Patent pools include many members and gather most or all of the patents in an industry.<sup>102</sup> Typically, a pool issues a blanket license authorizing use of all the patents in the pool.<sup>103</sup> The license revenue is distributed to members in proportion to the value of the patents they have contributed to the pool.<sup>104</sup>

Pools and cross-licensing mitigate two of the negative effects of patent floods. They reduce transaction costs and avoid the uncertainty and litigation cost created by a flood of patents.<sup>105</sup> The blanket license eliminates worries about patent litigation based

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<sup>98</sup> See Shapiro *supra* note 58, at 6-10 (complementary patents are priced too high and hidden patents create a danger of hold-up)

<sup>99</sup> Thanks to Pam Samuelson for suggesting this point.

<sup>100</sup> Robert P. Merges, *Contracting into Liability Rules: Intellectual Property Rights and Collective Rights Organizations* 84 CALIF. L. REV. 1293 note 162 (1996) (citing patent consolidation in over 20 industries in the early part of the twentieth century).

<sup>101</sup> A patent owner may refuse to license without violating antitrust law. See *SCM Corp. v. Xerox Corp.*, 645 F.2d 1195, 1204 (2nd Cir., 1981). But patent owners have many reasons to license. Jean Tirole, *The Theory of Industrial Organization* 410-13 1988

<sup>102</sup> Members of the pool assign their patents to a holding company or trade association. See Merges *supra* note 93, at 1341-42.

<sup>103</sup> See *id.* at 1341-42.

<sup>104</sup> See *id.* at 1341-42.

<sup>105</sup> George L. Priest, *Cartels and Patent License Arrangements*, 20 J.L. & ECON. 309 (1977). pp. 358-59 (noting that pools reduce litigation and uncertainty). Robert P. Merges, *Symposium: Toward A Third*

on any of the patents in the pool. Transaction costs are low because monitoring costs are reduced for patent owners and licensees only need to negotiate a single blanket license. For the same reasons, they also cut through a thicket of patents that otherwise could stall production and development in an industry facing a patent flood.<sup>106</sup> On the other hand, pooling and cross-licensing may cause a variety of anticompetitive harms.

Antitrust law shows considerable deference to patent licenses.<sup>107</sup> The owner of a broad patent on an important invention is supposed to enjoy significant exclusionary power and monopoly profit regardless of whether the patent is licensed. High profit is supposed to provide the incentive to seek important inventions. Thus, a cross-license agreement should be able to secure monopoly profits for the owners of a pair of essential, complementary inventions.<sup>108</sup> A similar statement holds for licenses settling priority disputes. A license that allows two inventors to split the monopoly profit from an invention serves social welfare if one of them is surely entitled to the patent.<sup>109</sup> Despite these benefits anticompetitive harms do exist. Pools and cross-licensing can insulate invalid patents from challenge, expand the scope of minor patents, and facilitate collusive pricing.

Pools and cross-licensing pose anticompetitive threats because: it is hard to distinguish settlement of a legitimate priority dispute from a cross-license between the

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*Intellectual Property Paradigm: Comments: Of Property Rules, Coase, And Intellectual Property* 94 COLUM. L. REV. 2655 (1994) (noting that patent pooling in the radio industry reduced transaction costs).

<sup>106</sup> The Patent Office has touted patent pools as the solution to the problem created by the thicket of gene patents. See USPTO, Patent Pools: A Solution to the Problem of Access in Biotechnology Patents? [www.uspto.gov/web/offices/pac/dapp/opla/patpoolcover.html](http://www.uspto.gov/web/offices/pac/dapp/opla/patpoolcover.html), December 5, 2000. See also Shapiro *supra* note 58, at x (approving pooling of complementary patents to fight through patent thicket).

<sup>107</sup> Joint price and output choice is not per se illegal when practiced by a pool. *Cf. Broadcast Music, Inc. v. CBS*, 441 U.S. 1, 23 (1979) (price fixing by a copyright pool).

