

# WHAT IF THERE WERE A BUSINESS METHOD USE EXEMPTION TO PATENT INFRINGEMENT?

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## INTRODUCTION

The Federal Circuit’s decision in *State Street Bank & Trust Co. v. Signature Financial Group Inc.*<sup>1</sup> that business methods are patentable is nearly

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1. 149 F.3d 1368 (Fed. Cir. 1998).

ten years old, yet the wisdom of patenting business methods remains highly debatable. Three Supreme Court justices recently have questioned *State Street Bank*'s "useful, concrete, and tangible result" test for patentable subject matter.<sup>2</sup> They were joined elsewhere by a fourth justice in questioning the "potential vagueness and suspect validity" of business method patents.<sup>3</sup> Congress has also exhibited unease with at least some business method patents. It enacted a prior user defense applicable only to business methods<sup>4</sup> and is currently considering a prohibition on tax planning patents.<sup>5</sup> Even the Federal Circuit appears to be reigning in the patentability of business methods. In its recent opinion in *In re Comiskey*, the court held unpatentable "[a] method for mandatory arbitration resolution" because the claims to "the mental process of resolving a legal dispute between two parties by the decision of a human arbitrator" were directed to unpatentable mental processes.<sup>6</sup> The Federal Circuit has also sua sponte ordered en banc review in *In re Bilski*, which deals with the patentability of claims to a method of commodity trading.<sup>7</sup> In the order granting en banc review, the court asks whether the *State Street Bank* case should be reconsidered.<sup>8</sup>

Many commentators have also debated the patenting of business methods, questioning whether patents are necessary to spark innovation in methods of doing business and whether exclusive rights to business methods are impediments to a competitive economy.<sup>9</sup> Others have argued that

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2. *Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc.*, 548 U.S. 124 (2006) (Breyer, J., dissenting).

3. *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388, 396 (2006) (Kennedy, J., concurring).

4. 35 U.S.C. § 287(c) (1999) (limiting damages and other remedies in patent actions).

5. Patent Reform Act of 2007, H.R. 1908, 110th Cong. (2007).

6. *In re Comiskey*, 499 F.3d 1365, 1368, 1379 (Fed. Cir. 2007).

7. *In re Bilski*, No. 2007-1130, 2008 WL 417680 (Fed. Cir. Feb. 15, 2008).

8. *Id.*

9. See, e.g., Rochelle Cooper Dreyfuss, *Are Business Method Patents Bad for Business?*, 16 SANTA CLARA COMPUTER & HIGH TECH. L.J. 263 (2000); Dan L. Burk, *Patenting Speech*, 79 TEX. L. REV. 99 (2000); 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 (1999); John Fazio, *Financial Innovation Patents: The Future of the Futures Markets, or Old Wine in New Bottles?*, 10 COMPUTER L. REV. & TECH. J. 41 (2006); Rebecca S. Eisenberg, *Re-Examining the Role of Patents in Appropriating the Value of DNA Sequences*, 49 EMORY L.J. 783 (2000); Keith E. Maskus & Eina Vivian Wong, *Searching for Economic Balance in Business Method Patents*, 8 WASH. U. J.L. & POL'Y 289 (2002); Michael J. Meurer, *Business Method Patents and Patent Floods*, 8 WASH. U. J.L. & POL'Y 309 (2002); John R. Thomas, *The Post-Industrial Patent System*, 10 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 3 (1999); Richard S. Gruner, *Intangible Inventions: Patentable Subject Matter for an Information Age*, 35 LOY. L.A. L. REV. 355 (2002); Jay Dratler, Jr., *Does Lord Darcy Yet Live? The Case Against Software and Business-Method Patents*, 43 SANTA CLARA L. REV. 823 (2003); John R. Thomas, *The Patenting of the Liberal Professions*, 40 B.C. L. REV. 1139 (1999); Malla Pollack, *The Multiple Unconstitutionality of Busi-*

problems with business method patents may stem primarily from low patent quality and that the problem could be addressed by increasing quality control at the patent office rather than by refusing to patent business methods.<sup>10</sup> Recently, some empirical studies have suggested that concerns with business method patent quality are overblown.<sup>11</sup>

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*ness Method Patents: Common Sense, Congressional Consideration, and Constitutional History*, 28 RUTGERS COMPUTER & TECH. L.J. 61 (2002); R. Carl Moy, *Subjecting Rembrandt to the Rule of Law: Rule-Based Solutions for Determining the Patentability of Business Methods*, 28 WM. MITCHELL L. REV. 1047 (2002); Kevin Emerson Collins, *Propertizing Thought*, 60 SMU L. REV. 317 (2007); Kevin Emerson Collins, *Claims to Information Qua Information and a Structural Theory Of Section 101*, WIS. L. REV. (forthcoming 2008), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=1016725](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1016725); Kevin Michael Lemley, *Just Turn North on State Street and then Follow the Signs Given by the Federal Circuit: A Sophisticated Approach to the Patentability of Computerized Business Methods*, 8 J. TECH. L. & POL'Y 1 (2003); Neeraj Arora, *Disabling Patentability for Skill-Based Inventions: Aligning Patent Law with Competition Policy*, 22 SANTA CLARA COMPUTER & HIGH TECH. L.J. 1 (2005); Thomas F. Cotter, *A Burkean Perspective on Patent Eligibility*, 22 BERKELEY TECH. L.J. 855 (2007); Jeffrey R. Kuester & Lawrence E. Thompson, *Risks Associated with Restricting Business Method and E-Commerce Patents*, 17 GA. ST. U. L. REV. 657 (2001); David S. Olson, *Patentable Subject Matter: The Problem of the Absent Gatekeeper* (Stanford Law School Center for Internet and Society Working Paper, 2006), available at <http://ssrn.com/abstract=933167>; Robert P. Merges, *The Uninvited Guest: Patents on Wall Street*, 2003 ECON. REV. Q4, 1 (2003); Robert M. Hunt, *You Can Patent That? Are Patents on Computer Programs and Business Methods Good for the New Economy?*, BUS. REV. Q1, 5 (2001); Bronwyn H. Hall, *Business Method Patents, Innovation and Policy* (NBER Working Paper Series Working Paper No. 9717, 2003), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=463160](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=463160); Vincent Chiappetta, *TRIP-ping Over Business Method Patents*, 37 VAND. J. TRANSNAT'L L. 181 (2004); Brian P. Biddinger, *Limiting the Business Method Patent: A Comparison and Proposed Alignment of European, Japanese and United States Patent Law*, 69 FORDHAM L. REV. 2523 (2001); Nicholas A. Smith, Note, *Business Method Patents and Their Limits: Justifications, History, and the Emergence of a Claim Construction Jurisprudence*, 9 MICH. TELECOMM. & TECH. L. REV. 171 (2002); James S. Sfekas, *Controlling Business Method Patents: How the Japanese Standard for Patenting Software Could Bring Reasonable Limitations to Business Method Patents in the United States*, 16 PAC. RIM L. & POL'Y J. 197 (2007); Josh Lerner, *The New Financial Thing: The Sources of Innovation Before and After State Street* (NBER Working Paper Series Working Paper No. 10223, 2004), available at <http://www.nber.org/papers/w10223>; Enrique J. Schroth & Helios Herrera, *Profitable Innovation Without Patent Protection: The Case of Derivatives* (Instituto Tecnológico Autónomo de México—Centro de investigación Económica, 2008), available at <http://ssrn.com/abstract=384822>; Jared Earl Grusd, *Internet Business Methods: What Role Does and Should Patent Law Play?*, 4 VA. J.L. & TECH. 9 (1999); see also DONALD S. CHISUM, CHISUM ON PATENTS (2006) § 1.03, nn.140, 200, 573.

10. See, e.g., Merges, *Six Impossible Patents*, *supra* note 9.

11. John R. Allison & Emerson H. Tiller, *The Business Method Patent Myth*, 18 BERKELEY TECH. L.J. 987, 1081 (2003); John R. Allison & Starling D. Hunter, *On the Feasibility of Improving Patent Quality One Technology at a Time: The Case of Business Methods*, 21 BERKELEY TECH. L.J. 729, 735 (2006); Starling David Hunter, III, *Have Business Method Patents Gotten a Bum Rap? Some Empirical Evidence*, 6 J. INFO. TECH. THEORY & APPLICATION 1, 5 (2004).

This short Symposium piece seeks to add a new dimension to this debate. My goal here is not to take a position on the larger issue of whether business methods are or should be patentable subject matter, but rather to point out that at least some business methods are part of a larger category of *user innovation* for which patent incentives are often relatively less important as a spur to innovation. By “user innovation,” I mean inventions made for the inventor’s own use rather than for sale.<sup>12</sup> In a recent article, I explored some of the implications of user innovation for patent doctrine, arguing that the distinct incentive structures involved in user and seller innovation may call for different treatment under the patent laws.<sup>13</sup> Here, in accord with the “What If . . .” theme of this Symposium, I explore the possible effects on business method innovation of a middle ground approach, inspired by thinking about the implications of user innovation for business methods. What if, rather than exclude business methods from patentability altogether, we were to exempt business method use (but not sale) from infringement liability? This suggestion is similar to the idea of a research tool use exemption, which I proposed in the context of user innovation in my earlier article,<sup>14</sup> and also is along the lines of the statutory exemption from infringement liability for users of surgical methods (indeed, this statutory exemption is arguably a special case of a business method use exemption).<sup>15</sup>

A use exemption would have at least two potential advantages over a categorical subject matter rejection. First, it is difficult to define “business method patents” based on the bare patent application. Deferring the answer to that question to the time of infringement will not transform it into an easy question, but it may be easier to assess “use as a method of doing business” in the context of a real-world infringement action. In that context, the question would be answered in the first instance by district court judges and juries. While patent cases often confront these factfinders with difficult technical questions concerning which their expertise is suspect, the question of whether a particular infringement is a “business method use” may be far more amenable to non-expert common sense assessment.

Second, a use exemption protects inventors against competing *sellers* of business methods—e.g., as embodied in software or in specialized training. As I will argue below, such a distinction tends to have the salutary effect of channeling user and seller innovators toward the kinds of inventions for which they have lower invention costs. A use exemption also pre-

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12. See ERIC VON HIPPEL, *DEMOCRATIZING INNOVATION* 3 (2005) (providing an overview of research on user innovation).

