

# The *State Street Bank* Decision: The Bad Business of Unlimited Patent Protection for Methods of Doing Business

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## INTRODUCTION

The Federal Circuit's recent endorsement of patent protection for methods of doing business marks so sweeping a departure from precedent as to invite a search for its justification.<sup>1</sup> Unfortunately, this quest cannot usefully begin with a review of the prior precedents, for a coherent analysis of the denial of patent protection for business methods—the so-called “business method exception”—was not developed in the earlier cases. Those courts essentially rested their denials of claims for business method patents on the *ipse dixit* that patent protection was limited to technology, i.e., to tangible things and to physical procedures. Business method claims were treated as falling below the threshold of statutory subject matter. Some of those claims were rejected on traditional grounds of lack of novelty and non-obviousness, although many opinions recited the business method exception.<sup>2</sup>

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1. *State Street Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998), *cert. denied*, 119 S. Ct. 851 (1999).

2. *See, e.g., Hotel Security Checking Co. v. Lorraine Co.*, 160 F. 467 (2d Cir. 1908) (stating dictum that a method of doing business is ineligible for patent protection). After *Hotel Security*, however, two patents on business methods were upheld in terms of the physical structure implementing the method. *See Rand, McNally & Co. v. Exchange*

The Federal Circuit has now flatly rejected the business method exception.<sup>3</sup> However, the recent decision which announced this startling conclusion provides neither explanation, limitation, nor rationale.<sup>4</sup> What is clear and unqualified is that business methods are now statutory subject matter in full parity with other innovative activity.<sup>5</sup> As Judge Rich put it:

*We take this opportunity to lay this ill-conceived exception to rest. Since its inception, the “business method” exception has merely represented the application of some general, but no longer applicable legal principal. . . . Since the 1952 Patent Act, business methods have been, and should have been, subject to the same legal requirements for patentability as applied to any other process or method.*<sup>6</sup>

Whether the prior doctrine was ill-conceived and whether there are public interest or economic policy foundations for now extending patent protection to business methods is the topic of this paper.

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Scrip-Book Co. 187 F. 984 (7th Cir. 1911) (holding a coupon book of travel units patentable); Cincinnati Traction Co. v. Pope, 210 F. 443 (6th Cir. 1913) (holding a railroad coupon book with detachable parts patentable); *In re Sterling*, 70 F.2d 910 (C.C.P.A. 1934) (denying protection to “an ingenious and convenient arrangement” to transfer funds as lacking the requisite “physical structure”); *In re Wait*, 73 F.2d 982 (C.C.P.A. 1934) (holding a process of communicating contract terms and recording their acceptance held unpatentable.); *In re Patton*, 127 F.2d 324 (C.C.P.A. 1942) (denying a patent for a fire-protection system); *Loew’s Drive-In Theaters, Inc. v. Park-In Theaters, Inc.*, 174 F.2d 547 (1st Cir. 1949) (holding unpatentable a scheme for parking automobiles in an open lot); *Ex parte Murray*, 9 U.S.P.Q. 2d (BNA) 1819 (Bd. Pat. App. 1988) (holding an accounting analysis of expenses held an unpatentable method of doing business); *In re Schrader*, 22 F.3d 290,296 (Fed. Cir. 1994) (Newman, J., dissenting) (rejecting patent for a method of competitive bidding on many items). However, a patent was issued on a financial service method of combining a margin brokerage account with money market funds and a checking/charge account in *Paine, Webber, Jackson & Curtis, Inc. v. Merrill Lynch, Pierce, Fenner & Smith, Inc.*, 546 F. Supp. 1358 (D.Del. 1983). The leading treatises also recognize the business method exception. See D.S. CHISUM, 1 PATENTS § 1.03[5] & § 1.02 [4] (1998) (noting that the “printed matter” exception had served as an alternative ground of denial of business method patents); See also, *Lewis v. Pennsylvania Steel Co.*, 59 F. 129 (3d Cir. 1893); Louis Koutoulakos, Note, *The Patentability of Printed Matter: A Critique and Proposal*, 18 GEO. WASH. L. REV. 475 (1950); P.D. ROSENBERG, PATENT LAW FUNDAMENTALS § 6.02[3][b] (2d ed. 1997).

3. See *State Street Bank*, 149 F.3d at 1374.

4. *Id.*

5. *Id.*

6. *Id.* at 1375 (emphasis added).

Other papers in this Symposium will probe the reasoning and use of precedent in the *State Street Bank* opinion, the requisite adjustments in interpretation of the Patent Statute to implement this directive, the possibility of legislative implementation, and role of the Patent Office in administering this new protection for business methods.<sup>7</sup>

This paper addresses the justification of patent protection for methods of doing business by posing two questions. First, what guidance, if any, does economic analysis offer to support the new rule on the patentability of business methods? Second, how does this extension of proprietary rights directly to marketplace practices affect competition? This latter inquiry, in turn, requires some consideration of the traditional interface between patent rights and the antitrust laws.<sup>8</sup> Although the opinion in the *State Street Bank* case makes no mention of the competitive impact of this new extension of protectible subject matter, there is a settled line of case law subjecting patent licensing practices to judicial scrutiny under the doctrine of patent misuse.<sup>9</sup>

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7. The Patent Office has hired new examiners with Business School training to process the rising volume of business method patents. *A "Boom" in Business Method Patent Filings Has Followed State Street Banking Ruling, PTO Says*, ELEC. COMMERCE & L. REP. (BNA) 1393 (Dec. 16, 1998); *see also, infra* text accompanying notes 12-14.

8. The impact of patent protection on competition has traditionally subjected patent licensing and related practices to antitrust scrutiny. Justice Black noted, "The grant of a patent is the grant of a statutory monopoly. . . ." *Sears Roebuck & Co. v. Stiffel Co.*, 376 U.S. 225, 229 (1964). Recently the antitrust enforcement agencies have noted the potential for patent practices to generate impediments to competition as follows: "Intellectual property law. . . [patents, copyrights, trademarks, and trade secret law] bestows on the owners. . . certain rights to exclude others. . . . [A]s with other forms of private property, certain types of conduct with respect to intellectual property may have anticompetitive effects against which the antitrust laws can and do protect.

*Antitrust Guidelines for the Licensing of Intellectual Property*, 68 ANTITRUST & TRADE REG. REP. 1708 at S-3 (April 13, 1995).