<sup>108</sup> More precisely, if the a single owner of the pair of complementary patents can command a monopoly profit, then two owners should be allowed to get the same profit through cross-licensing.

<sup>109</sup> Again, if the patent securely in the hands of one of the inventors generates monopoly profit, then there is no problem with a license that allows two inventors to split the monopoly profit.



owners of two sham patents; and it is hard to distinguish settlement of a legitimate dispute about scope of claims and infringement from a cross-license between the owners of two minor patents.<sup>110</sup> Many patents issued during a flood cover insignificant inventions and many patents are invalid. Licensing to settle patent litigation might be a socially desirable way to avoid litigation cost, but it also might be part of a collusive strategy.<sup>111</sup>

The other anticompetitive threat is a pool or cross-licensing agreement justified as a way to cut through a patent thicket and economize on transaction costs might actually serve merely to orchestrate collusion on prices. A patent license may include terms that would normally violate the antitrust rule against price fixing. For example, a license might specify the sale price, geographic market, or output level of the end product made using a patent.<sup>112</sup> Such terms make it easier to establish and enforce a cartel.<sup>113</sup> If the patents in the pool are substitutes, the effect is similar to firms merging to monopoly.<sup>114</sup> Antitrust law gives us many likely examples of patent pools facilitating collusion.<sup>115</sup>

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<sup>110</sup> Pooling or cross-licensing patents on competing technologies may be anticompetitive if excluded firms need a license to effectively compete in the relevant market. See U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY (1995) ("IP Guidelines"), reprinted at <http://www.usdoj.gov/atr/public/guidelines/ipguide.htm>.

<sup>111</sup> See Michael J. Meurer, *The Settlement of Patent Litigation*, 20 RAND J. ECON 77 (1989). Cf. Priest, *supra* note 98, at 309-310 (describing the difficulty in distinguishing legitimate patent exploitation from patent licenses used to orchestrate a cartel).

<sup>112</sup> See LAWRENCE A. SULLIVAN & WARREN S. GRIMES, *THE LAW OF ANTITRUST: AN INTEGRATED HANDBOOK* 830-31 (2000).

<sup>113</sup> George Priest has suggested the license agreement between G.E. and Westinghouse might have been used to fix price. See Priest, *supra* note 98, at x; but see *United States v. General Elec. Co.*, 272 U.S. 476 (1926) (sustaining validity of patent license. See also Ian Ayres, *How Cartels Punish: A Structural Theory of Self-Enforcing Collusion* 87 COLUM. L. REV. 295 (1987); Summit Technology, Inc., Dkt. No. 9286 (August 21, 1998) available at <http://www.ftc.gov/os/1998/9808/d0928viagr.htm> (FTC claimed a patent pool was protecting an invalid patent).

<sup>114</sup> See Louis Kaplow, *The Patent-Antitrust Intersection: A Reappraisal* 97 HARV. L. REV. 1813, 1867-68 (1984).

The problem of patent accumulation, the aggregation of several or numerous patents under single ownership or control, is conceptually indistinguishable from the merger problem under antitrust law. . . . A pool of competing patents can be more readily analogized to a loose association than to a horizontal merger. This, of course, depends upon one's evaluation of the pool's efficiency-

The risk of price-fixing disguised as a patent pool is surely deterred by the threat of antitrust enforcement — likewise agreements that expand patent scope or protect invalid patents. Yet, deterrence alone is probably inadequate because of a substantial danger of undetected collusion.<sup>116</sup> Deterrence is also limited because enforcement agencies fear that overzealous antitrust enforcement will discourage socially desirable pools and cross-licenses. The Department of Justice (DOJ) announced guidelines that help fine tune public antitrust enforcement.<sup>117</sup> But, we should not be too optimistic that antitrust law can finely distinguish pro-competitive from anti-competitive pooling and cross-licensing.<sup>118</sup>

The previous discussion might suggest to some readers that pooling or cross-licensing inevitably follows a patent flood — but that is not true. The multi-party

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creating potential. A pool of competing patents is difficult to distinguish from the cartel in this respect.