13. Katherine J. Strandburg, *Users as Innovators: Implications for Patent Doctrine*, 79 U. COLO. L. REV. (forthcoming 2008), available at <http://ssrn.com/abstract=969399>.

14. *Id.*

15. 35 U.S.C. § 287(c) (1999).

serves at least part of the commercialization function of patents<sup>16</sup> by retaining a role for entrepreneurial inventors, at least for the kinds of business method inventions that are likely to be purchased by users rather than simply adopted for use. Such inventions may include those embodied in software (for which copyright will provide protection against the most direct forms of user appropriation), those associated with products that users are likely to purchase, or those requiring substantial training or know-how to implement effectively. Sellers probably also tend to invent those business methods requiring the greatest investments in research and development.

Like any weakening or denial of patent protection, a business method use exemption has potential costs. It would likely increase reliance on trade secrecy, thus delaying disclosure of some business method inventions. It would also, at the margins, probably discourage innovation of any business methods that are expensive to develop but cheap to copy. The payoff of such a business method use exemption would come from broader use of those remaining inventions that *are* made and disclosed. Whether this tradeoff is a good social bargain is an empirical question that I cannot fully answer here. My goal instead is merely to argue that the user innovator characteristics of business method inventions make it at least plausible that a business method use exemption would provide net social benefit and that the empirical questions are thus worthy of further investigation.

The plausibility argument rests on four contentions, discussed more fully in the context of specific types of business methods below. First, as has been demonstrated in other contexts,<sup>17</sup> business method users and sellers are likely to make distinctive types of inventions keyed to their distinctive types of expertise. If this is the case, it is also likely that user inventions will be more amenable to user copying and adoption, while seller inventions will mostly be vulnerable to appropriation by competing sellers. Second, because users are often able to develop business methods at very low cost as a side effect of their own use, and are often able to benefit from significant non-patent appropriability mechanisms, such as trade secrecy, first-mover advantages, customer switching costs, and skill- and reputation-based advantages, the level of business method innovation by users is likely to be quite high, even if there is a use exemption.<sup>18</sup> Third, for those user-

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16. See, e.g., F. Scott Kieff, *Property Rights and Property Rules for Commercializing Inventions*, 85 MINN. L. REV. 697, 707 (2000); Paul J. Heald, *A Transactions Cost Theory of Patent Law*, available at <http://ssrn.com/abstract=385841>; Hall, *supra* note 9 (concluding that the patent system permits “vertical disintegration” of knowledge-based industries and the entry of new firms that possess only intangible assets).

17. See, e.g., VON HIPPEL, *supra* note 12.

18. First mover advantages result from the fact that, even in the absence of trade secrecy or patenting, the first to employ a particular method or offer a particular product often enjoys a period of market exclusivity during the time it takes others to implement a new technology.

developed business methods that can be kept secret, a switch to reliance on trade secrecy rather than patenting is unlikely to be socially detrimental. Trade secrecy may, in fact, be preferable because of the limited value of the patent disclosure for these inventions and the high cost of delaying their dissemination for the full patent term. Finally, for many business methods, patent exclusivity is likely to impose particularly high social costs, since user innovators are often motivated to restrict dissemination of their inventions, rather than to disseminate them broadly at a somewhat supra-competitive price, as seller innovators seek to do. Because all of these conditions are present, it is plausible that a use exemption would be socially desirable.

Focusing on these four conditions as plausibly justifying a use exemption leads to some distinctions between activities commonly lumped together under the rubric “business methods.” I argue below that methods of operating a business, whether “back office” administrative methods or customer service methods, likely meet these conditions. Methods of performing personal and professional services also likely meet these criteria, even though a method of providing a service often functions somewhat similarly in the marketplace to a product feature. Some of what are commonly called “business methods,” however, including most notably those protected by the financial patents exemplified by the Hub and Spoke mutual fund of the *State Street Bank* case,<sup>19</sup> may be more akin to new “products” than to “methods of doing business.” It may not make sense to exempt infringing purveyors of such intangible “products” from liability as “users” of the associated methods.

As a practical matter, of course, it might be difficult to distinguish using a patented method of performing a service from selling an intangible product, though it might not be unreasonable to rely on a factfinder’s common sense in this regard. A more conservative option would be to limit a business method use exception to operational methods.

Part I of this Article describes “business methods” and categorizes them in a way that will be useful for the analysis that follows. It then describes how patent law doctrine currently deals with business methods and briefly reviews some of the scholarly debate about business method patenting. Part II explains the concepts of user innovation, as explored in studies by Professor Eric von Hippel and others.<sup>20</sup> It then briefly discusses how user innovation relates to incentive theories of patent law. Part II draws heavily from my earlier article on this subject, and interested readers are referred to that article for a more complete discussion.<sup>21</sup> Part III applies the

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

20. See VON HIPPEL, *supra* note 12, and references therein.

21. Strandburg, *supra* note 13, and references therein.

user innovation framework to the categories of business method innovations laid out in Part I and assesses the potential social implications of a business method use exemption.

## I. AN OVERVIEW OF BUSINESS METHOD PATENTS

### A. What are Business Methods?

Any discussion of business method patents immediately confronts a definitional difficulty, partly because business methods may be difficult to distinguish conceptually from other processes, and partly because there are many different kinds of inventions even within the core of commonly acknowledged business method territory. These different kinds of inventions may have different kinds of development costs, appropriability potential,<sup>22</sup> and so forth, which may affect the theoretical analysis of the desirable bounds of patent protection.

One useful definition of business method was given in the draft Business Method Patent Improvement Act of 2000, H.R. 5364 (BMPIA), which was aimed primarily at addressing perceived problems of quality with business method patents.<sup>23</sup> That Act defined a business method as

(1) a method of (A) administering, managing, or otherwise operating an enterprise or organization, including a technique used in doing or conducting business; or (B) processing financial data; (2) any technique used in athletics, instruction, or personal skills; and (3) any computer-assisted implementation of a method described in paragraph (1) or a technique described in paragraph (2).<sup>24</sup>

Subsection (1)(a) of this definition seems to refer to procedures and processes that are associated not with producing the products or performing the services that an enterprise sells, but instead with the *operation* of selling those products or services. These are also the types of business methods that some commentators seem to have in mind when they distinguish between the “competitive arts” and the “technological arts.”<sup>25</sup> As suggested by Subsection (1)(b) of this definition, the term “business method” is also often used to describe financial services of all types, including, for example, particular financial “products,” such as derivatives, mutual funds, etc., which are frequently claimed in terms of systems or processes for managing

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22. By “appropriability potential,” I mean the ability for an inventor to recoup the costs of invention by various means, including trade secrecy, first mover advantages, network effects, and so forth.

23. Business Method Patent Improvement Act, H.R. 5364, 106th Cong. (2000).

24. *Id.* § 2.

25. See, e.g., Chiappetta, *supra* note 9, at 185; see also Pollack, *supra* note 9, at 86 (stating that “useful Arts” does/do not include mere commerce); Dratler, *supra* note 9, at 839-40 (distinguishing market risk from technological risk).

them.<sup>26</sup> It is also commonly applied to methods of performing personal or professional services, as suggested by Subsection (2).<sup>27</sup>

For purposes of this Article, I use four categories to characterize business methods: (1) “back office” or administrative operational methods; (2) customer service operational methods; (3) methods of providing personal or professional services; and (4) intangible “products.” This categorization is related to, but not identical to, that employed by Professor Michael Meurer.<sup>28</sup> He divides business methods into administrative methods and customer service methods.<sup>29</sup> Administrative methods are back office methods that increase productivity or reduce organizational or production costs. They may include, among other things, methods for analysis and presentation of financial data, inventory and distribution management methods, and payment systems, and they correspond to category (1) identified here.<sup>30</sup> Customer service methods in Meurer’s taxonomy include methods I distinguish in categories (2) through (4). Thus, he identifies as customer service methods those that allow business owners to offer attractive retail features to customers, including: “a method for real-time payments for Internet transactions; . . . an online method of evaluating credit risk; a method for paying web users who view web advertising; . . . [one-click purchasing;] . . . long-distance telephone pricing; . . . electronic distribution of coupons; . . .” and so forth, all of which would fit into my category (2).<sup>31</sup> He also includes both services “consumed” by customers, corresponding to my category (3), and new product varieties or new product features, such as the hub-and-spoke mutual fund of the *State Street Bank* case; and offerings on the internet such as online experts, online gambling, electronic postage, cash management accounts, and online auctions, which would probably belong in category (4).<sup>32</sup>

The relevant distinction between the first two of the categories I use here is primarily one of consumer transparency. “Back office” methods are, as their name suggests, mostly invisible to customers (and to competitors), whereas customer service methods relate to a business’s interactions with customers and thus tend to be self-disclosing to both customers and competitors. The first category would include a method of inventory control or

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26. See, e.g., Fazio, *supra* note 9, at 41; James F. Bauerle, *Technology, Law, and Banking*, “Beam Me Up, Scotty”: *Business Method Patents as a Transformational Device in Financial Services*, 119 *BANKING L.J.* 386 (2007); Lerner, *supra* note 9; Meurer, *supra* note 9.

27. Meurer, *supra* note 9, at 315; Arora, *supra* note 9.

28. Meurer, *supra* note 9, at 315.

29. *Id.* at 315.

30. *Id.*

31. *Id.* at 317 (internal citations omitted).

32. *Id.* at 316. Meurer gives a number of useful examples of business methods and business method patents.

accounting, while the second would include an online “shopping cart” or a new method of managing the flow of customers through a retail shop in the offline world.

It will not always be possible to draw a neat line between these two categories, of course. A particular claimed process might include some back office steps and some steps that involve interactions with customers. The distinction is useful for analysis, but it would be difficult as a practical matter to implement a business use exemption if it required putting methods of business operation into one category or another.

The third category includes methods directly associated with the quality or features of services provided to consumers. Examples of these are a new massage technique or surgical method. Often these inventions are what another commentator has called “skill-based inventions.”<sup>33</sup> Sometimes these inventions will be observable by competing providers when they are used (self-disclosing), and sometimes not, depending upon whether the service is performed where competitors can observe it. A technique for massage therapy or house painting, for example, might be neither understood by customers nor observed by competing providers, whereas a sports move is likely to be both observed and understood by potential competitors.