9. *Adams v. Burke*, 84 U.S. (17 Wall.) 453 (1873) (finding patent misuse for patentee to impose territorial limits); *Motion Pictures Patents Co. v. Universal Film Mfg. Co.*, 243 U.S. 502 (1917) (finding patent misuse to tie purchase of an unpatented product to patent use); *see also* *Morton Salt Co. v. G.S. Suppiger Co.*, 314 U.S. 488 (1942) (recognizing patent misuse as a valid defense against a patent infringement claim). Misuse has also been extended to copyrighted material. *See* *Bobbs-Merrill Co. v. Straus*, 210 U.S. 339 (1908) (finding it misuse to set minimum resale price); *Lasercomb Am., Inc. v. Reynolds*, 911 F.2d 970 (4th Cir. 1990) (holding anticompetitive license clauses to be misuse). *See also* Ramsey Hanna, Note, *Misusing Antitrust: The Search for Functional*

These questions are addressed initially by reviewing the economic analysis of the role and function of patents as a possible economic footing for the grant of patent protection to methods of doing business. To state the conclusion in advance of an offer of proof, the economic analysis of patent protection does not support the extension of patent protection to methods of doing business. Both economic theory and empirical studies of patent-intensive industries cast doubt on the premise that patent protection of business methods is required either as an incentive for innovation or as an ingredient of the efficient diffusion of business methods in the economy. Indeed, there is a case to be made against such extension of patent protection. Recent examples in the current boom in such claims suggest the need for caution and restraint on the part of both the PTO and courts. For example, Patent No. 5,761,857 was recently issued to two architects for their configuration of residential housing.<sup>10</sup> In place of a traditional hallway connecting the several rooms and apartments, these patentees applied staircases external to the structure.<sup>11</sup>

While architectural design does not readily leap to mind as an example of a method of doing business, this patent does raise the question of definition. On what ground should it be excluded from the characterization as a business method? Like the business method cases decided under the exception prior to *State Street Bank*, the design of a structure could be characterized as the delivery of a method of organizing space.<sup>12</sup> Similarly, Henry Ford's assembly line method of organizing production might also be characterized as a method of doing the business of automobile production.<sup>13</sup> Aside from the definitional question inherent in pat-

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*Copyright Misuse Standards*, 46 STAN. L. REV. 401 (1994); Scott A. Miskimon, Note, *Divorcing Public Policy from Economic Reality: The Fourth Circuit's Copyright Misuse Doctrine in Lasercomb America Inc. v. Reynolds*, 69 N.C.L. REV. 1672 (1991); Note, *Clarifying the Copyright Misuse Defense: The Role of Antitrust Standards and First Amendment Values*, 109 HARV. L. REV. 1289 (1991); but see, Mark A. Lemley, Comment, *The Economic Irrationality of the Patent Misuse Doctrine*, 78 CAL. L. REV. 1599 (1990).

10. See Teresa Riordan, *Architects Debate Concepts Behind Housing Design*, N.Y. TIMES, July 19, 1999, at C11.

11. *Id.*

12. See *Loew's Drive-In Theaters, Inc. v. Park-In Theaters, Inc.*, 174 F.2d 547 (1st Cir. 1949).

13. JAMES P. WOMACK ET AL., *THE MACHINE THAT CHANGED THE WORLD* (1990)

enting business methods, this patent shares with patent claims to methods of retailing and distributing goods and services, the problem of locating the prior art. Like many commercial practices, some architectural features have their roots in antiquity—in the Great Pyramids, the Roman Aqueducts, and the Parthenon—for example. Doubtless, it was this and related issues of the scope of patent protection that led a trade association involved with architects to the reaction described in the newspaper account of this patent, which states, “These patents (sic) have raised concerns among builders and architects. The National Association of Home Builders, for example, has established a task force to address the question of architectural patents.”<sup>14</sup> Patent 857 underscores also the potential for over-inclusive patent protection.<sup>15</sup>

Comparison with the Copyright Act illustrates this point for, in addition to patent protection, architectural designs may be protected by copyright. Unlike the patent statute, the Copyright Act expressly limits the scope of copyright protection of architectural works to the creative elements that meet the copyright standard of “originality.”<sup>16</sup> Accordingly, the Copyright Act limits the scope of protection of architectural works to “overall form as well as the arrangement and composition of spaces and elements in the design, but *does not include individual standard features.*”<sup>17</sup> It is likely that the task force convened by the National Association of Homebuilders will express their concern over the use of standard features.

Another recent patent, No. 5,926,796, which most persons would consider to describe a business method, poses kindred questions.<sup>18</sup> This latter patent has been issued for a computerized

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(recounting improvements in assembly line production of automobiles made in Japan).

14. See Riordan, *supra* note 10 at C11.

15. See *id.*

16. 17 U.S.C. § 102(a)(1994) (emphasis added); Feist Publications, Inc. v. Rural Tel. Serv. Co., 499 U.S. 340 (1991) (stating the Constitutional basis of the originality requirement).

17. 17 U.S.C. § 101 (1994) (emphasis added); For a discussion of the relative flexibility of copyright protection in contrast to patent protection, see Richard H. Stern, *Scope-of-Protection Problems with Patents and Copyrights on Methods of Doing Business*, 10 FORDHAM INTELL. PROP. MEDIA & ENT. L.J. 105 (1999).

18. Sabra Chartrand, *An Internet Entrepreneur Finds a Way for Newsstand Dealers*

method of subscribing to a magazine at a retail outlet.<sup>19</sup> Instead of directly dealing with a magazine publisher by mail to obtain the lower subscription price, the magazine buyer-subscriber approaches a retail vendor who contacts the publisher electronically and arranges for the lower subscription price.<sup>20</sup> This method enables the buyer immediately to obtain the lower subscription price on a single-issue purchase at the point of the retail sale and gives the retail vendor a fee for facilitating the transaction. Each of these patents pose basic issues of patent law, such as identifying the prior art and specifying the non-obvious advance entitled to protection.

In this patent, finding the non-obvious, inventive step becomes troublesome. The patent, as described in the news article, comes within the *State Street Bank* rubric if the vendor's communications with publishers is accomplished by means of a computer program.<sup>21</sup> Suppose, however, it involves a telephone call. Does the analysis of *State Street Bank* grant patent protection to a telephone call, which achieves a useful result? In both circumstances, patents are thrust into a vibrant, established process of competitive commercial rivalry, a process that has traditionally been governed by emulation and by customary practices.<sup>22</sup> An added perverse result of this intrusion is the incentive for some entrepreneurs to become collectors of patent royalties, rather than to continue as active par-

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to *Profit from Subscription Sales*, N.Y. TIMES, July 26, 1999, at C8.

19. *Id.*

20. *Id.*

21. *Id.*

22. One economist has characterized this process of close emulation of existing products and services in manufacturing and marketing, as follows:

The general rule for any new manufacturer coming into an industry is to make your products as like the existing products as you can. . . . It explains why all automobiles are so much alike. . . . It explains the importance of brand names in commercial. . . life, for the best way of making a product as much like other products as possible. . . is to make it physically similar to the others but to *call* it something different and to try to build up by advertising a preference in the mind of the buyer for the *name* of the product.

KENNETH BOULDING, *ECONOMIC ANALYSIS*, 601 (1941). For a formal development of the economic theory of this process, entitled product differentiation, see Edward H. Chamberlin, *THE THEORY OF MONOPOLISTIC COMPETITION*, ch. 1 (5th ed.) (1946); Willard F. Mueller, *Sources of Monopoly Power: A Phenomenon Called 'Product Differentiation,'* 18 AMER. U. L. REV. 1 (1968).

ticipants in the marketplace.<sup>23</sup> If the boom in business method patents continues at its accelerating pace, the so-called superhighway of electronic commerce could be partially converted into a toll road.