*Id.*

<sup>115</sup> See e.g., *Standard Sanitary Mfg. Co. v. United States*, 226 U.S. 20, 38 S. Ct. 9 (1912); *Hartford-Empire Co. v. United States*, 323 U.S. 386, 65 S. Ct. 373, 89 L. Ed. 322 (1945); Robert P. Merges & Richard R. Nelson, *On The Complex Economics Of Patent Scope* 90 COLUM. L. REV. 839, 896 (1990) (cartelization by the light bulb patent pool); Merges, *supra* note 93, at n224, (cartelization by pool in *United States v. National Lead Co.*, 63 F. Supp. 513, 523 (S.D.N.Y. 1945), *aff'd*, 323 U.S. 319 (1947)); Priest, *supra* note 98, at 330-32 (pooling of harrow patents used to cartelize the harrow market); *id.* at 366-370 (weighing strong evidence of both efficiency and collusion in relation to a pool of patents relating to methods of refining petroleum). See generally *id.*

<sup>116</sup> See, *id.* at 329 (noting that with cross-licensing it is more difficult to distinguish cartelization from legitimate exploitation); Kaplow *supra* note 107, at 1865-67. Antitrust scrutiny failed to detect collusion in *Standard Oil Co.*, 283 U.S. 163 (upholding a pool made up of competing patents when its examination failed to uncover any restraint of trade or monopolization).

<sup>117</sup> Two important rules of thumb are that pooled patents should be complements not substitutes. See Priest, *supra* note 98, at 357-58 (distinguishing cross-licensing of substitute and complementary patents), and pool members must reasonably fear infringing each others' patents Merges, *supra* note 93, at note 225 ("Where industry members are seen to pervasively infringe each other's patents, and where valuation and exchange mechanisms appear to serve no ulterior purpose beyond setting compensation for these infringements, a real working pool is in effect.") The DOJ view pooling as procompetitive when it integrates complementary inventions, and reduces transaction and litigation costs. See U.S. DEP'T OF JUSTICE & FED. TRADE COMM'N, ANTITRUST GUIDELINES FOR THE LICENSING OF INTELLECTUAL PROPERTY (1995) ("IP Guidelines"), *reprinted at* <http://www.usdoj.gov/atr/public/guidelines/ipguide.htm>. Open licensing of non-members helps protect a pool from antitrust violation. See also Mark A. Lemley & David McGowan *Legal Implications of Network Economic Effects* 86 CALIF. L. REV. 479, 538 (1998). Cf. USPTO *supra* note 99 (encouraging patent pooling as a solution to the problems caused by the flood of gene patents).

<sup>118</sup> See Priest *supra* note 98; Merges, *supra* note 93.

bargaining problem facing patent owners is a major impediment. History shows that agreements are easier to reach in industries with homogeneous members who deal with each other repeatedly.<sup>119</sup> History also shows longstanding bargaining impasses are possible.<sup>120</sup> In addition, the threat of antitrust litigation may deter some pools and cross-licensing agreements.<sup>121</sup>

## VI. FLOOD CONTROL: REDUCING THE FREQUENCY OF BUSINESS METHOD PATENT FLOODS

Sections 101 and 103 of the Patent Act offer opportunities to reduce the frequency of patent floods by limiting the extent to which business methods are patentable subject matter or by making it difficult to show business method inventions are nonobvious. At this early stage we cannot be sure how broadly the Federal Circuit will read *State Street*. Experience with software patentability suggests the court will read it quite broadly.<sup>122</sup> It is also too early to know how rigorously the Section 103 nonobviousness requirement will be applied to business methods. In this section I will list some possibilities, and consider the consequences for patent floods.

Two questions left open from *State Street* are critical to determining the extent of business method patentability. First, are business methods lacking a software implementation patentable? Second, what kinds of methods are useful, tangible, and

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<sup>119</sup> See *Merges supra* note 93, at 1341.