The fourth category includes many financial products and the data processing methods used to provide them, as well as some online “business models,” such as iTunes or Google, which customers perceive to be new products. The distinction between these intangible “products” and other business methods is not a matter of whether they are claimed as methods, systems, or products as a matter of patent practice, but of consumer experience. As noted by Meurer, a patent on a process can be equivalent to a patent on the product or product variety itself, if there is essentially no other economical way to provide the particular product.<sup>34</sup> Thus, for example, patents commonly referred to as covering financial “products,”<sup>35</sup> such as the patent at issue in *State Street Bank*, often claim methods of implementing the accounting and other financial data processing necessary to provide customers with a product possessing new properties.<sup>36</sup> If exclusive control over these methods effectively provides exclusive control over the products

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33. Arora, *supra* note 9, at 3 (defining skill-based inventions as those inventions whose efficacy is largely determined by the skill of the user).

34. Meurer, *supra* note 9, at 314.

35. See, e.g., Meurer, *supra* note 9, at 314; Praveen Kumar & Stuart M. Turnbull, *Patenting and Licensing of Financial Innovations* (Working Paper 2006), available at <http://ssrn.com/abstract=917874>; Fazio, *supra* note 9; Lerner, *supra* note 9; Josh Lerner, *The Two-Edged Sword: The Competitive Implications of Financial Patents* (Working Paper 2003), available at <http://www.frbatlanta.org/news/conferen/fm2003/lerner.doc>.

36. *State St. Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1371 (Fed. Cir. 1998).

themselves, the associated patents should be considered as patents on intangible products for purposes of the analysis.<sup>37</sup>

If we were to implement a business method use exemption, we would need to consider whether to treat infringers of patents in these third and fourth categories as *users* of methods of doing business or as *sellers* of intangible products and services. I return to this point in the discussion below.

## B. Business Methods and Patent Doctrine

The struggle to determine how the patent system should handle methods of doing business is not new. Indeed, the general question of how to define patentable processes (what were earlier called “arts”) has often confounded the courts.<sup>38</sup> Until the end of the last century, it was widely thought that business methods were unpatentable subject matter. In a well-known case from the early twentieth century, for example, a court stated categorically that, “A system of transacting business disconnected from the means for carrying out the system is not . . . an art.”<sup>39</sup> Similarly, in *In re Patton* the court noted that it was “sufficient to say that a system of transacting business, apart from the means for carrying out such system, is not within [patentable subject matter].”<sup>40</sup>

Though business methods were considered unpatentable, the patentability of business-related products was never questioned. The modern controversy about business method patentability arose because the line between products and methods began to blur in the 1970s and 1980s with the increasing patenting of computer-related inventions, and the related doctrinal shifts accompanying the courts’ attempts to distinguish unpatentable abstract ideas and “mathematical algorithms” from patentable processes.<sup>41</sup> In an attempt to avoid having their inventions excluded from patentability on such grounds, patentees often claimed their software-related inventions to be “systems” or “machines.”<sup>42</sup> As business methods were computerized, patents drawn to what might earlier have been deemed unpatentable methods of doing business slipped in under the guise of apparatus claims.<sup>43</sup> For example, in *Paine, Webber, Jackson & Curtis, Inc. v. Merrill Lynch, Pierce,*

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37. Meurer, *supra* note 9.

38. See CHISUM, *supra* note 9, § 1.03 (providing an up-to-date overview of the patentability of process inventions).

39. *Hotel Sec. Checking Co. v. Lorraine Co.*, 160 F. 467, 469 (2d Cir. 1908).

40. 127 F.2d 324, 328 (C.C.P.A. 1942).

41. See CHISUM, *supra* note 9, § 1.03; *Gottschalk v. Benson*, 409 U.S. 64 (1972); *Diamond v. Diehr*, 450 U.S. 173 (1981).

42. See CHISUM, *supra* note 9, § 1.03.

43. Patent claims may be drafted as either product (also known as apparatus) claims or process (also known as method) claims.

*Fenner & Smith, Inc.*, the court upheld the patentability of a claim directed to a “Cash Management Account,” which combined a brokerage security account, a money market fund, and a checking account.<sup>44</sup> On the other hand, as late as 1988, the Board of Patent Appeals and Interferences supported a rejection by stating that

the claimed accounting method, requiring no more than the entering, sorting, debiting and totaling of expenditures as necessary preliminary steps to issuing an expense analysis statement, is, on its very face, a vivid example of the type of “method of doing business” contemplated by our review court as outside the protection of the patent statutes.<sup>45</sup>

Though apparently alive in 1988, the business method exception seemed to have been abolished in the 1990s by a series of Federal Circuit opinions on the patentability of software-related inventions, culminating in the Federal Circuit’s 1998 decision in *State Street Bank*.<sup>46</sup> There, the court ruled on the patentability of a computer-implemented “system” for offering a so-called “Hub and Spoke” mutual fund arrangement. The court contended that prior opinions appearing to endorse a business method exception from patentable subject matter were all explicable on other doctrinal grounds and emphatically stated, “We take this opportunity to lay this ill-conceived exception to rest.”<sup>47</sup> While acknowledging the Supreme Court’s affirmation of exceptions to patentable subject matter for “laws of nature, natural phenomena, and abstract ideas,”<sup>48</sup> the Federal Circuit emphasized that the *sine qua non* of patentable subject matter was whether the claimed invention produced a “useful, concrete, and tangible result.”<sup>49</sup>

The Federal Circuit seemed to dispel any lingering doubts as to whether the patentable subject matter question turned on claiming an algorithm as a system or machine, or on a connection to a physical transformation of matter, in *AT&T Corp. v. Excel Communications, Inc.*<sup>50</sup> The patent at issue in that case involved a method of recording a long-distance telephone call that included indicators of the caller’s and recipient’s “primary interexchange carrier (‘PIC’).”<sup>51</sup> The court explained that “addition of the indicator aids long-distance carriers in providing differential billing treat-

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44. 564 F. Supp. 1358 (D. Del. 1983).

45. *Ex parte Murray*, 9 U.S.P.Q.2d 1819, 1820 (B.P.A.I. 1988).

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

47. *Id.* at 1375.

48. *Id.* at 1373 (citing *Diamond v. Diehr*, 450 U.S. 175, 185 (1981)).

49. *Id.* at 1373-75 (citing *In re Alappat*, 33 F.3d 1526, 1544 (Fed. Cir. 1994) (en banc)).

50. 172 F.3d 1352 (1999).

51. *Id.* at 1353-54.

ment for subscribers, depending upon whether a subscriber calls someone with the same or a different long-distance carrier.”<sup>52</sup>

Though the patentability of business methods per se (and the PIC claims clearly were directed to a business method) was no longer in doubt after *State Street Bank*, the court considered whether the claims might nonetheless be invalid as attempts to claim unpatentable “mathematical algorithms.”<sup>53</sup> The court interpreted its earlier decisions in *State Street Bank* and *In re Alappat*<sup>54</sup> to severely limit the applicability of the mathematical algorithm exception, reducing it to a question of whether the algorithm “is a disembodied mathematical concept representing nothing more than a ‘law of nature’ or an ‘abstract idea,’ or if the mathematical concept has been reduced to some practical application rendering it ‘useful.’”<sup>55</sup> Recording the PIC was useful, so the claims were patentable in principle.<sup>56</sup>

Following the *State Street Bank* and *AT&T* decisions, despite considerable scholarly and other concern about the potential for floods of ill-conceived and over-reaching patents on methods of doing business,<sup>57</sup> the possibility that a court would hold a business method unpatentable on subject matter grounds seemed remote. Efforts to ensure against over-patenting of business methods eventually shifted primarily to attempts to ensure business method patent quality, such as the unsuccessful introduction of the Business Method Patent Improvement Act of 2000 mentioned earlier,<sup>58</sup> and the institution of a more stringent “second look” review process for patents in the U.S. Patent and Trademark Office (PTO) classification believed to encompass the bulk of business method patents.<sup>59</sup> Congress also passed a prior user defense specifically aimed at business methods to protect those who had been practicing business methods as trade secrets before they were deemed to be patentable.<sup>60</sup>

In 2005, the Board of Patent Appeals and Interferences issued a precedential opinion confirming the expansive view of the Federal Circuit’s “use-

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52. *Id.* at 1353.

53. *Id.* at 1357 (citing *State St. Bank*, 149 F.3d at 1373).

54. 33 F.3d 1526 (Fed. Cir. 1994) (en banc).

55. *AT&T Corp.*, 127 F.3d at 1357 (citing *Alappat*, 33 F.3d at 1544).

56. *Id.* at 1361. Though the claims were later determined to have been obvious. *AT&T Corp. v. Excel Commc'ns, Inc.*, No. 96-434-SLR, 1999 U.S. Dist. LEXIS 17871 (D. Del. Oct. 25, 1999).

57. See discussion and references *infra* Section I.C.

58. Business Methods Patent Improvement Act of 2000, H.R. 5364, 106th Cong. (2000).

59. See USPTO, White Paper, *Automated Financial or Management Data Processing Methods (Business Methods)*, available at <http://www.uspto.gov/web/menu/busmethp/index.html>.

60. 35 U.S.C. § 273(a) (1999).

ful, concrete, and tangible result” test. In *Ex Parte Lundgren*,<sup>61</sup> it overturned an examiner’s rejection of claims to a “method of compensating a manager,” even though the claims were not limited to computerized implementation. The examiner had rejected the claims based on a purported requirement that a patentable invention be directed to the “technological arts.”<sup>62</sup> The majority clearly held that there is no separate “technological arts” requirement over and above the Federal Circuit’s “useful, concrete, and tangible result” test.<sup>63</sup>

Though the issue of a business method patent exemption seemed to have been resolved definitively by *State Street Bank*, the ensuing Federal Circuit case law, and PTO practice, the question has been reinvigorated by what Professor John Duffy rather presciently dubbed the “return of the Supreme Court to the bar of patents.”<sup>64</sup> For nearly twenty-five years, the Supreme Court had relatively little to say on the topic of patent law.<sup>65</sup> That changed dramatically beginning in 2005. From 2005 up to the present date, the Supreme Court has granted certiorari in nine patent cases.<sup>66</sup> While none of these cases has addressed the patentability of business methods per se, in several of them some of the justices have expressed reservations about the broad sweep of business method patenting.