### I. SKETCHING AN ECONOMIC MODEL

A historical review of the patent system discloses the dual attributes of the patent that continue to dominate its economic analysis.<sup>24</sup> From its early uses, the patent offered both an incentive and a reward for creative activity, as well as serving as a grant of some power (monopoly) in the marketplace.<sup>25</sup> Although the origin of patents can be traced to a Fifteenth Century Act of the Venetian Senate, they attained wide use in England early in the Seventeenth Century during the reign of James I.<sup>26</sup> There, the patent served frequently as a grant to a favored courtier, rather than as a royal recognition of creative activity.<sup>27</sup> Patents were granted to court favorites for a wide variety of activities including among others, the exclusive proprietary rights to manufacture playing cards as well as the exclusive rights to the running of an alehouse.<sup>28</sup> Parliament responded to the perceived abuses of these grants with the enactment of the Statute of Monopolies, which restricted the

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23. The newspaper article describing the architectural patent goes on to recite that the patentees had licensed their patent to developers and were collecting royalties. This reported fact suggests that these architects no longer derive their total revenue from the practice of architecture, but are now, in part, functioning as licensors of their patents. This news article further states: “[The Patentee] said his firm had licensed the patents to major developers in six states, and had settled out of court with companies he and his partner have charged with infringing. . . . ‘When we believe someone has infringed on our patents, we will take due course,’ he said.” Riordan, *supra* note 10.

The news article on the magazine subscription patent states that the patentee had obtained a dozen business method patents for such activities, among others, as figuring foreign exchange insurance premiums, post-paid travelers checks, and a method of playing lotteries. The article further recites that the principal patentee is known best for a patent on buying airline tickets on the internet. The news story states: “[The patent recites] a ‘reverse auction’ technique that enables consumers to name their own price for airline tickets—which airlines can choose to accept or not. . . . [This patent grants]. . . . exclusive rights to that particular form of electronic sales.” Chartrand, *supra* note 18 at C8.

24. Frank D. Prager, *A History of Intellectual Property from 1545 to 1787*, 26 J. PATENT OFF. SOC’Y 711 (1944).

25. *Id.*

26. *Id.*

27. *Id.*

28. ROBERT P. MERGES, *PATENT LAW & POLICY* 153 (2d. ed. 1997).

ment of the Statute of Monopolies, which restricted the duration of the privilege, while noting also the injury to competition inherent in the exercise of patent rights.<sup>29</sup> Subsequent economic analysis of patents continues to address these two attributes of the patent: the incentive/reward for creative activity and the impediment to competition.<sup>30</sup>

Patent grants burgeoned in the years following the Industrial Revolution. By the mid-Twentieth Century the patent as a factor in industrial expansion had become the subject of study by economists.<sup>31</sup> A cursory review of the extensive economic literature on the theory and function of patents provides a useful introduction to the present inquiry. This literature, some of which is devoted to detailed studies of specific patents as practiced in given industries, provides a reference point from which patent protection for business methods can be assessed. In contemporary economic analysis, patents are characterized as an ancillary factor in the development of technology; it is the application of technology that is deemed the primary factor in economic growth.<sup>32</sup>

The middle of the Twentieth Century marks the beginning of the intensive study of the patent as a factor inducing the research

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29. Statute of Monopolies, 21 Jam. 1, ch.3, § 5 (1623) (Eng.). Sec. 5 provided in part, that the use of the patent “be not contrary to law, nor mischievous to the State, by raising the price of commodities. . . or hurt of trade, or generally inconvenient. . .” *Id.* The abuses leading to the enactment of the Statute of Monopolies have been described as follows: “unscrupulous courtiers persuaded. . . [the Crown] to give them monopolistic rights even over industries already established. The gravest kinds of abuses immediately arose. . . . The persons securing the monopoly of salt at once raised the price from 16 pence to 14 shillings.” Franklin D. Jones, *Historical Development of the Law of Business Competition*, 35 YALE L.J. 905, 930 (1926).

30. Patents, which give the inventor of a new product an exclusive right to sell it, have both desirable and undesirable effects. The chief benefit is that the possibility of monopoly profits encourages more inventive activity. The chief disadvantage is that the new product may be sold at high (monopoly) prices. See DENNIS W. CARLTON & JEFFREY M. PERLOFF, *MODERN INDUSTRIAL ORGANIZATION* 653 (1990).

31. FRITZ MACHLUP, *AN ECONOMIC REVIEW OF THE PATENT SYSTEM*, STUDY NO. 15, SENATE COMM. ON THE JUDICIARY (1958); WILLIAM D. NORDHAUS, *INVENTIONS, GROWTH, AND WELFARE: A THEORETICAL TREATMENT OF TECHNOLOGICAL CHANGE*, ch. 1 (1969); Edmund W. Kitch, *The Nature and the Function of the Patent System*, 20 J.L. & ECON. 265 (1977); FREDRIC M. SCHERER, *INNOVATION AND GROWTH: SCHUMPETERIAN PERSPECTIVES* (1984).

32. RICHARD R. NELSON, *THE SOURCES OF ECONOMIC GROWTH* (1996).

and development that produces new technology. Prior to the seminal work of Robert Solow, economists viewed economic expansion as a function of efficiencies resulting from the proportion of capital to labor and from the division of the tasks assigned to workers. Thus, Adam Smith described the rise in the output of pins as a function of increased mechanization and the division of labor.<sup>33</sup> Solow found that technology also makes a material contribution to increased output.<sup>34</sup> In measuring the rise in non-farm output between 1909 and 1949, Solow showed that increased capital intensity alone did not fully account for the measured growth in output.<sup>35</sup> Denison, a subsequent investigator, determined that some of the gain in output per worker for the period 1929-1982 was attributable to capital intensity, increased work force education, and to the realization of scale economies.<sup>36</sup> However, he also noted that a significant part of the observed increase was attributable to scientific and technological advances.<sup>37</sup>

Prior to these empirical studies some economists had posed a related question as a theoretical proposition. These writers, conceding the importance of technology to economic growth, theorized about the necessary industrial conditions for inducing entrepreneurs to undertake the costs of research and development. Joseph Schumpeter, a prominent theorist, concluded that a certain amount of monopoly power in the marketplace, including patent protection, was required to assure society of the benefits of technological innovation.<sup>38</sup> Subsequent empirical studies of various industries

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33. ADAM SMITH, AN INQUIRY INTO THE NATURE AND CAUSES OF THE WEALTH OF NATIONS, Book 1, ch. 1 (1776).

34. Robert M. Solow, *Technical Change and the Aggregate Production Function*, 39 REV. ECON. & STAT. 312 (1957).

35. *Id.*

36. EDWARD F. DENISON, TRENDS IN ECONOMIC GROWTH 1929-1982 (1985)

37. *Id.*

38. JOSEPH SCHUMPETER, CAPITALISM, SOCIALISM, AND DEMOCRACY 106-108 (1942); Schumpeter's thesis has been summarized as follows:

[T]he competitive process itself consisted of a series of *disequilibria*, caused by innovations by dominant firms. Each innovation. . . was undertaken precisely in the expectation that. . . [the innovation] would yield monopoly profits to the innovating firm. Prospects for monopoly profits induced innovation. . . . This innovation-monopoly-disequilibrium sequence. . . generated benefits of technical progress far over-shadowing any niceties of marginal misallocation caused as

identified the importance of research and development as the strategic factor in nurturing and advancing technology.<sup>39</sup> This historical review of specific technological advances showed, for example, that Watts' development of the steam engine was attributable to the prior experimentation by the firm of Boulton & Watt. Similarly, it was noted that the laboratories of Thomas Edison and Alexander Graham Bell had contributed materially to the final invention by the development of models and the testing of various components.<sup>40</sup>

As to the role of the patent within this process of technological innovation, economic analysis identifies the patent as an ancillary, but necessary factor. From this perspective, the patent provides an incentive for the outlay of the time and the technical skill (the research and development expenses) central to the development of new technology.<sup>41</sup> The incentive feature of the patent followed from its legal authority to exclude others from making, using, or selling the patented method or apparatus until the investment (plus a reasonable rate of return) in research and development had been recouped through the royalty commanded by the patent.