<sup>120</sup> See *Merges & Nelson, supra* note 108, at 896-897 (“There is therefore no guarantee that pooling, cross licensing, or consolidation will always emerge to break an industry impasse. And without these solutions there is nothing to mitigate the effect of broad basic patents in cumulative technology industries. Earlier we saw that theory offered a number of reasons to be concerned about these patents. The historical evidence available is consistent with this theory. In most instances this evidence can be read as supportive of our concerns about the effects of broad patents on cumulative technology industries.”)

<sup>121</sup> See *Merges supra* note 93, at 1355. But favorable business review letters from the DOJ have encouraged three recent patent pools. The DOJ issued business review letters sanctioning three recent patent pools to share royalties from patents covering the MPEG 2 compression technology standard, and patents on certain DVD-Video and DVD-ROM standard specifications and products. See USPTO *supra* note 99; Steven C. Carlson, *Note: Patent Pools and the Antitrust Dilemma*, 16 YALE J. REG. 359 (1999) (describing patent pools covering video compression and encryption technology).

concrete? *State Street* and the follow-up case *AT&T v. Excel* are surprisingly vague on these matters.<sup>123</sup> A narrow reading treats these two cases as software cases holding that there is no reason to discriminate against software merely because it has a business purpose.<sup>124</sup> Under this narrow reading business method claims lacking a software implementation could be rejected for being outside the bounds of patentable processes. Yet, even given this narrow reading, *State Street* will have a significant economic impact because software based claims will often preempt any practical use of a business method.<sup>125</sup>

A broad reading of these cases opens the door to patents on the full spectrum of management techniques. A software limitation on patentable subject matter might not be required since Judge Rich nowhere limited his ruling to software and he cited old business method cases predating computer technology.<sup>126</sup> Additionally, language in *State Street* emphasizes there is no need for a physical transformation to make a process patentable.<sup>127</sup> If patentable processes are freed from a connection with physical

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<sup>122</sup> See Raskind, *supra* note 9, at 33 (1999) (forecasting further decline of subject matter boundaries).

<sup>123</sup> See *id.*, at 62. “[T]he recent decision which announced this startling conclusion provides neither explanation, limitation, nor rationale.” See Thomas, *supra* note 67, at 25-27 (1999) (criticizing the arguments made by Judge Rich as he rejected the business method exception).

<sup>124</sup> Francisco Marius Keeley-Domokos, *Intellectual Property: State Street Bank & Trust Co. v. Signature Financial Group, Inc.* 14 BERKELEY TECH. L.J. 153 (1999) Instead, the business methods that will continue to be patented will probably involve computer software, and will also qualify as machines through proper use of means-plus- function claims.

<sup>125</sup> *State Street* at 1371 (computer essential to practice method).

<sup>126</sup> John Kasdan, *Obviousness and New Technologies*, 10 FORDHAM INTELLECTUAL PROP., MEDIA & ENTERTAINMENT L. J. 159 (1999). (“Since he referred to cases from as long ago as 1908 which far pre-date the computer, it is arguably the case that Rich was suggesting that even business methods which are implemented without the use of a computer should be eligible for patent protection (although it appears that, under current practice, the PTO would reject such applications)”

<sup>127</sup> See Merges *supra* note 22 at note 24. (“Indeed, there is a fair argument that a business concept is patentable whether or not it is implemented on a computer: [In *State Street Bank*] the Federal Circuit indicated that whether an invention is directed to patentable subject matter under § 101 does not depend on whether a “physical” transformation takes place or whether the claim is directed to a process or a machine. From this, it might then follow that a claimed process for, e.g., performing the function similar to Signature’s invention, is patentable even absent its use with a computer. As long as the variables represent some set monetary values, it arguably should not matter who or what does the “transforming.” After all,

apparatus, then the full range of business methods discussed in Part II may be patentable subject matter.<sup>128</sup> Of course, it is possible that the words “useful, tangible, and concrete” will be invoked to limit the range of business methods that are patentable.<sup>129</sup>