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61. *Ex Parte Lundgren*, Appeal No. 2003-2088, 2005 Pat. App. LEXIS 34 (Apr. 20, 2004).

62. *Id.* at \*5-6. This approach bears some similarity to that of the European Union and Japan. See, e.g., Biddinger, *supra* note 9, at 2523; Thomas, *supra* note 9, at 1175; Sfekas, *supra* note 9, at 197.

63. *Ex Parte Lundgren*, 2005 Pat. App. LEXIS, at \*11-12.

64. John F. Duffy, *The Festo Decision and the Return of the Supreme Court to the Bar of Patents*, 2002 SUP. CT. REV. 273, 339-40 (2003).

65. Between 1980 and 2005, the Supreme Court issued only twelve opinions in cases touching on patent law. See *Holmes Group, Inc. v. Vornado Air Circulation Sys.*, 535 U.S. 826 (2002); *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722 (2002); *J.E.M. AG Supply, Inc. v. Pioneer Hi-Bred Int’l, Inc.*, 534 U.S. 124 (2001); *Fla. Prepaid Postsecondary Educ. Expense Bd. v. College Sav. Bank*, 527 U.S. 627 (1999); *Dickinson v. Zurko*, 527 U.S. 150 (1999); *Pfaff v. Wells Elecs.*, 525 U.S. 55 (1998); *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17 (1997); *Markman v. Westview Instruments*, 517 U.S. 370 (1996); *Cardinal Chem. Co. v. Morton Int’l, Inc.*, 508 U.S. 83 (1993); *Eli Lilly & Co. v. Medtronic, Inc.*, 496 U.S. 661 (1990); *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141 (1989); *Dennison Mfg. Co. v. Panduit Corp.*, 475 U.S. 809 (1986).

66. See *Quanta Computer, Inc. v. LG Electronics, Inc.*, 128 S. Ct. 28 (2007); *Microsoft Corp. v. AT&T Corp.*, 127 S. Ct. 1746 (2007); *KSR Int’l Co. v. Teleflex, Inc.*, 127 S. Ct. 1727 (2007); *MedImmune, Inc. v. Genentech, Inc.*, 549 U.S. 118 (2007); *Lab. Corp. of Am. Holdings v. Metabolite Labs., Inc.*, 548 U.S. 124 (2006) (dismissing certiorari as improvidently granted); *eBay Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006); *Ill. Tool Works, Inc. v. Indep. Ink, Inc.*, 547 U.S. 28 (2006); *Unitherm Food Sys., Inc. v. Swift-Eckrich, Inc.* 546 U.S. 394 (2006); *Merck KGaA v. Integra Lifesciences I, Ltd.*, 545 U.S. 193 (2005).

In *eBay v. MercExchange, L.L.C.*, the Court dealt with the standard for imposing injunctive relief for patent infringement.<sup>67</sup> Under Federal Circuit standards at the time, injunctive relief was virtually certain if there was a judgment of infringement.<sup>68</sup> The Court held that the standard four-factor balancing test for injunctive relief must be applied in patent cases, making it more likely that injunctive relief would be denied.<sup>69</sup> Though the *eBay* case did not address the patentability of business methods directly, the patent at issue was a business method patent. Moreover, the concern with overly broad application of injunctive relief underlying the case was tied up with perceptions by the information technology industry that the many overlapping patent rights that often pertained to software and e-commerce applications (many of them “business methods”) permitted patentees (some derogatorily deemed “patent trolls”)<sup>70</sup> to use the threat of injunctive relief to “hold up” technology companies for unreasonably high royalties.<sup>71</sup>

In a brief unanimous opinion, the Court held that patent injunctions were to be determined based on the same four-factor test applied in other areas of law,<sup>72</sup> rather than being practically guaranteed upon a finding of patent infringement.<sup>73</sup> Most relevant for our purposes here, Justice Kennedy, in a concurrence joined by three other justices, expressed doubts about the impact of business method patents, opining that “injunctive relief may have different consequences for the burgeoning number of patents over business methods, which were not of much economic and legal significance

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67. 547 U.S. 388 (2006).

68. See, e.g., *MercExchange, L.L.C. v. eBay, Inc.*, 401 F.3d 1323, 1339 (Fed. Cir. 2005) (applying “general rule that courts will issue permanent injunctions against patent infringement absent exceptional circumstances”). For a critique of the Federal Circuit’s approach, see, for example, Brief for 35 Intellectual Property Professors as Amici Curiae Supporting The Petition For Certiorari, *eBay, Inc. v. MercExchange, L.L.C.*, 547 U.S. 388 (2006) (No. 05-130).

69. *eBay, Inc.*, 547 U.S. at 388-92.

70. See, e.g., Gerard N. Magliocca, *Blackberries and Barnyards: Patent Trolls and the Perils of Innovation*, 82 NOTRE DAME L. REV. 1809 (2007); Kurt Dew, *Magicians, Reputation Trolls, Tsunamis and Floods: Has Patent Protection for Financial Innovation Encouraged Financial Institution Creativity?* (Griffith Univ. Working Paper, 2007), available at <http://ssrn.com/abstract=982762>; Ewing Marion Kauffman Foundation, White Paper, *On the Road to an Entrepreneurial Economy: A Research and Policy Guide* (Feb. 26, 2007) (discussing the relation between “patent trolls” and the breadth of injunctive relief).

71. See Mark A. Lemley & Carl Shapiro, *Patent Holdup and Royalty Stacking*, 85 TEX. L. REV. 1991 (2007) (providing a discussion of this issue).

72. See, e.g., *eBay*, 547 U.S. at 391 (“According to well-established principles of equity, a plaintiff seeking a permanent injunction must satisfy a four-factor test before a court may grant such relief. A plaintiff must demonstrate: (1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction.”).

73. *Id.* at 390-93.

in earlier times. The potential vagueness and suspect validity of some of these patents may affect the calculus under the four-factor test.<sup>74</sup>

At the same time the Court was dealing with the *eBay* case, it granted certiorari and later dismissed it as improvidently granted in the case of *Laboratory Corp. of America Holdings v. Metabolite Laboratories, Inc.*<sup>75</sup> That case concerned claims to a method of diagnosing a vitamin deficiency which involved using any assay (patented or not) to detect the presence of homocysteine, which had been discovered to be related to the deficiency, and then “correlating” elevated levels of homocysteine to the deficiency.<sup>76</sup> The district court and Federal Circuit had construed “correlating” to encompass merely mental correlation by doctors reviewing the results of the assay and that construction was not at issue in the Supreme Court.<sup>77</sup> While this case was seen to turn mainly on the prohibition on patenting scientific principles, it was also of great interest for its potential relation to the patentability of business methods. In an unusual move, the Court permitted the case to be fully briefed and argued before dismissing certiorari on procedural grounds.<sup>78</sup>

In an extensive dissent from the dismissal, Justice Breyer, on behalf of himself and two other justices, opined that the claims in question should have been invalidated as directed to an unpatentable phenomenon of nature.<sup>79</sup> Most importantly for us, he directly questioned the patentee’s reliance on *State Street Bank*’s “useful, concrete, and tangible result” test on the grounds that “this Court has never made such a statement and, if taken literally, the statement would cover instances where this Court has held the contrary.”<sup>80</sup>

Probably in response to these rumblings from the Supreme Court, the PTO has begun issuing more rejections based on patentable subject matter and, in a pair of very recent opinions, the Federal Circuit itself seems to be seeking to set some limits on its expansive view of the doctrine. In *In re Nuijten*,<sup>81</sup> a divided panel recently held that claims to an electrical signal used to create a “digital watermark,” divorced from any process or device for encoding it or any medium for storing it, did not fit within any of the statutory subject matter categories.<sup>82</sup>

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74. *Id.* at 397 (Kennedy, J., concurring).

75. 126 S. Ct. 2921 (2006).

76. *Id.* at 2923-24.

77. *Id.* at 2925.

78. The procedural grounds involved failure to squarely raise the subject matter issue under Section 101 in the trial court or Federal Circuit. *See id.* at 2925-26.

79. *Id.* at 2927.

80. *Id.* at 2928 (Breyer, J., dissenting).

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

82. In an extensive dissent, Judge Linn disputed the sensibility of distinguishing between claims to the same invention based on whether they happen to be encoded in a par-

More relevant to the question of business method patents is the opinion of a different panel in *In re Comiskey*,<sup>83</sup> released on the same day. In that case, a unanimous panel invalidated claims to what the court specifically described as a business method invention—namely, a method for mandatory arbitration resolution.<sup>84</sup> The invalidated claims were devoid of any connection to a computer or other device. Claims to the same method restricted to implementation on a computer were deemed patentable subject matter and remanded to the PTO for a determination of patentability under other doctrines, such as nonobviousness.<sup>85</sup> Interestingly, the court reached out and undertook this inquiry into patentable subject matter, despite the fact that the PTO's rejection had rested on grounds of obviousness.<sup>86</sup>

In a remarkably different tone from the Federal Circuit's opinions in *State Street Bank* and similar cases, the *Comiskey* opinion began by noting that the constitutional grant of authority for the patent system was made in the shadow of the history of British monopoly grants, that "the framers consciously acted to bar Congress from granting letters patent in particular types of businesses," and that "[t]he Constitution explicitly limited patentability to 'the national purpose of advancing the useful arts—the process today called technological innovation.'"<sup>87</sup> While reiterating *State Street Bank*'s conclusion that there is no categorical business method exemption, the court emphasized that business method claims must meet the other requirements of Section 101 patentable subject matter, specifically the ban on patenting abstract ideas.<sup>88</sup>

The court set out a two-part test for assessing whether a claim covers an abstract idea.<sup>89</sup> First, the claim must have some practical application and not be so unlimited as to have the practical effect of patenting an idea in the

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tical storage medium, and so forth. *Id.* at 1358. He would have found that the signals constituted a statutory "manufacture" and then analyzed whether they should be denied as "abstract ideas." *Id.* at 1358. Interpreting the ban on patenting abstract ideas in light of Section 101's requirements that an invention be "new" (which he interprets more broadly than novelty under Section 102 to exclude preexisting scientific principles and mathematical relationships) and "useful" (which he interprets more broadly than Section 112's utility requirement to ask whether the invention's purported use is too attenuated from the claims), Judge Linn contended that the signals at issue in this case were patentable manufactures and not unpatentable abstract ideas. *Id.* at 1366.