This basic theoretical model explaining the function of patent protection is linked to the standard micro-economic assumption that economic actors are rational in pursuit of maximizing their interests.<sup>42</sup> Accordingly, the basic theoretical model addressing the function of patents states that the patent serves as an incentive to induce the requisite sunken costs, i.e. the initial outlay of money and effort in the face of an uncertain outcome.<sup>43</sup> Under this as-

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market power flickered on and off. . . .

WILLIAM G. SHEPHARD, MARKET POWER & ECONOMIC WELFARE, 16-17 (1970).

39. The pioneering work is SCHERER, *supra* note 31.

40. *Id.*

41. *Id.*

42. RICHARD A. POSNER, ECONOMIC ANALYSIS OF LAW 4 (4th ed. 1992) (the maximizing principle is a fundamental principle of economics).

43. WILLIAM D. NORDHAUS, INVENTIONS, GROWTH, AND WELFARE: A THEORETICAL TREATMENT OF TECHNOLOGICAL CHANGE, ch. 1 (1969); Edmund Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265 (1977); FRITZ MACHLUP, AN ECONOMIC REVIEW OF THE PATENT SYSTEM, STUDY NO. 15, SENATE COMM. ON THE JUDICIARY (1958); Stanley M. Besen & Leo J. Raskind, *An Introduction to the Law and Economics of Intellectual Property*, 5 J. ECON. PERSP. 1 (1991).

sumption of rational economic behavior, the research and development outlays would not be made, absent some reasonable protection against the immediate copying of a new process or apparatus by a competitor.<sup>44</sup> This basic model also posits that the grant of patent protection and the ability of the patentee to exclude others from making, using, or selling the patented subject matter provides the requisite incentive for the outlay of the research and development costs.<sup>45</sup> The patent's exclusionary rights afford the patentee the power to appropriate the value of the patented subject matter by commanding a royalty for its use. The prospect of such quasi-rents, i.e. payments to a factor of production in excess of the amount required to elicit a supply of that factor, offers an incentive to engage in the creative conduct leading to the invention.

There is, however, a qualification to this characterization of the role of patents. Economic analysis, without reference to patents, posits that competition among market actors is the preferred norm for efficient allocation of resources.<sup>46</sup> Thus, the exclusionary power of the patent, to which the phrase, "patent monopoly," is sometimes attached, is also incorporated into the economic analysis.<sup>47</sup> Around this "monopoly" function of the patent economists have constructed the familiar tradeoff model in which the incentive effect of this monopoly grant is to be balanced against the deadweight loss attributed to the negative impact of monopoly on consumer welfare.<sup>48</sup>

In applying this analysis, it is understood that an aggregate approach is taken. This analysis states a general tendency, valid for economic actors as a group; this approach does not descend to the level of the incentive needed to induce any given individual to un-

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44. Richard C. Levin, et al., *Appropriating the Returns from Industrial Research and Development*, BROOKINGS PAPERS ECON. ACTIVITY, 783 (1987).

45. 35 U.S.C. § 154 (1994).

46. DONALD DEWEY, *MONOPOLY IN ECONOMICS AND LAW*, ch. 2 (1959); Guido Calabresi, *The Pointlessness of Pareto: Carrying Coase Further*, 100 YALE L.J. 1211 (1991)(presenting a critical exposition of the theory of optimum efficiency).

47. See CARLTON & PERLOFF *supra* note 30.

48. Edwin Mansfield, *Patents and Innovation: An Empirical Study*, 32 MANAGEMENT SCIENCE 175 (1986); F. M. SCHERER, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE*, 400-4 (1970); WILLIAM G. SHEPHERD, *MARKET POWER AND ECONOMIC WELFARE*, 29 (1970).

dertake research in any one particular product, process, or apparatus or to take account of the risk sensitivity of individual entrepreneurs or investigators. A leading economic scholar of the patent system has described the incentive function of the patent system, stating that “the patent system is a crude and imperfect instrument. Because of diverse real-world complications, the patent protection given an innovator may be too little, too much, or the wrong kind.”<sup>49</sup>

Attempts to address some of the “real world complications” have brought refinements to the model.<sup>50</sup> Edmund Kitch has identified the distinction between the reward function and the prospect function of patents.<sup>51</sup> He stressed the importance of the basic economic incentive model, noting its importance in the pre-invention environment.<sup>52</sup> In addition, he also urged that broad scope be given to patents, by both the PTO and courts, in order to nurture post-invention decision-making for the development and exploitation of new processes and devices.<sup>53</sup> In his view, a new process or apparatus would more likely be commercialized by the inventor who had broad patent protection by insulating such patentee from competitive rivalry during the early stages of the commercial development of new technology.<sup>54</sup> Broadest scope should be afforded “pioneer patents”—those patents which represented important advances and offered the greatest prospect of generating significant ancillary technology.<sup>55</sup> This analysis thus provides a theoretical economic rationale to support patents as a material incentive to creative activity.<sup>56</sup> For this analysis to support the extension of patent protection to methods of doing business would require some showing of material innovation in business methods—a difficult challenge in light of the rapid emulation of coffee

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49. F. M. SCHERER & DAVID ROSS, *INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE*, 624 (3d. ed. 1990).

50. See Edmund Kitch, *The Nature and Function of the Patent System*, 20 J.L. & ECON. 265 (1977)

51. *Id.*

52. *Id.*

53. *Id.*

54. *Id.*

55. Kitch, *supra* note 50

56. *Id.*

bars, fast food outlets, internet commerce transactions, and web page communication, among others.

However, before applying this model to patents on business methods, it is appropriate to take account of the empirical/historical studies of industries in which patents have played a material role. The empirical work provides a link between the expectations posited by the theory and the observed function of the patent in industries in which growth is attributable to patented apparatus, processes, and methods. These industry studies provide a backdrop of experience with both pre-and post-invention environments with which to consider the likely impact on competition of the widespread patenting of business methods. These historical/empirical studies have the further benefit of directing attention to the inventive process, as well as to subsequent commercialization of new technology. It is worth noting at this juncture, that the *State Street Bank* decision omits any concern with the inventive step in the business method to which it granted protection. It was sufficient for the Federal Circuit to find statutory subject matter in the computer program that had produced “*a useful, concrete, and tangible result.*”<sup>57</sup>

A material contribution of this empirical work is its emphasis on the nature of the creative process. One such study probed the source of seventy important inventions asking whether the creative activity occurred in an industrial laboratory or by individual effort undertaken on private premises.<sup>58</sup> This study showed that only twenty-four inventions were the product of an industrial laboratory within a firm.<sup>59</sup> More than half of the seventy inventions were the product of an individual working either in an academic institution or on her own.<sup>60</sup> The substantial empirical/historical literature of the role played by patents in fostering new technology has recently been reviewed by Merges and Nelson.<sup>61</sup> They focus the empiri-

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57. *State Street Bank*, 149 F.3d at 1374 (citing *In re Alappat*, 33 F.3d 1526, 1544 (Fed. Cir. 1994)) (emphasis added).