Policy arguments are not much of a guide in predicting how broadly the Federal Circuit will interpret *State Street*. The policy arguments for and against expanding patentable subject matter to include business methods are not well developed. Proponents favor the broadest reach of patentable subject matter consistent with the statute and the Constitution.<sup>130</sup> They believe that the incentive effect created by patent property rights is desirable in any field of innovation. Opponents claim that 200 years of experience shows that there is adequate incentive to invent new business methods even if the methods are not patentable.<sup>131</sup> They oppose patents because they could create market power and slow

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regardless of the transforming mechanism (e.g., machine or human), the invention can be said to have "practical utility," and produce a "useful, concrete and tangible result.")

<sup>128</sup> See Thomas, *supra* note 67, at 6 “Disconnected from particular physical apparatus, such patents will set forth not so much technical artifacts, but a broad category of proprietary modes of analysis, techniques and protocols from disciplines ranging from the social sciences to the law.”

<sup>129</sup> See Keeley-Domokos *supra* note 117, at x. (“The type of business methods that are likely to benefit from the State Street decision, however, are probably more material than just general functional operating schemes. The court in State Street repeatedly reiterated the utility of the invention disclosed in Signature’s patent, while concurrently emphasizing the concreteness and materiality of the result that the invention achieved. The State Street decision seems to indicate that to be patentable, business methods must achieve concrete and material results in addition to being useful. If this interpretation is correct, it would probably be difficult for a company to prove that a general operating business plan developed by that company deserves patent protection. To satisfy the requirements of concreteness and materiality, such a company would probably have to provide conclusive evidence that the new business method decreases operating costs, increases productivity, or achieves some other tangible economic benefit. Such an analysis would probably involve complex forecasting techniques and rely on economic assumptions and projections. The speculative nature of such endeavors probably reduces the likelihood that companies will attempt to patent general business operating methods.”)

<sup>130</sup> State Street at 1373 subject matter broadest possible reading because Congress did not intend any limitations. Malla Pollock argues that the business method patent in State Street violates the Intellectual Property Clause of the Constitution. See Malla Pollock, *The Possible Unconstitutionality of Business Method Patents: Common Sense and History*, forthcoming, Rutgers Computer & Tech. L. J. (2001).

<sup>131</sup> See Raskind, *supra* note 9, at 92-93 (1999) (adequate incentive for innovation in business methods without patent protection) See Thomas, *supra* note 67, at 58 (favoring a restriction of method patents to industrial applications).

diffusion of new business methods.<sup>132</sup> Regardless of the merit of this reason for opposing patents on business methods but it has not impressed the Federal Circuit so far.<sup>133</sup>

Congress or the courts should revive the business method exception, or at least adopt a narrow reading that limits business method patents to methods with a software implementation. Reviving the business method exception would return us to a world in which customer service methods get relatively little intellectual property protection.<sup>134</sup> Some administrative methods would still be eligible for patent protection and many would benefit from trade secret protection. I greatly prefer trade secret protection because most of the flood problems I described in Part IV apply to patents but not trade secrets.<sup>135</sup> A broad reading of *State Street* is most harmful because it allows full patentability of customer service methods, but even a narrow reading allows patents protecting financial securities like Signature's invention.

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<sup>132</sup> See Dreyfuss, *supra* note 84, at 275 (arguing the social cost of business method patents exceed the social benefits).

<sup>133</sup> Let me take a moment to comment a little further on policy analysis of the bounds of patentable subject matter. The core trade-off in judging the social value of a patent compares the increased incentive to invent arising from the prospect of a patent to the decreased diffusion of the invention because of the exclusionary power of a patent. Proponents argue that this trade-off should be implemented on a case-by-case basis via the nonobviousness standard of Section 103. They could argue that the subject matter boundary seems like a poor alternative policy instrument because the trade-off is made for a class of inventions rather than a specific invention. I would respond by claiming that cost savings justify exclusion of business methods through Section 101 because a *proper* nonobviousness analysis (based on the economic trade-off) would deny patents to most business method inventions.