83. 499 F.3d 1365 (Fed. Cir. 2007).

84. *Id.* at 1379.

85. *Id.* at 1380. The patentability of these remaining claims was remanded to the PTO, however, for a determination of whether they met the nonobviousness requirement or constituted "routine addition of modern electronics to an otherwise unpatentable invention." *Id.*

86. *Id.* at 1368.

87. *Comiskey*, 499 F.3d at 1375 (citing *Paulik v. Rizkalla*, 760 F.2d 1270, 1276 (Fed. Cir. 1985) (en banc)).

88. *Id.* at 1374.

89. *Id.* at 1376.

abstract or preempting a mathematical formula.<sup>90</sup> The court tied this prong of its analysis to *State Street Bank's* “useful, concrete, and tangible result” requirement.<sup>91</sup> Rather than stopping there, however, the court held that even processes that have practical applications are not patentable subject matter unless they either are tied to a particular apparatus or operate on a composition of matter or manufacture.<sup>92</sup> The court opined that “the present statute does not allow patents to be issued on particular business systems—such as a particular type of arbitration—that depend entirely on the use of mental processes” or “depend for their operation on human intelligence alone.”<sup>93</sup> Thus, “the application of human intelligence to the solution of practical problems is not in and of itself patentable.”<sup>94</sup>

Under this test, *Comiskey's* claims to a process of “resolving a legal dispute between two parties by the decision of a human arbitrator” were not patentable.<sup>95</sup> Though the *Comiskey* opinion does not cite to the BPAI opinion in *Lundgren* and does not mention a “technological arts” test, the panel’s approach is reminiscent of that advocated by the dissenters in that case. Two of the administrative law judges dissented from the majority’s determination in *Lundgren*, one on the basis that a “technological arts” requirement was the modern equivalent of the Constitution’s authorization for patents on the “useful Arts,”<sup>96</sup> and one arguing, among other things, that “[a] series of steps which is not tied to a particular machine or apparatus, and which does not transform physical subject matter to a different state or thing, does not meet the statutory definition of a ‘process’ and is not patentable subject matter.”<sup>97</sup> As mentioned earlier, the en banc Federal Circuit will take up the patentable subject matter question in *Bilski*, potentially either cementing or rejecting these recent moves away from an exclusive reliance on the “useful, concrete, and tangible result” criterion of *State Street Bank*.<sup>98</sup>

A final development contributing to the recent revival of interest in the question of whether business methods should be patentable is the increasing alarm among tax planning professionals at the PTO’s issuance of patents on tax planning methods.<sup>99</sup> The concern generated by tax planning patents is

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90. *Id.* at 1376-77.

91. *Id.*

92. *Id.* at 1377-78.

93. *Id.* at 1378.

94. *Id.* at 1379.

95. *Id.* at 1379.

96. *Ex Parte Lundgren*, 2005 Pat. App. LEXIS 34, at \*12 (Smith, Administrative Patent J., dissenting).

97. *Id.* at \*69 (Barrett, Administrative Patent J., dissenting).

98. See *supra* notes 7-8 and accompanying text.

99. See, e.g., Sample Letter from Jeffrey R. Hoops, Chair, AICPA Executive Committee, to Max Baucus, Chairman, Senate Committee on Finance (Feb. 28, 2007),

reflected in current patent reform legislation. For example, the reform bill passed by the House of Representatives, H.R. 1908, contains a provision banning the patenting of tax planning methods, where

the term "tax planning method" means a plan, strategy, technique, or scheme that is designed to reduce, minimize, or defer, or has, when implemented, the effect of reducing, minimizing, or deferring, a taxpayer's tax liability, but does not include the use of tax preparation software or other tools used solely to perform or model mathematical calculations or prepare tax or information returns.<sup>100</sup>

The time thus seems ripe for another crack at the perplexing business method patent issue.

### C. Scholarly Debate about Business Method Patentability

The *State Street Bank* case and resulting burgeoning patenting of business methods inspired a wide range of scholarly commentary.<sup>101</sup> I do not attempt a comprehensive review of that literature here, but simply summarize some of the points made by previous commentators before approaching the question from the user innovation perspective.

One set of critiques of business method patenting focuses on issues of patent quality.<sup>102</sup> These critics argue that low patent quality for business method patents may have resulted from PTO inexperience with the subject matter of business method patents, from the inaccessibility to examiners of business method prior art due to its relatively recent patentability, and from an overly relaxed nonobviousness standard. The first two points are perhaps growing a bit long in the tooth, since the *State Street Bank* opinion will soon celebrate its tenth anniversary. These points have also been the focus of various procedural initiatives at the PTO.<sup>103</sup> The third quality issue should be at least ameliorated by the Supreme Court's recent decision in *KSR International Co. v. Teleflex, Inc.*, which should make it harder to get patents on obvious applications of new internet technology.<sup>104</sup> Some empirical studies have also suggested that, at least by some measures, there is

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<http://tax.aicpa.org/Resources/Tax+Patents/AICPA+Urges+Congress+to+Address+Tax+Strategy+Patents.htm> (opposing patents on tax planning methods); see also Richard S. Gruner, *When Worlds Collide: Tax Planning Method Patents Meet Tax Practice Making Attorneys the Latest Patent Infringers*, U. ILL. J.L. TECH. & POL'Y (forthcoming 2008) (providing a scholarly discussion of the issues raised by tax planning patents).

100. Patent Reform Act of 2007, H.R. 1908, 110th Cong. (2007).

101. See *supra* note 9.

102. See, e.g., Merges, *Six Impossible Patents*, *supra* note 9; Larry A. DiMatteo, *The New "Problem" of Business Method Patents: The Convergence of National Patent Laws and International Internet Transactions*, 28 RUTGERS COMPUTER & TECH. L.J. 1 (2002).

103. See, e.g., USPTO White Paper, *supra* note 59; Press Release, United States Patent and Trademark Office, Peer-Reviewed Prior Art Pilot (June 26, 2007), available at <http://www.uspto.gov/web/patents/peerpriorartpilot/>.

104. 127 S. Ct. 1727 (2007).

no problem with business method patent quality relative to that of other patents in the first place.<sup>105</sup> In this Article, I set these disputes over patent quality to one side. This discussion focuses on whether business methods should be exempted from patent liability at least in some instances, even if they have been properly vetted for nonobviousness.

A second set of critiques of business method patenting focuses on distinguishing business methods from other patentable subject matter because of their non-technological character, relation to human mental activity, and so forth. These arguments are similar to those recently accepted by the panel in *Comiskey* and made by the dissenters in *Lundgren*. One such discussion is that of Professor John Thomas, in which he contends that technology “may be characterized as knowledge that is applied toward material enterprise, guided by an orientation to the external environment and the necessity of design,” and where he argues for the adoption of a requirement of “industrial application” similar to that used in Europe and Japan.<sup>106</sup> Professor Malla Pollack similarly argues that business method patents are unconstitutional because they are not “useful Arts” for which patents are constitutionally authorized.<sup>107</sup> Other commentators, including Professor Kevin Collins, focus on the propriety of providing exclusive rights in mental activity.<sup>108</sup>

I find these types of arguments intuitively convincing—there is clearly some kind of line to be drawn between industrial manufacturing processes and the kinds of claims involved in both *Comiskey* and *LabCorp*. An approach like that adopted by the Federal Circuit in *Comiskey* seems likely to succeed in weeding out the most egregiously “non-technological” business methods and other types of skill-based activities, such as dance moves and legal strategies. As a conceptual matter, however, the ubiquity of computer use may render any test based on whether a method is tied to a machine (which can be read to mean “implemented on a computer”) ultimately unsatisfying. If the use of a pencil and paper does not make a method “technological” or remove it from the realm of abstract mental process, it is increasingly unclear why the use of a computer should necessarily have that effect in today’s digitally savvy society where the use of a computer would often seem to be the modern equivalent of pencil and pen. Perhaps a dis-

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105. See, e.g., Allison & Tiller, *supra* note 11; Allison & Hunter, *supra* note 11; Hunter, III, *supra* note 11.

106. Thomas, *supra* note 9, at 1175; see also Sfekas, *supra* note 9. For an argument based on the distinction between “technological risk” and “market risk,” see Dratler, *supra* note 9, and Moy, *supra* note 9.

107. Pollack, *supra* note 9, at 81.

108. Collins, *Propertizing Thought*, *supra* note 9; Collins, *Claims to Information*, *supra* note 9.

inction based on whether the computer use requires something beyond using commonly available software could provide some guidance.

However successful this line-drawing exercise may ultimately be, it seems clear that it will leave a hole big enough to drive many a business method patent through. I thus focus here on a third sort of critique of business method patents, based on analyzing whether they promote inventive progress by providing the incentives to invent, disclose, and disseminate useful inventions, which are the primary rationales of patent law.<sup>109</sup> Commentators have argued that patents are unnecessary to provide incentives to invent business methods because business methods tend to have very low invention costs, such that non-patent appropriability mechanisms, including trade secrecy, first-mover advantages, network effects, and customer switching costs, will generally be sufficient to recoup the costs of inventing business methods even if competitors attempt to copy them. These critics have also argued that patenting business methods has particularly high social costs because these methods are instrumental to the competitive economy, and restricting their use broadly undermines efficient business practice and competition.<sup>110</sup> On a different note, critical commentators also argue that business methods are particularly unsusceptible to free riding because they tend to be tailored to the idiosyncrasies of particular businesses.<sup>111</sup>

These critiques have been balanced by incentive-type arguments in favor of business method patenting. Besides the routine argument that patent protection will increase the rewards of innovation and therefore bring forth more of it, commentators have also emphasized the potential for business methods to facilitate providing start-up companies with ideas for new business plans and to facilitate spin-offs from established companies to serve broader markets.<sup>112</sup>

The user innovation framework contributes to a nuanced analysis of incentives, which distinguishes between different categories of business methods. It does so by providing additional insight into the costs and benefits of business method innovation in different contexts. Most analyses of business method patenting have lumped together a variety of different kinds of business methods. The distinctions between user and seller innovation

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109. See, e.g., Dreyfuss, *supra* note 9; Maskus & Wong, *supra* note 9; Arora, *supra* note 9; Sfekas, *supra* note 9; Matthew G. Wells, *Internet Business Method Patent Policy*, 87 VA. L. REV. 729 (2001); Leo J. Raskind, *The State Street Bank Decision: The Bad Business of Unlimited Patent Protection for Methods of Doing Business*, 10 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 61 (1999); Grusd, *supra* note 9; Olson, *supra* note 9.