58. JOHN JEWKES ET AL., *THE SOURCES OF INVENTION*, 321 (2d. ed. 1969).

59. *Id.*

60. *Id.*

61. Robert P. Merges & Richard R. Nelson, *On the Complex Economics of Patent Scope*, 90 COLUM. L. REV. 839 (1990).

cal/historical literature on the basic tradeoff question, i.e. whether greater patent protection increases inventive effort or whether the net result of broader patent protection is greater deadweight loss.<sup>62</sup> These authors assume that it is the scope of protection afforded a patent that is central to analyzing its impact.<sup>63</sup> Their preference for striking a socially-desirable tradeoff between the desired incentive role of the patent and the negative deadweight loss engendered by its monopolistic attributes is to adjust the scope of patent protection.<sup>64</sup> Merges and Nelson reviewed the evidence of technological development in several selected industries from this perspective.<sup>65</sup>

In testing the theoretical premise that granting broad protection to the “pioneer” patentee in a cumulative technology industry accelerates technology, these authors examined technological advancement in electric lighting, automobiles, airplanes, radio, and semiconductors and computers.<sup>66</sup> In electric lighting, they found that Edison’s dominant patent on the carbon filament as a light source did not result in rapid commercial development.<sup>67</sup> They conclude that “the validation of Edison’s broad patent slowed the pace of improvements considerably.”<sup>68</sup> Moreover, they point out that the acquisition of Edison’s patent enabled General Electric to obtain injunctions shutting down competitors, thereby increasing its market share from 40 to 75 percent.<sup>69</sup> General Electric was then able to limit entry into the industry while making just minimal improvements in the product.<sup>70</sup> They contrast the rate of technological improvement in lamps with the more rapid rate of development in other sectors of the electric industry, such as power generation and arc-lighting.<sup>71</sup> In these sectors they found a causal relation be-

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62. In some circumstances, an increase of deadweight loss may result in higher social welfare as when a patented apparatus becomes a substitute for a most costly input. See Kenneth W. Dam, *The Economic Underpinnings of Patent Law*, 23 J. LEGAL STUD. 247, 250 (1994).

63. See Merges & Nelson, *supra* note 61, at 840.

64. See *id.* at 839-40.

65. See *id.* at 884-905.

66. See *id.*

67. See *id.* at 886.

68. See *id.*

69. See *id.* at 885.

70. See *id.* at 885-86.

71. See *id.* at 887-88.

tween the absence of broad patent protection and the rapid entry of competing firms and accelerated product improvement.<sup>72</sup>

A similar pattern is noted in the automobile and airplane industries which were marked by dominant patents at their inception.<sup>73</sup> The Selden patent on the light-weight internal combustion engine and the Wright patent on the steering and stabilization system of aircraft contained broadly drawn claims covering a variety of embodiments.<sup>74</sup> Merges and Nelson note that the record of the automobile industry shows that Selden did not seek to commercialize the patent.<sup>75</sup> He sought instead to license any user who was willing to acknowledge the patent and to pay royalties.<sup>76</sup> The Wrights, however, refused to license their patent.<sup>77</sup> Merges and Nelson note that these industries did not conform to the theoretical prediction that the dominant patentee would consider the broad patent protection as an incentive to develop the subject matter.<sup>78</sup> The automobile industry developed through others who paid royalties to Selden's licensing entity.<sup>79</sup> Rather than become a developer/manufacturer, Selden functioned as a collector of royalties.<sup>80</sup> The Wrights, however, did undertake to produce airplanes and to improve their design, but they refused to license others whose design ideas were at odds with theirs.<sup>81</sup> On the basis of their study of these industries, Merges and Nelson doubt the efficacy of broad patent protection as a means of achieving technological progress.<sup>82</sup> As they concluded:

There is good reason to believe that the Wright patent significantly held back the pace of aircraft development in the United States . . . . The aircraft case is similar to that of

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72. *See id.* at 887.

73. *See id.* at 888-89.

74. *See id.* at 888-91.

75. *See id.* at 888-89; *see also*, 44 WILLIAM GREENLEAF, MONOPOLY ON WHEELS; HENRY FORD AND THE SELDEN AUTOMOBILE PATENT (1961).

76. *See Merges & Nelson, supra* note 61, at 889.

77. *See id.*

78. *See id.* at 889-91.

79. *See id.* at 889-90.

80. *See id.* at 889.

81. *See id.* at 890.

82. *See id.* at 891.

automobiles in that the problems caused by the initial pioneering patent were compounded as improvements and complementary patents, owned by different companies, came into existence. The situation was so serious that at the insistence of the Secretary of the Navy, during World War I, an arrangement was worked out to enable automobile cross licensing. This arrangement . . . turned out to be a durable institution. By the end of World War I there were so many patents on different aircraft features that a company had to negotiate a large number of licenses to produce a state-of-the-art plane.<sup>83</sup>

In contrast, these authors cite the radio industry as an example of the potential for gridlock in the development of a technology when several broad patents exist on complementary components.<sup>84</sup> The conflict and diverting litigation was ultimately resolved by the formation of a single entity, the Radio Corporation of America (RCA), which took in the owners of all of the potentially blocking patents as major shareholders in the corporation.<sup>85</sup> Comparing the development of technology in autos and airplanes with the experience of the radio industry, they conclude that “many early inventors in cumulative technologies often perform overlapping research. This may lead to blockages unless basic patents are not present, or routine licensing and cross licensing is instituted.”<sup>86</sup>

The semiconductor and computer industry is then cited as an example of an industry in which technology advancement was accelerated by the absence of broad patents on its pioneering technology.<sup>87</sup> The history of this industry shows that the initial transistor patent was held by AT&T, which was barred by an antitrust decree from enforcing it.<sup>88</sup> Moreover, the two patents on parts of the integrated circuit held by Fairchild and by Texas Instruments were quickly cross-licensed under the aegis of the Department of

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83. *See id.* at 890-1.

84. *See id.*

85. *See id.* at 893

86. *Id.*

87. *See id.* at 893-94.

88. *See id.* at 894.

Defense, the principle purchaser of this technology at the time.<sup>89</sup> In the semiconductor and related electronic industries, Merges and Nelson concluded that “patents have played only a very minor role in the computer industry, and where patents are concerned, cross licensing is common.”<sup>90</sup>

Based on their review of these and other industries (chemical and biotechnology), the authors state their conclusion as to the effects of broad patent protection as follows:

Our general conclusion is that multiple and competitive sources of invention are socially preferable to a structure where there is only one or a few sources. Public policy, including patent law, ought to encourage inventive rivalry, and not hinder it . . . . [A] rivalrous structure surely has its inefficiencies. But such a structure does tend to generate rapid technological progress and seems a better social bet than a regime where only one or a few organizations control the development of a given technology.<sup>91</sup>

## II. APPLYING THE MODEL

The theoretical model adjusted by empirical data illuminates the basic policy choices presented by the patent regime. Since the theoretical trade-off model frames both the incentive function as well as the monopoly element of patents, the first step in assessing the policy justification for adding subject matter to section 101 of the Patent Act<sup>92</sup> is to pose the question: is an incentive required to induce this kind of activity—i.e. new methods of doing business? This inquiry is linked to a collateral question because the exclusionary rights of section 154(a)(1) enable the patentee to prevent immediate access to the protected subject matter by a competitor—the monopoly element.<sup>93</sup> As an incentive, patents grant innovators

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89. *See id.* Anecdotal information is that Texas Instruments made its patents a profit center. Some estimates suggest that but for its patent royalties, the company would have operated at a loss for several years. This practice may have achieved an economically efficient outcome in that low-cost manufacturers practiced the patents.