The scope of patent rights can be analyzed from other perspectives. See e.g., F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 MINN. L. REV. 697 (2001) (arguing that patent policy should be guided by concerns about commercializing technology).

<sup>134</sup> Trade secret protection is unlikely because marketing methods, product features, and product varieties cannot be kept secret. Trademark and copyright law offer some protection to customer service methods. Recently, we have learned that trademark law can be used to protect a method of selling Mexican food. See *Two Pesos v. Taco Cabana*. And copyright offers limited protection to business methods. See Rinaldo Del Gallo, III, *Are "Methods of Doing Business" Finally Out of Business as a Statutory Rejection?*, 38 IDEA 403, 405 (1998). But see Stern, *supra* note 61, at 112-116 (1999) (stringent limits to copyright protection of business methods copyright law can be used to protect).

<sup>135</sup> Trade secrets cannot be used to exclude competitors or slow cumulative innovation or diffusion because independent invention is allowed under trade secret law. Trade secrets do generate significant litigation and they lack the disclosure feature of patent law.

Even if *State Street* is reversed there will still be some degree of patent protection available to business methods. The reason is that some methods useful in business have applications in technical fields as well. Some older business method applications that were claimed as software perished on subject matter grounds because they were viewed as too abstract; but others escaped rejection on subject matter grounds. A prominent example is the linear programming algorithm invented by Karmarkar and patented by AT&T. This sort of algorithm has engineering applications but its most profitable application for AT&T has been to management problems.<sup>136</sup> The engineering applications of the Karmarkar algorithm leave no doubt about patentability.

Expanded patent protection does not matter if firms choose trade secret protection in preference to patents.<sup>137</sup> This is most likely for administrative method inventions.<sup>138</sup> Many of these methods are easy to keep secret and have a limited number of potential customers.<sup>139</sup> Secret use by potential infringers makes patents hard to enforce.<sup>140</sup> Trade secret protection is also preferable for firms who are concerned about imitation by competitors outside of the U.S. since business methods are not patentable elsewhere.<sup>141</sup>

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<sup>136</sup> AT&T sold software containing the algorithm at about \$1 million per copy to airlines that use it for scheduling flights. U.S. Patent No. 4,744,028. *See generally* Mark Paley, *The Karmarkar Patent: Why Congress Should "Open The Door" to Algorithms as Patentable Subject Matter*, *The Computer Law Reporter* 7 (Sept. 1995).

<sup>137</sup> Jared Earl Grusd, *Internet Business Methods: What Role Does and Should Patent Law Play?* 4 VA. J.L. & TECH. 9 (1999) (discussing the importance of trade secret protection of business methods).

<sup>138</sup> Dell and Walmart both owe their success to innovative distribution and marketing. Dell relies mostly on patent protection of its business methods while Walmart relies on trade secret protection. *See* Kevin G. Rivette and David Kline, *Discovering New Value in Intellectual Property*, HARV. BUS. REV. 54, 57 (Jan.-Feb. 2000). Firms have the strongest incentive to patent administrative methods that are broadly applicable. Relevant examples include just-in-time inventory, scheduling techniques, quality circles, the M-form of corporate organization, or the hub and spoke air delivery system pioneered by Fed Ex.

<sup>139</sup> Often these methods are tailored specifically to a particular corporation; they are tailored to reflect that corporation's culture. Since the inventor is a manager in the corporation that is apt to be the only customer for the method, there is little reason to get a patent.

<sup>140</sup> Infringement is especially difficult to detect when the infringing manager practices the method in her head. In the early days of software patents commentators recognized a mental steps doctrine that would block software claims that are so abstract that they can be infringed by thought.