110. Arora, *supra* note 9, at 23.

111. See, e.g., Dreyfuss, *supra* note 9, at 275.

112. See, e.g., Smith, *supra* note 9; Greg S. Fine, *To Issue or Not to Issue: Analysis of the Business Method Patent Controversy on the Internet*, 42 B.C. L. REV. 1195 (2001); Kuester, *supra* note 9 (considering the incentive critiques and arguing primarily in favor of business method patenting).

and between self-disclosing and non-self-disclosing inventions are useful in understanding the different incentive conditions that may hold for different types of business methods.

## II. USER INNOVATION AND PATENT DOCTRINE

### A. What is User Innovation?

As I have discussed in greater detail elsewhere, it is useful in thinking about the incentives provided by the patent system to distinguish between “user” and “seller” innovators.<sup>113</sup> As the names suggest, user innovators are innovators who develop a new invention for their own use, either publicly or as a trade secret.<sup>114</sup> Chemical manufacturers who invent new manufacturing processes are user innovators, as are scientists who develop new research tools. In the business method context, an example of user innovation is a method of inventory control invented by a manufacturer. Seller innovators are innovators who develop a new invention with the intention of selling an embodiment of the invention.<sup>115</sup> A pharmaceutical company that invents a new drug is a seller innovator, as is a manufacturer who invents a better adjustable accelerator.<sup>116</sup> An example of a seller innovator in the business method context is a provider of databases for business use, such as Oracle.

The distinction between seller and user innovators is helpful in considering potential modifications to patent doctrine for at least two reasons. First, users and sellers appropriate benefits from their inventions in different ways and hence face different incentives to invent, disclose, and disseminate (or commercialize) their inventions with or without the availability of patent protection. This means, of course, that the incentives provided by patent protection affect them in different ways. Second, as has been demonstrated in work by Professor Eric von Hippel and others, users and sellers tend to make different kinds of inventions corresponding to their particular contexts of invention.<sup>117</sup> Users tend to make inventions that rely on “sticky” information gained through use and that serve their specific, heterogeneous, and often “cutting edge,” needs. Sellers, on the other hand, often make inventions that reflect technical expertise unavailable to most users, make products easier to manufacture, or aggregate information about the needs of large numbers of users.<sup>118</sup>

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113. Strandburg, *supra* note 13.

114. *Id.* at 9.

115. *Id.* at 12.

116. *KSR Int'l Co. v. Teleflex Inc.*, 127 S. Ct. 1727 (2007).

117. VON HIPPEL, *supra* note 12, and references therein.

118. *Id.*

As I have argued elsewhere, user innovators tend to be less likely than seller innovators to need patenting's incentive to invent.<sup>119</sup> They can often recoup their inventive costs through trade secrecy, through heightened first-mover advantages resulting either from the tailoring of their inventions to their particular needs or from their skill and know-how in employing them, or through intrinsic or reputational benefits from use.<sup>120</sup> Their costs, for the types of inventions that capitalize on their user expertise, also tend to be low, since they develop their inventive ideas as a side-effect of something they would be doing anyway—i.e., using the technology.

On the whole, the prevalence of user innovation in a particular field of technology should shift the focus of concern away from incentives to invent and toward questions of disclosure and dissemination. User innovators may be less motivated than seller innovators to disseminate their inventions. Whereas sellers by definition seek to get their inventions into customers' hands, users frequently either will not care one way or the other about whether others are able to use their inventions, or will be engaged in competitive use and thus affirmatively seek to prevent others from using their inventions. Where disclosure is concerned, user innovators are motivated in some cases to freely reveal their inventions so as to obtain reputational or intrinsic social benefits, but in other situations they will prefer to use their inventions secretly if they can.

A critical determinant of the incentives of both seller and user innovators will be the extent to which their inventions are “self-disclosing,” by which I mean that they are sold or used in a context in which others are able to copy them to sell or use.<sup>121</sup> In the business method context, an example of a self-disclosing-in-use invention would be the “shopping cart” method of dealing with online purchases.

In earlier work, I provided a general analysis of the incentives faced by seller innovators and user innovators, who recoup development costs through their own use of their inventions.<sup>122</sup> Applying that framework to the specific case of scientific research tool inventions,<sup>123</sup> I concluded that the prevalence of user innovators in that field, along with the social structure of the research community, suggested that, though there would be some trade-offs, incentives to invent, disclose, and disseminate research tools could be adequately protected in the face of a complete exemption from infringement

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119. Strandburg, *supra* note 13.

120. *Id.*

121. See Katherine J. Strandburg, *What Does the Public Get? Experimental Use and the Patent Bargain*, 2004 WIS. L. REV. 81, 107 (discussing the importance of the distinction between self-disclosing and non-self-disclosing inventions).

122. See Strandburg, *supra* note 13.

123. For general discussions of the issue of research tool inventions, see, for example, Strandburg, *supra* note 13, and references therein.

liability for research tool *use*, while preserving liability for infringing sales. In the next Part, I discuss the question of whether a use exemption might make sense for business method patents.

### III. A BUSINESS METHOD USE EXEMPTION?

In this Part, I will discuss the plausible potential effects of a business method use exemption for each of the categories of business methods discussed in Part I. The discussion is organized around the four contentions laid out in the Introduction. First, business method users and sellers are likely to make distinctive types of inventions, with user inventions more amenable to infringement by “use” and seller inventions more likely to be infringed by competing sales. Second, because of low inventive costs and high levels of non-patent appropriability, the level of business method innovation by users is likely to be quite high, even if there is a use exemption. Third, switching to trade secrecy rather than patenting is unlikely to be socially detrimental because of the limited value of the patent disclosure for these inventions and the high cost of delaying their dissemination for the full patent term. Fourth, patent exclusivity for business methods invented by users is likely to impose particularly high social costs since user innovators are often motivated to restrict dissemination of their inventions, rather than to disseminate them broadly at a somewhat supra-competitive price, as seller innovators seek to do. I expand upon the first of these contentions in Section A of this Part and then discuss the remaining three separately for each category of business methods in Sections B and C.

#### A. The Distinction between Seller and User Innovations and its Implications for a Use Exemption

It has generally gone without question that patent infringement liability should attach to making, using, or selling a patented invention.<sup>124</sup> Recognizing the distinctions between seller and user innovations suggests that it may be useful to rethink the reflexive equation of these activities. Users and sellers tend to make different types of inventions because of their different capability sets.<sup>125</sup> User innovators tend to invent things that exploit the knowledge and expertise that accompanies use, whereas seller innovators tend to invent things that require specialized expertise or equipment that users do not generally possess or that are relevant to manufacturing or standardization. For this reason, we may also expect that user inventions will tend to be relatively easily adopted by other users (who have similar skill sets) whereas seller inventions will tend to be (and arguably should tend to

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124. 35 U.S.C. § 271 (2005).

125. VON HIPPEL, *supra* note 12.

be) inventions that users would have a hard time adopting on their own and will thus generally choose to buy from a seller.

When users invent, they are generally not motivated by an intention to sell their inventions. They plan to use them, in some cases competitively, and their competitors (and potential infringers) tend to be other users. Similarly, seller innovators are primarily concerned with competition from other sellers, rather than about the possibility that potential buyers might decide to make and use the inventions on their own.<sup>126</sup> I am aware of no studies of business method inventions to determine whether these distinctions, which have been observed in other user-innovation contexts, hold in the business method context, but it seems plausible that they do.

To the extent this analysis holds true for business method inventions, we can think of the infringement statute as applying separately to user and seller inventions; seller inventions are generally infringed by making and selling, whereas user inventions are generally infringed by use. If this is right, then an exemption from liability for infringing use has nearly the same effect as simply denying patents for user innovations while allowing them for seller innovations.<sup>127</sup>

Would such an exemption make sense for business method patents? This exemption makes sense if we believe that, for a particular category of inventions, users have sufficient incentives to invent, disclose, and disseminate their inventions without patent protection, such that the social costs imposed by patent exclusivity are not worth bearing. In the next sections, I discuss the potential effects of a business method use exemption on various categories of business method inventions.

## B. Methods of Operation

Improvements in methods of operation range from “back office” bookkeeping methods to “customer service” methods of taking orders from consumers. These improvements serve two kinds of business purposes. First, they help businesses to compete with their direct competitors either by reducing operating costs or by attracting consumers by providing a more effective or efficient retail experience. This first sort of benefit relies on some kind of exclusivity, which can come from patents, trade secrets, or

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126. Of course, patenting makes it possible for seller innovators to gain exclusive rights in inventions that users could adopt themselves, such as many business methods. My point here is that the user innovation analysis brings into question the social desirability of such easily copied seller innovator business models. The analysis suggests that we perhaps can—and should—depend on user innovation to come up with such easily implemented inventions. A use exemption would channel seller innovations toward business method inventions that users would tend to purchase rather than implement directly themselves.