90. *Id.*

91. *Id.* at 908.

92. 35 U.S.C. § 101 (1994).

93. 35 U.S.C. § 154(a)(1) (1994).

quasi-rents to appropriate the value of their inventions, as well as the protection against immediate commercialization of a similar process or apparatus by competitors, who may have incurred little or no research costs. Accordingly, the collateral incentive question is: are there presently cited instances of aggressive rivalrous practices that are undercutting the incentive to further innovation of methods of doing business? At this writing, there is no pending legislation seeking protection against such practices.<sup>94</sup> Are there, however, grounds other than abusive practices or “free-riding” for granting patent protection to business methods?

Again, empirical data on the function of business method patents is insubstantial, because of the brief period in which business methods have enjoyed patent protection. There is an additional limitation in applying these empirical studies to business method patents. The patents in the industries described above have been associated with the production side of economic activity. Innovation in products and processes there involved tangible assets moving in market transactions. The dollar value of these products can be identified and measured.<sup>95</sup> The business practices which received protection in the *State Street Bank* decision involve the service and distribution side of economic activity.<sup>96</sup> Significantly, there seem to be no studies of distribution and service industries as an element in economic growth beyond the calculation of their contribution in the national income accounts.<sup>97</sup> In the absence of data showing a need to spur innovation in business methods, it is equally plausible that the spur of competition and the long tradition of competition by emulation have been sufficient to provide an adequate level of innovation in methods of doing business.<sup>98</sup>

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94. Perceived abusive competitive practices frequently are reflected in legislation. The House of Representatives for the last three sessions has responded to requests for database protection. See H.R. 1907, 106th Cong. § 273 (1999). Similarly, Congress has enacted design protection for vessel hulls to reverse the denial by the Supreme Court of state law protection of such designs in *Bonito Boats, Inc. v. Thunder Craft Boats, Inc.*, 489 U.S. 141 (1989). See Digital Millennium Copyright Act, P.L. 105-304, 112 Stat. 2860 (codified at 17 U.S.C.A. §§ 1301-1332) (1998).

95. See J. STIGLITZ, *ECONOMICS* 660-66 (1993)

96. See 149 F.3d at 1370-72.

97. See STIGLITZ, *supra* note 95 (noting the contribution of service providers to employee compensation, profits, rents, interest, and taxes).

98. See *id.*

There is further reason to avoid reliance on economic theory as a basis for the expansive grant of patents on methods of doing business. Recent economic writing, as well as the literature of law and economics invites caution.<sup>99</sup> Innovation predicted as rational economic behavior as a matter of abstract theory may not occur. Economic opportunities posited by theory may not always be embraced because other strategies may dominate.<sup>100</sup> In such instances technology may be impeded rather than accelerated.<sup>101</sup> The basic premise of economic rationality itself, is currently under review among economists and law and economics scholars. An emerging field of “behavioral economics” calls into question the universal validity of the traditional maximizing assumption by drawing on insights from studies in cognitive psychology.<sup>102</sup> Such studies draw on the basic maximizing assumption, but modify it by the insights and experiments of psychologists. What emerges from this work is the conception of economic actors making choices from preferences shaped by past experience as well as by differential risk and loss assessments. For example, consumers’ conception of the “unfairness” of a price may require a profit-maximizing monopolist to price below the optimum price predicted by traditional

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99. See Thomas G. Krattenmacher & Steven C. Salop, *Anticompetitive Exclusion: Raising Rivals Costs to Achieve Power Over Price*, 96 YALE L.J. 209 (1986)(describing strategic behavior); William J. Baumol & Janusz Ordover, *Uses of Antitrust To Subvert Competition*, 28 J.L. & ECON. 247 (1985).

100. See Krattenmacher, *supra* note 99.

101. *Id.*

102. Albert O. Hirschman, *Obstacles to Development: A Classification and a Quasi-Vanishing Act*, 13 ECON. DEV. & CULTURAL CHANGE, 385 (1965)(attitudes toward development do not conform to maximizing assumption); George A. Akerlof & William T. Dickens, *The Economic Consequences of Cognitive Dissonance*, 72 AM. ECON. REV. 307 (1982)(identifying transactions in which economic actors respond differentially to the same data based on cognitive differences); Shira Lewin, *Economics and Psychology: Lessons for Our Own Day from the Early Twentieth Century*, 34 J. ECON. LIT. 1293 (1996)(recounting the historical tension between mainstream economists’ reliance on rational choice and attempts to infuse economic theory with behavioral perspectives); see also, TERENCE W. HUTCHISON, THE SIGNIFICANCE AND BASIC POSTULATES OF ECONOMIC THEORY, 41 (1938)(urging logical positivism as the approach to behavioral assumptions in economics); Kelvin J. Lancaster, *A New Approach To Consumer Theory*, 74 J. POL. ECON. 132 (1966). *But see*, Gary S. Becker, *Irrational Behavior and Economic Theory*, 70 J. POL. ECON. 1 (1962)(defending traditional analysis).

theory.<sup>103</sup> Overall, this literature describes human decision-making as being prone to non-rational, yet systematic tendencies.<sup>104</sup>

Although behavioral economics is still in its developmental stage, there is sufficient credible work to suggest that behavior other than universal maximizing can be incorporated into economic models. The significance of behavioral economics for present purposes is that it casts doubt on the conclusion that broad patent protection for new subject matter can be justified solely on the micro-economic model that such protection is required to induce innovation. Limited reliance by judges and other decision-makers on unqualified postulates of rational economic behavior is also suggested by the recent work of a group of economic theorists whose research suggests empirical testing of theoretical postulates. A leading economic theorist has described that “theory is being forced to be much more specific. The whole intention of empirical economics is to force theory down to earth.”<sup>105</sup>

These developments in economic analysis suggest that absent supporting empirical data, the need for patent protection of business methods should be considered an unsettled question because the *State Street Bank* opinion does not provide an analytical platform for business method patents. Rather, the opinion rests on the proposition that the Patent Act authorizes patents, including busi-

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103. Daniel Kahneman et al., *Fairness as a Constraint on Profit Seeking: Entitlements in the Market*, 76 AM. ECON. REV. 728 (1986).

104. DANIEL KAHNEMAN, *New Challenges to the Rationality Assumption*, in THE RATIONAL FOUNDATIONS OF ECONOMIC BEHAVIOUR 203 (Kenneth J. Arrow, Enrico Colombaro, Mark Perlman & Christian Schmidt eds., 1996); Christine Jolls, Cass R. Sunstein, & Richard Thaler, *A Behavioral Approach To Law And Economics*, 50 STAN. L. REV. 1471 (1998); *but see*, Richard A. Posner, *Rational Choice, Behavioral Economics, And The Law*, 50 STAN. L. REV. 1551 (1998); Matthew Rabin, *Incorporating Fairness Into Game Theory and Economics*, 83 AM. ECON. REV. 1281, 1292 (1993); Matthew Rabin, *Psychology and Economics*, 36 J. ECON. LIT. 11 (1998). *See also*, Jon D. Hanson & Douglas A. Kysar, *Taking Behaviorism Seriously: The Problem of Market Manipulation*, 74 N.Y.U. L. REV. 630 (1999).