<sup>141</sup> *See* President of the European Patent Office Examination of "business method" applications, (Munich, 19.05.00) [www.uspto.gov/web/tws/appendix6.pdf](http://www.uspto.gov/web/tws/appendix6.pdf) ("Methods of doing business are, according to Article

The disclosure from the patent application would disseminate the invention to foreign users. Furthermore, fear of nonobviousness invalidation might encourage trade secret protection. Secret prior art and a vast body of poorly catalogued prior art might make inventors worry about validity attacks based on prior art unavailable to the examiner. One more factor favors trade secrecy. The first inventor defense reduces the risk to trade secret owners that a later inventor will sue them as infringers.<sup>142</sup> Expanding the scope of this defense to include any prior user is a desirable, if indirect, way to minimize the number of business method patents.<sup>143</sup>

It is possible but unlikely that future floods of business method patents will be avoided by rigorous screening via the nonobviousness standard.<sup>144</sup> Section 103 has not presented much of a barrier in the PTO to persistent e-commerce patent applicants. Patent examiners find it difficult to reject applications on obvious inventions because they lack access to the prior art they need to document their basis for rejection.<sup>145</sup> Weak patents

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52(2) EPC, not to be considered to be inventions. Although not explicitly stated, this exclusion is also considered to apply to a wide range of subject-matters which, while not literally methods of doing business, share the same quality of being concerned more with interpersonal, societal and financial relationships, than with the stuff of engineering - thus for example, valuation of assets, advertising, teaching, choosing among candidates for a job, etc.. The term "business methods" has become a generally used shorthand for all of these areas.")

<sup>142</sup> The "First Inventor Defense Act of 1999" Subtitle C provides a defense against charges of patent infringement for a party who had, in good faith, actually reduced the subject matter to practice at least one year before the effective filing date of the patent, and commercially used the subject matter before the effective filing date. The defense is limited to methods of "doing or conducting business." Section 273 creates a new "First Inventor Defense." The defense is available against business method claims if the defendant acted in good faith and reduced to practice the claimed invention more than one year before the effective filing date of such patent, and commercially used the invention before the filing date.

<sup>143</sup> See Dreyfuss, *supra* note 84, at 272 (noting the limited scope of first inventor defense); Patenting Business Methods, A White Paper of the AIPLA, November 27, 2000 [www.aipla.org/html/whitepaper2.html](http://www.aipla.org/html/whitepaper2.html) (opposing special treatment of business method patents)

<sup>144</sup> Jared Earl Grusd, *Internet Business Methods: What Role Does and Should Patent Law Play?* 4 VA. J.L. & TECH. 9 (1999). ("Unlike most commentators, the author will argue that the State Street holding does not necessarily lower the standard for obtaining patents on business methods. The State Street holding merely shifts the patent inquiry away from the 35 U.S.C. § 101 subject matter analysis to the novelty, utility, nonobviousness, and specification inquiries.")

<sup>145</sup> "To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there



still might be invalidated in court but much of the harm associated with patent floods is done when the PTO issues the patents.<sup>146</sup>

However, the problem is not just with application of the obviousness test in the PTO, the standard itself is too lenient (at least as applied to business method inventions).<sup>147</sup> The increasing reliance on secondary considerations makes the obviousness hurdle too low.<sup>148</sup> Secondary considerations are economic or motivational factors that indirectly prove nonobviousness. They include “commercial success, long felt but unresolved needs, failure of others, etc. ...”<sup>149</sup> Especially troubling is the use of commercial success as an indicator of nonobviousness. The nexus between commercial success and a business method invention should be quite easy to establish. Another problematic aspect of obviousness doctrine is the requirement that the examiner must show the prior art contains a motivation or teaching to modify old methods. I suspect that many future business method inventions will consist of melding old business methods with new technologies, or updating old methods for new markets.<sup>150</sup> John Kasdan

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must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.” Formulating and Communicating Rejections under 35 U.S.C. 103 For Applications Directed to Computer-Implemented Business Method Inventions [www.uspto.gov/web/menu/busmethp/busmeth103rej.htm](http://www.uspto.gov/web/menu/busmethp/busmeth103rej.htm). The dissent in *Alappat* at 1553-54 criticizes the majority’s reasoning and suggests a danger that music CDs are now patentable as a manufacture, because they are novel, and the PTO would not be able to show obvious.