127. Or, more precisely, allowing patents for seller innovations that users are unlikely to invent and disallowing patents for user innovations that are cheap to adopt.

first-mover or skill-based advantages. Second, improved methods of operation may provide benefits that do not rely on exclusivity, but simply make an entire business area more profitable. To take “one-click” ordering as an example, Amazon.com might attract customers away from BarnesandNoble.com if it had exclusive rights to “one-click” ordering.<sup>128</sup> However, the ease of “one-click” ordering might also make the entire online book sale industry more profitable by drawing customers away from book stores or by inducing customers to spend more of their disposable income on books rather than on some other form of entertainment. This second type of benefit can even exhibit a degree of network effects, in which the benefits of having consumers perceive a particular type of business as efficient and cost-effective could exceed the advantage a company could obtain by keeping the invention to itself.<sup>129</sup> Where this second type of benefits is significant enough, a user innovator may prefer to freely reveal her inventions even if they could be kept secret.<sup>130</sup>

As has been pointed out by others, improved methods of operation will frequently be invented by users in the course of ordinary operations with minimal or no “R&D” expenditure and relatively low costs of implementation.<sup>131</sup> Of course, some methods of operation, particularly some of those implemented in software, no doubt are designed at substantial research and development cost. Sometimes businesses (especially larger firms) may undertake this kind of project in-house, but often technically complex solutions to common problems of operation are provided by seller innovators, such as software companies or business consulting firms. Such methods requiring expertise above and beyond that generally needed for

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128. *Amazon.com, Inc., v. Barnesandnoble.com, Inc.*, 239 F.3d 1343 (Fed. Cir. 2001).

129. For a discussion of the economics of network effects see Mark A. Lemley & David McGowan, *Legal Implications of Network Economic Effects*, 86 CAL. L. REV. 479 (1998).

130. See, e.g., VON HIPPEL, *supra* note 12 (providing a discussion of free revealing). See Katherine J. Strandburg, *Sharing Research Tools and Materials: Homo Scientificus and User Innovator Community Norms*, in *WORKING WITHIN THE BOUNDARIES OF INTELLECTUAL PROPERTY* (Rochell C. Dreyfuss et al. eds., forthcoming 2008); Robert P. Merges, *From Medieval Guilds to Open Source Software: Informal Norms, Appropriability Institutions, and Innovation* (Working Paper 2004), available at [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=661543](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=661543); Peter B. Meyer, *Episodes of Collective Invention* (U.S. Department of Labor Office of Productivity and Technology, BLS Working Paper 368, 2003), available at <http://www.bls.gov/ore/pdf/ec030050.pdf> (discussing free revealing and information sharing among innovators). In the specific context of financial innovations, see Kumar, *supra* note 35 (discussing the importance of growing the market, etc., for financial innovations); Lerner, *supra* note 9 (discussing collaboration in financial innovation without patenting); and Merges, *Uninvited Guest*, *supra* note 9 (discussing collaboration in financial innovation without patenting).

131. See, e.g., Dreyfuss, *supra* note 9.

running the business are also likely to be difficult for most users to reproduce inexpensively.

Thus, it seems plausible that the main impact of an exemption for use of business methods of the operational type would be on user innovators, since seller innovators, who make inventions that require substantial investment, would be protected by liability for infringing sales. What effects of such an exemption might we expect? To answer this question, it is useful to consider “back office” methods and customer service methods of operation separately, as I do in the following Subsections.

1. *“Back Office” Methods and a Business Method Use Exemption*

Back office methods tend to have several characteristics relevant to assessing the likely impact of a business method use exemption. First, they are generally non-self-disclosing, meaning that user innovators would have the option of protecting the inventions using trade secrecy if a use exemption were imposed. Since these methods will often provide a competitive advantage, users frequently can be expected to choose whatever form of intellectual property protection gives them the most extensive degree of exclusivity, whether that is trade secrecy or patenting. In some cases, however, user innovators might choose to freely reveal such inventions, especially if there is a use exemption, to take advantage of network-type effects. Second, back office methods will often pertain to general problems of business operation dealing with accounting, handling of inventory, etc., which may arise in many business contexts. Such methods will generally improve efficiency and lower costs so that it would be socially desirable to have them widely used and socially undesirable, even if privately beneficial, to confine their use to their inventors for long periods of time.

In light of these characteristics, what impact is a use exemption likely to have on the invention, disclosure, and dissemination of these methods? Because they can be maintained as trade secrets, the impact on incentives to invent this type of business method improvement should be relatively minimal. First, there may be some valuable business methods that can be maintained as trade secrets for longer than the patent term. A use exemption will have no impact on these inventions, which would not be patented in any case because it is privately preferable to maintain them as trade secrets. It seems unlikely that there would be many such inventions in the back office context, however, given the likelihood that other users, facing similar issues, will independently make equivalent inventions within the twenty-year patent term. Far more common, it would seem, will be back office methods for which trade secrecy provides less appropriability than

patent law's twenty-year term.<sup>132</sup> Even though trade secrecy likely offers a shorter term of exclusivity than patenting in these cases, the relatively low cost of most business method user inventions means that trade secrecy will be enough to incentivize substantial innovation. The exchange of patenting for trade secrecy in the case of back office user innovations will decrease incentives to invent only at the margins.

The more important questions for back office inventions concern disclosure and dissemination. One might initially expect the move to trade secrecy and away from patent protection to result in decreased disclosure and dissemination of these inventions—inventions, which I have just argued need to be widely disseminated for maximum social benefit. Seller innovators, whether protecting their inventions with trade secrecy or patenting, seek to disseminate embodiments of their inventions widely. (While Coca-Cola does not want you to know its famous trade secret formula, it certainly does its best to be sure that everyone has the opportunity to drink Coke.) This is not the case for competitive user innovators, who would prefer that others neither know how to implement nor use their inventions.

To understand the effects that increased reliance on trade secrecy will have on disclosure and dissemination, a careful analysis is necessary. Trade secrecy effectively ties disclosure and dissemination together because it permits reverse-engineering and independent invention. When an invention is reverse-engineered or independently invented, it becomes known to others (disclosed) at the same time that it becomes available to others to use (disseminated). Patenting is different, however. Where an inventor seeks to use an invention exclusively rather than to sell embodiments of it, patenting not only raises consumer prices during the patent term, but also separates disclosure (which occurs at the time the patent or application is published) from dissemination (which occurs only when the patent expires at the end of its twenty-year term).

Thus, the social question in cases where a decrease in patent protection drives inventors toward trade secrecy is whether the social benefits of patenting's earlier disclosure outweigh the costs of later dissemination. This is another empirical question that cannot be answered definitively here, but I think it is quite plausible that trade secrecy is socially preferable on the whole for back office business methods. When they are created by user innovators, such methods seem likely to be independently re-invented by other users (ending trade secrecy) long before the end of the patent term. If that is the case, trade secrecy will delay disclosure only slightly while advancing dissemination substantially. The considerably earlier dissemination of the invention will often more than make up for the relatively small delay

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132. This seems especially likely because of the potential for relatively vague business method patent claims to be interpreted to cover downstream inventions rather far from the user innovator's actual implementation.

in disclosure in these cases. Dissemination of back office business methods is often quite valuable because these methods may have general-purpose uses, whereas disclosure in and of itself may be considerably less valuable if user follow-on improvements are likely to be inspired by experience *using* the invention, rather than by merely thinking about it (or even “experimenting on” it in a laboratory setting). The value of patent disclosure also depends on the costs of searching the patent archives, which may be quite high when compared to independent invention if patent claims are vague and relevant patents are scattered in different PTO categories, a situation which arguably pertains to business method patents.<sup>133</sup>

At some point, a user’s investments in improving back office methods might become high enough that the distinction between seller and user innovation would break down. If trade secrecy and exclusive use are not sufficient to incentivize users to make such inventions, seller innovators can pick up some of the slack, since such expensive business method innovations are probably not going to be ones that can be duplicated at little expense by other users. Indeed, any R&D-intensive “user” innovations will probably be invented by large firms that have imported the kinds of technical expertise (such as programming skills) that ordinarily would be associated with seller innovators.

Putting the above analysis together, it seems plausible that a use exemption for back office business methods would be socially advantageous. However, one might wonder whether this argument “proves too much.” Does it apply equally well to traditional industrial process inventions, which are also user innovations? The answer is probably no in most cases. Industrial processes are less likely to be widely applicable than back office business methods, meaning that the social costs of exclusive use are probably less. If a process is tightly tailored to a particular product, the social cost of its exclusive use is no higher than the social cost of a traditional product patent. Moreover, the R&D costs of improvements to industrial processes are probably higher on average than the costs of improvements to business methods, and the trade secrecy term may tend to be longer, increasing the social benefits of patenting’s earlier disclosure and decreasing the benefits of trade secrecy’s earlier dissemination of the invention. Thus, the argument in favor of a use exemption here is specific to business method inventions.

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133. See JAMES BESSEN & MICHAEL J. MEURER, *PATENT FAILURE: HOW JUDGES, BUREAUCRATS, AND LAWYERS PUT INNOVATORS AT RISK* (2008) (discussing the ill-defined boundaries of software and business method patent claims).

## 2. *Customer Service Methods of Operation and a Use Exemption*

Customer service methods of operation are those that affect a customer's experience in dealing with a business, but do not change the character of the purchase itself. The online "shopping cart" is a good example of a customer service method. For our purposes, the most important distinction between a customer service method and a back office method is that the customer service method is self-disclosing, meaning that, because it involves interaction with customers, it cannot be kept secret from competing users.<sup>134</sup> This means that trade secrecy is not possible for these types of business methods. If competing users were excused from patent infringement liability, user innovators of customer service methods would have to rely on first-mover advantages,<sup>135</sup> reputational and skill-based benefits, and any benefits that do not depend on exclusive use.

A use exemption would thus diminish incentives to invent self-disclosing inventions somewhat. Nonetheless, customer service inventions of this kind have been commonly made without the impetus of patent protection for hundreds, if not thousands, of years. Arguably, user innovation is fundamental to understanding why this would be the case. User innovation of customer service methods is generally very inexpensive because the ideas for these inventions arise as a side effect of conducting business in the ordinary course, rather than as a result of a research and development project. Thus, a relatively small first-mover advantage or other non-patent appropriability mechanism is enough to cover the investment. The fact that many of these methods are now coded in software does not change this basic observation. Since competitors cannot copy the software itself, the cost of coding is not relevant to the free rider story. But it seems likely that in many, if not most, of these cases, the cost of programming is the primary cost of developing the customer service method, while the costs of inventing the method itself remain nominal.