105. George A. Akerlof, N.Y. TIMES, Apr. 20, 1999, at C1. The same article cites empirical testing of the theoretical premise that a rise in the minimum wage will cause a decline in the demand for minimum wage workers. A comparative survey of the fast-food markets in New Jersey and Pennsylvania showed that an increase in the minimum wage in New Jersey had no effect on the number of minimum wage workers employed. *Id.* at C10.

ness method patents.<sup>106</sup> The opinion does not address the issue of implementing this perspective on a case by case application of the Patent Act. The mischief of this decision is its failure to recognize any difference between laboratory and experimentally-generated methods and processes and methods derived from the competitive rivalry of the marketplace, an arena dominated by emulation and narrowed to conformity by regulatory statutes and regulations. Accordingly, the precedential value of this decision should be assessed as neither barring nor necessarily advancing business method patents. Such a restrictive interpretation is supported by the opinion itself. Setting aside the improvident strictures against the prior rule, Judge Rich wrote that, "Since the 1952 Patent Act, business methods have been, and should have been, subject to the same legal requirements for patentability as applied to any other process or method."<sup>107</sup>

Accordingly, the burden of establishing patent protection for a business method should remain on the claimant to present credible supporting data to establish eligibility for patent protection. A distinct element of a claimant's burden for the grant of a business method should be the identification of the inventive contribution. Identification of the prior art is also required. Arguments for patent protection grounded on theoretical models as needed incentives to innovation should be dismissed. Granting relief based solely on a traditional economic model has recently been rejected by the Supreme Court in a non-patent case.<sup>108</sup> The same approach should be taken by the PTO examiners and by judges in considering claims of patent protection for methods of doing business. Recent analysis of the decision to patent, as well as the decision to risk infringement, portray a world far more complex than that of the traditional maximizing model.<sup>109</sup> Courts should give weight to the fact that business methods are not derived from laboratory research and experimentation, but evolve and are implemented in an environment of rivalry and emulation. The interactive responses that shape

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106. *See id.*

107. 149 F.3d at 1375.

108. *Id.* (rejecting Kodak's argument for a presumption of legality based on a theoretical model and requiring a presentation of market data).

109. *See infra* notes 113-114.

business methods are largely shaped by customary practices. Business methods are devised as much by current fads in customer appeal as by experimentation and innovation, e.g. the welter of goods and services tumbling daily from the Internet.

There is also a constraining element in the emulation of business methods. Product groups and services tend to cluster in a sameness of near-similarity to their potential customers. A seller/producer who moves in advance of the revealed preferences of consumers' risks a loss of customers and a resulting decline in revenue. Intruding patent protection into such an emulating, competitive market system, absent a clear showing of useful innovative advances, serves only to disrupt. In such circumstances, patent protection offers entrepreneurs the alternative of entirely or partially withdrawing from participation as market actors in favor of devoting their energies to licensing and litigating patent infringement cases. The consequence of such conduct may be to increase transactions costs, which may, because of the monopoly element of patents, result in price increases and a negative impact on consumer welfare.

Litigation costs are a significant factor in patent protection.<sup>110</sup> Studies have identified litigation costs as a material element in the management of patent rights.<sup>111</sup> For example, if preliminary injunctions are readily available in infringement cases involving business method patents, an incentive is provided for recourse to litigation, sometimes at modest cost, as a means to impede a competitor.<sup>112</sup> Accordingly, courts should be restrictive in granting preliminary injunctions in business method patent cases.<sup>113</sup> Mod-

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110. Josh Lerner, *Patenting In The Shadow Of Competitors*, 38 J.L. & ECON. 463 (1995).

111. *See id.*

112. *See id.*

113. One study shows that the Federal Circuit has increased the grant of preliminary injunctions since its inception, William A. Morrison, Note, *The Impact of the Creation of the Court of Appeals for the Federal Circuit on the Availability of Preliminary Injunctive Relief Against Patent Infringement*, 23 IND. L. REV. 169 (1990); *see e.g., Systemation, Inc. v. Engel Indus. Inc.*, 1999 WL 129640 (Fed. Cir. Mar. 10, 1999) (unpublished table decision); *PPG Industries v. Guardian Indus. Corp.*, 156 F.3d 1351 (Fed Cir. 1998). *See also*, Rochelle Cooper Dreyfuss, *The Federal Circuit: A Case Study in Specialized Courts*, 64 N.Y.U. L. REV. 1 (1989).

est use of injunctive relief has the further advantage of preserving the incentive feature of the patent, without concurrently maintaining or enhancing its “monopoly” potential.<sup>114</sup>

Restraint in the issuance of business method patents is also warranted on the part of the Patent Office. Initially, the grant of business method patents by the PTO should be founded on a strict application of the Patent Act itself. Although the opinion in *State Street Bank* stresses the single issue of rejecting a business method exception in section 101,<sup>115</sup> the Patent Act requires more.<sup>116</sup> Now that the business method exemption has been effectively removed from patent jurisprudence, decision-makers face the basic framework of the Act, without much guidance from the opinion in *State Street Bank*. Evolving a workable patent regime for the protection for business methods is a substantially larger undertaking than this opinion implies.

Consider the ready availability of preliminary injunctions as well as the application of the *State Street Bank* opinion in the following hypothetical situations. Recall that Dell Computer avoids retail distribution costs by delivering to the consumer direct-ordered, custom-built computers. To fill the consumer’s order Dell uses a variation of Henry Ford’s assembly line method of manufacture. Instead of a moving assembly line, Dell’s employees form a cell of two or three workers who assemble the entire final product to the consumer’s specifications in a fixed factory location. Gateway, a competing seller of computers, observing the success of Dell’s direct-order method and its resulting lower selling prices, seeks a market niche by emulating Dell’s direct-sale, customized manufacturing. Suppose then that Gateway adds a chain of retail facilities where consumers may browse, inspect, and try many different computers prior to placing a direct order for the one selected. Now Circuit City, a large, national electronics-retailing competitor, comes into the same relevant market. Circuit City management, responding to a loss of computer sales to its competi-

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114. Ian Ayres and Paul Klemperer, *Limiting Patentees’ Market Power Without Reducing Innovation Incentives: The Perverse Benefits of Uncertainty and Non-Injunctive Remedies*, 97 MICH. L. REV. 985 (1999).

115. 149 F.3d at 1375.

116. 35 U.S.C. § 101 (1994).

tors, modifies its traditional showroom, point of sale retail method. Circuit City managers emulate the sales methods of their competitors with the following modification. In addition to offering on-site inspection and expert salesperson assistance in demonstrating the use of many brands of computers, Circuit City adopts Gateway's direct-order method by adding a kiosk on its premises from which a direct order can be placed to either Dell or to Gateway from its toll-free telephone line. Circuit City then works out a "finder's fee" schedule with Dell and Gateway whereby Circuit City obtains a stated percentage of the value of each order placed from its premises.