<sup>146</sup> The Federal Circuit expressed skepticism about the nonobviousness of one of the first e-commerce patents to be litigated in *Amazon.com, Inc., v. Barnesandnoble.com, Inc.*, 2001 U.S. App. Lexis 2163 (Fed. Cir. 2001), pp. 59-60 “substantial question of validity raised by the prior art references cited by BN and discussed herein.”

<sup>147</sup> There is not much chance that the Federal Circuit would adopt a more rigorous standard of nonobviousness for business method patent applications, because it insists the standard of nonobviousness is invariant across fields of invention.

<sup>148</sup> The district court in the *Amazon* case relied on secondary considerations to support its conclusion of nonobviousness. It mentioned copying of the invention by others and solution of a long-felt unmet need.

<sup>149</sup> *Graham v. John Deere Co.*, 383 U.S. 1, 17 (1966).

<sup>150</sup> The PTO insists there is some bite to Section 103 as applied to e-commerce patents. Recent guidelines are reassuring on the point that “merely providing an automatic means to replace a manual activity which accomplishes the same result is not sufficient to” to satisfy 103. *See*, Formulating and Communicating Rejections under 35 U.S.C. 103 For Applications Directed to Computer-Implemented Business Method Inventions [www.uspto.gov/web/menu/busmethp/busmeth103rej.htm](http://www.uspto.gov/web/menu/busmethp/busmeth103rej.htm) (citing *In re Venner*, 262 F.2d 91, 95, 120 USPQ 193, 194 (CCPA 1958)). The guidelines also observe “The Internet, to one ordinarily skilled in

illustrates this point by citing the Priceline.com patent on an Internet version of the reverse auction method that has been around for a long time.<sup>151</sup>

## VII. CONCLUSION

I have argued that the social cost of business method patents may be higher than other types of patents because of the problem of patent floods. Business method inventions are likely to cluster around the time that a new market opens. The cluster of inventions gives rise to a flood of patents. Patent floods create social costs that exceed the simple aggregate of the social costs associated with each patent in the flood. Those costs are attributable to increased licensing and litigation costs, an increased danger of anticompetitive exclusionary use of patents, and a stifling of refinement and application of the patented inventions.

I am particularly troubled by patents on business methods that I call customer service methods. Customer service methods relate to marketing, product features, and product varieties. In comparison to administrative methods, customer service methods are likely to cluster around the time a new market opens, and thereby create flood problems. I fear that customer service methods are especially likely to create a patent thicket that slows cumulative innovation and diffusion, and institutions like patent pools may not emerge to solve these problems because of the uncertain valuation of these inventions and the heterogeneity of the inventions and patent owners. Trade secret law rather than

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the art, for some time now is recognized as a vehicle in which information is shared from computer to computer.” *Id.* These comments seem correct but do not really address my concerns. *See* William M. Bulkeley, U.S. Patent Office Slows the Pace of Patents for Business Methods WALL STREET JOURNAL (“Critics charge that many business methods being patented are simply computerizing activities that are obvious and have been done with paper and pencil in the past.”) *See* Dreyfuss, *supra* note 84, at 278-79 (warning the courts not to allow patents on well known business methods just because they have a software implementation).

<sup>151</sup> *See* Kasdan *supra* note 119, at x. He speculates that the PTO “may not have found the Priceline.com patent ... to be obvious because, following the directives of the Federal Circuit, they were unable to find anything in the literature suggesting that it might be a good idea to computerize such transactions.”

patent law will often be chosen by companies to protect administrative methods,  
therefore making them patentable subject matter might not have significant effects.