No doubt a use exemption would dampen incentives at the margin to invent some customer service inventions—those that were substantially more expensive to invent than to implement. However, as discussed in the context of back office methods, the social cost of exclusivity is also high for customer service methods, many of which are broadly useful. It again seems plausible that the depression of user incentives to invent would be

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134. A bright line between back office methods and customer service methods cannot—and need not for our purposes—be drawn. Many business method inventions may involve processes that are partly visible to customers (and competitors). The main practical distinction is whether trade secrecy is an available means of exclusivity.

135. Since many of these inventions are computer implemented, copyright protection for the underlying software implementing many of these inventions contributes to the lead-time.

outweighed by the advantages of low transaction costs and broad dissemination of those methods that were invented.

To conclude, the above analysis makes at least a plausible case for an infringement exemption for “use as a method of doing business” for both back office and customer service methods of operation. Empirical studies of user and seller invention of methods of operating a business would be valuable to confirm (or undermine) this plausibility argument.

### C. Methods of Providing a Product or Service

The second major category of business methods encompasses methods of providing a product or service. This category includes two subcategories corresponding roughly to categories (1)(b) and (2) of the BMPIA discussed in Part I. The first subcategory includes methods of providing traditional services, such as legal services or house painting. It also might include methods of providing traditional services online, such as online teaching or medical advice. The second subcategory encompasses intangible “products” and methods of providing or constructing them. Examples of these include financial “products,” such as the canonical Hub and Spoke mutual fund of *State Street Bank*.<sup>136</sup> This category also includes various online business models that effectively provide distinct products or services, such as iTunes or Google.

A definitional question arises at the outset. Are these inventions “user innovations” (when the process is performed by the person who invented it) or “seller innovations” because they affect the characteristics or quality of the product or service the customer is purchasing? Perhaps surprisingly, theoretical and empirical investigations of user innovation have not yet focused on services, so the general question of distinctions between “user-type” and “seller-type” innovation in services has yet to be addressed thoroughly.

The form of the patent claims clearly cannot be the controlling factor. Microsoft is a seller innovator of its operating system, whether or not it claims its software as a method. Similarly, the sellers of financial innovations like the Hub and Spoke mutual fund of *State Street Bank* seem intuitively like product sellers, even though their innovations may be claimed as data processing *methods*. The intuition is less clear with traditional services and new online businesses, however. Is a surgeon a user or a seller of a particular surgical method? She would seem to be a user, but her patients may receive a qualitatively different “surgery” than those of other surgeons.

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

Similarly, is Netflix a new product or a new method of providing video rental services?

Rather than try to answer the question of whether these types of inventions are “user innovations” or “seller innovations” in the abstract, for the present purpose of whether to propose their inclusion in a business method use exemption, it is more helpful to consider the factors discussed above that are relevant to the desirability of a use exemption and to see whether those factors support exempting use of these methods from infringement liability. To recap, the relevant considerations are

- (1) User innovators tend to have low invention costs because their inventions stem from ideas and information obtained as a side effect of use, and high non-patent benefits because they recoup their investments by using their inventions and may obtain reputational and other benefits from their use.
- (2) Where trade secrecy is possible, it tends to be socially preferable to patenting for user inventions because user innovators are more likely than seller innovators to restrict dissemination of their inventions during the patent term. Moreover, disclosure is less valuable if follow-on invention tends to arise out of use rather than experimentation.
- (3) User innovators prefer to restrict dissemination of their inventions and use them exclusively. Use exemptions may be justified where this restricted dissemination has particularly high social costs compared, for example, to the social costs of a patent on a typical product innovation.

#### *1. Methods of Providing Personal and Professional Services*

Considering these factors, it seems that methods of performing personal and professional services, such as legal services, tax planning, house painting, and massage services, should be subject to a use exemption. Like user innovations more generally, methods of providing personal services are often inexpensively developed as a side effect of performing the service. Providers can arguably recoup their investments through reputational benefits and through first-mover advantages associated with skill, so that the level of innovation may be expected to be substantial even without patent protection.

These inventions are often self-disclosing, such that a use exemption will not drive inventors to trade secrecy. When these inventions are non-self-disclosing, such as when they are performed out of the sight of competitors, trade secrecy is likely to be socially preferable to patenting for reasons similar to those advanced above in discussing back office methods. The trade secrecy “term” is likely to be short in relation to the patent term,

and the delay in disclosure is likely to be outweighed by gains from earlier dissemination of these methods.

Moreover, rarely can these service innovators serve the entire market, so the social cost of permitting them exclusive use of their inventions is likely to be high. To the extent that their inventions are difficult for other providers to copy because they require know-how or skill to implement them well, these inventors can function as seller innovators, recouping their investments by selling training classes or manuals, and by franchising their trademarks.

Exempting use of methods of providing personal and professional services from infringement liability would also be consistent with the *Comiskey* approach of finding particular business method inventions unpatentable as involving abstract ideas. That is because these methods can be performed by humans without either a physical transformation or an association with a particular machine. The use exemption could be broader in some respects, however, since it would not depend on whether the claimed steps of the method involved a computer or physical transformation. The method of diagnosing a vitamin deficiency using any assay claimed in *Lab-Corp* would almost certainly be exempted as a method of providing a service, whereas it is not entirely clear how it would fare under the *Comiskey* test.

## 2. Intangible “Products”

This leaves the question of how to treat patents on intangible “products,” such as the Hub and Spoke mutual fund in *State Street Bank*, which are claimed as data processing *methods*, but facilitate the offering of what are intuitively new *products* from the consumer perspective.<sup>137</sup> Considering the three factors relevant to determining when a use exemption is desirable<sup>138</sup> suggests that these processes, like industrial manufacturing processes, should not be subject to a use exemption.

First, these inventions do not seem likely to arise as side effects of use. Developing such an invention would seem to be a separate effort, more like inventing a traditional product.<sup>139</sup> The level of investment required will probably vary with the technical complexity of the “product,” an important variation that should be reflected in the nonobviousness standard but is not

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137. Note that asking whether to include such patents within the scope of a business method use exemption is different from asking whether such an invention is obvious or whether the level of ordinary skill in the art is such that the nonobviousness threshold should be high or low.

138. See *supra* Section III.B.

139. But see Schroth & Herrera, *supra* note 9 (discussing the availability of first-mover advantages for financial derivative innovations because of the advantage of experience-based information about customer needs).

due to invention as a byproduct of use.<sup>140</sup> Because there is no *a priori* reason to expect low development costs or especially effective non-patent appropriation of value, trade secrecy may or may not be socially preferable to patent protection in these cases.

Additionally, the inventors of processes closely tied to producing intangible products tend to recoup their investments, like the inventors of industrial processes, by selling the associated financial products, rather than through exclusive use of the process per se or through associated reputational or skill-based benefits. Thus, because these inventors will seek to disseminate the products widely, the social costs of exclusive use of these processes will not necessarily be especially high. As with products produced by commercial processes, the inventors have incentives to disseminate these financial and other intangible products widely, and they seem as capable of doing so as sellers of patented products. These are not general purpose business methods, nor are they services provided on an individual basis, like personal or professional services.

In sum, the above arguments plausibly support an exemption for infringing use of a method of performing a personal or professional service, but not for use of processes involved in providing intangible “products,” such as new types of financial products, iTunes, or Google. They also help us to understand how to categorize some more borderline cases that might arise. A method of performing surgery should be subject to the use exemption, as already discussed, but what about a patent on a process for operating a website that provides access to medical information? Is this an “intangible product” or a method of providing medical advice? The analysis here would suggest treating this patent as pertaining to an intangible product. While the costs of inventing the idea of such a website (as opposed to the costs of implementation that would be common to inventors and second-comers) might be relatively low, the idea is not a side effect of use. Nor is patent exclusivity exceptionally costly in this kind of case—the benefits of the website invention are available to anyone with an internet connection. The patentability of such an invention is best addressed by the nonobviousness requirement. Depending on the details, the medical website patent claims might be (and probably would be) an obvious transfer to the internet of the prior art concept of a home medical reference book, or they might be invalid for some other reason, but the invalidity in this case seems to be unrelated to whether the claimed invention is a “method of doing business.”

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140. See, e.g., Merges, *Uninvited Guest*, *supra* note 9, at 9 (citing empirical studies finding that innovation for new financial products is relatively costly, ranging from \$50,000 to \$5 million).

## CONCLUSION

To conclude, the user innovation paradigm provides an organizing principle for some of the arguments that have been made about whether business methods should be patentable subject matter. It suggests reasons specific to the types of business methods that one would expect users to develop that an exemption from liability for “use as a method of doing business” might be justified. Such an exemption would leave room for seller innovation, which may be increasingly important as business methods become more complex and are more often implemented in software.

A use exemption is justified when four conditions tend to hold: (1) seller innovators and user innovators tend to make distinct types of inventions, such that a use exemption has its primary impact on inventions that users will tend to invent; (2) invention is inexpensive because inventive ideas are a natural byproduct of use, and non-patent appropriability mechanisms are effective in part because of characteristics of user innovations; (3) trade secrecy, where available, does not tend to be socially detrimental when compared to patenting because the social loss associated with later disclosure is outweighed by earlier availability of the invention for others to use; and (4) the exclusive use permitted by patenting has a high social cost.

I have argued that these conditions plausibly hold for methods of business operation, whether back-office- or customer-service-related, and for methods of performing personal and professional services. Considering these factors also explains why some of what have been lumped together as “business method” inventions are not appropriate candidates for a use exemption and should be treated as intangible products. Empirical investigation of business methods from a user innovation perspective would be very valuable to confirm or undercut these plausibility arguments.

Whether it would be worth trying to implement a business method use exemption—and to make the distinction between methods of doing business and methods of producing intangible products—as a practical matter is an open question. If patentable subject matter doctrine evolves to invalidate most patents on methods of providing services for other doctrinal reasons, such as the unpatentability of abstract ideas, then it would be sufficient, and easier, to implement an exemption for use of a patented invention as a “method of business operation.” Whichever line one were to try to draw—between business methods and methods of producing intangible products, or between methods of operating a business and anything else—there would no doubt be ambiguities. However, because these lines relate intuitively to the experience of factfinders in their experience as consumers and would be drawn, not in a vacuum, but in the context of a particular case of infringement, it seems possible that a workable and socially beneficial exemption could be implemented.