Assume Dell, Gateway, and Circuit City all seek to patent their distribution method. What is the prior art—Henry Ford's assembly line, Sears Roebuck's early mail order catalog, L.L. Bean's successor catalog, Victoria's Secret's Web Page, or Amazon.com's Internet book distribution? This is an essential inquiry, one which was not addressed in the *State Street Bank* opinion, although the opinion recited that "business methods have been and should have been subject to the same legal requirements for patentability as applied to any other process or method."<sup>117</sup> The search for prior art becomes complex when it is noted that business methods predated the origin of the patent regime and the United States Constitutional basis for them.<sup>118</sup> Is the bill of exchange of the Law Merchant a precursor of the contemporary financial instrument known as a derivative? Moreover, the economic model sketched above underscored the need to assess the efficacy of patents by a study of the role of patents in development of specific industries.<sup>119</sup> Given the absence of protection for business methods prior to the *State Street*

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117. *State Street Bank*, 149 F.3d at 1375. In *Graham v. John Deere Co.*, 383 U.S. 1, 33 (1966), the court noted the centrality of the prior art inquiry. The prior art of business methods has a long historical trail. Business transactions predate the founding of the patent regime. The first barter transaction involved a method of doing business. Many business methods are ingrained in social customs. Banking is an example in which custom, manifold government regulations, and the spur of competition have produced stylized transactions. Finding the prior art in the practice of credit transactions would pose daunting definitional and investigative task.

118. THEODORE F.P. PLUCKNETT, A CONCISE HISTORY OF THE COMMON LAW, ch. 5 (5th ed. 1956) (tracing the development of maritime and mercantile law from customary practices).

119. *See id.*

*Bank* decision, there presently exist no industry studies of them. Indeed, to plan an industry study of current patent protection of business methods poses issues of circularity. To assess the causal link between patent protection and the growth of a business practice, it would be necessary to distinguish between the impetus given the practice by the spur of competition and that attributable to patent protection. For example, is the development of financial instruments suited to inclusion in a Roth IRA attributable to the competition inspired by this tax-saving feature of the Internal Revenue Code, or to the creativity of financial intermediaries, or partially to each?

Suppose Dell sues Circuit City for infringement of its business method patent and the defendant relied on section 273 of H.R. 1907, recently passed by the House.<sup>120</sup> This provision authorizes a defense of use based on an earlier invention.<sup>121</sup> Section 273 (a)(3) provides that the phrase “use of a method in the United States,” includes a “method of doing or conducting business.”<sup>122</sup> How would a court rule and make findings based on a definition of Dell’s method of conducting business?<sup>123</sup>

Also absent from the *State Street Bank* opinion is guidance in identifying the non-obvious advance over the prior art—the invention. Assume that Dell, Gateway, and Circuit City each employ a different software designer to execute their business method. Assuming that there are material differences in the design of each software program does each computer program of each competitor warrant patent protection? Suppose each program was independently created and each program manages the costs of inventory, manufacturing, and distribution, as well as computing a final retail price. If so, what is the scope of each patent? Business methods in substantial part are a product of market interaction among competi-

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120. H.R. 1907, 106th Cong. § 273 (1999).

121. *Id.*

122. *Id.*

123. Recently, Congress has underscored the importance of determining the invention in business patent methods. On August 4, 1999, the House of Representatives passed H.R. 1907, The American Inventors Protection Act of 1999, in which § 273(a)(3) defines “method” for purposes of the defense to infringement based on earlier invention, to include “a method of doing or conducting business.” 58 (BNA) PAT., TRADEMARK, & COPYRIGHT J. 413 (Aug. 5, 1999).

tors. As the above example illustrates, commercial rivalry itself is a material factor in changing business methods. Which patent doctrine can serve to draw the line between those changes in business methods attributable to a competitor and those that are sufficiently innovative and non-obvious to warrant patent protection under *State Street Bank*? Because business methods have their origin in the first barter transaction in antiquity and have evolved by custom, to grant them protection now within the framework of the Patent Act is troublesome. To do so requires distinguishing between methods derived from customary practice from those sufficiently novel and original to warrant patent protection. In the current computer-dominated market environment it may even be difficult properly to identify the innovation. The *State Street Bank* case is illustrative of the nature of this task.<sup>124</sup>

On the fundamental issue of identifying the invention, the opinion offers no guidance. Indeed it is difficult to distill the innovation from the facts as recited in the *State Street Bank* opinion.<sup>125</sup> Boes, the inventor, was a software designer engaged to write a program executing the calculations required by the Regulations to the Internal Revenue Code.<sup>126</sup> Those Regulations set out in great detail the basic transactional and conceptual structure for Boes' software program.<sup>127</sup> Necessarily, his program follows this structure. The regulations provide the conceptual principles and give examples of partnership transactions having "substantial economic effect"<sup>128</sup>—the touchstone of allowable allocation of income items, gains, losses, deductions, and credits to partner's capital accounts.<sup>129</sup> It might appear from the length and the complexity of these regulations that they represent original and innovative exposition of a difficult concept in the federal income taxation of part-

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124. *State Street Bank*, 149 F.3d at 1373.

125. *Id.* at 1370-2.

126. *Id.* at 1370.

127. Treas. Reg. § 1.704-1(b)(2)(iii)(1997).

128. *Id.*

129. WILLIAM S. MCKEE ET AL., FEDERAL TAXATION OF PARTNERSHIPS AND PARTNERS § 10.02 (1997); Lawrence Lokken, *Partnership Allocations*, 41 TAX L. REV. 545 (1986); Michael J. Close & Dan A. Kusnetz, *The Final Section 704(b) Regulations: Special Allocations Reach New Heights of Complexity*, 40 TAX LAW. 307 (1987).

nerships.<sup>130</sup> However, on closer scrutiny it becomes apparent that this appearance is illusory.

The issuance of regulations is a collaborative process of response and review.<sup>131</sup> Congress enacts tax legislation phrased in broad, general terms.<sup>132</sup> The task of making many statutory provisions meaningful to specific transactions is often assigned to the regulations.<sup>133</sup> These, in turn, are developed by a process of notice, the issuance of Temporary Regulations through consultation with the tax bar and other interested persons.<sup>134</sup> When subsequently issued as Final Regulations, particularly those involving partnerships, the Regulations generally reflect the resolution of tensions between the taxpayers and the Service over transactions which in form are permitted by some provisions of the Code, but in substance result in tax-avoidance.<sup>135</sup> For example, suppose a taxpayer's partnership agreement provides that all of the depreciation allowance on a partnership asset is allocated to Partner A, an arrangement permitted by one provision of the Internal Revenue Code and the Uniform Partnership Act.<sup>136</sup> Without more, the Code provision governing depreciation would permit this arrangement for Partner A, even if she owned a .01 percent interest in the partnership asset, Blackacre.<sup>137</sup> She bears .01 risk in Blackacre and would claim all of a deduction associated with that asset.<sup>138</sup> The Regulations reverse this outcome on an analysis of substance over form.<sup>139</sup>

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130. See Close, *supra* note 129.

131. In I.R.C. § 7805 (1995), Congress has delegated the authority to promulgate Regulations to the Secretary of the Treasury. Such Regulations are issued initially as temporary regulations and are subjected to a process of public comment prior to being issued in final form, I.R.C. § 7805(e)(1). Generally, courts give great weight to these Regulations. See *United States v. Correll*, 389 U.S. 299 (1967)(finding limited scope of judicial review of Treasury Regulations); JAMES J. FREELAND ET AL., *FUNDAMENTALS OF FEDERAL INCOME TAXATION*, 25-26 (1997).

132. See FREELAND, *supra* note 131 at 25-6.

133. *Id.*

134. *Id.*

135. *Id.*

136. See Close *supra* note 129.

137. *Id.*

138. *Id.*

139. *Id.*

In these circumstances, it is difficult to identify innovation in a text largely descriptive of transactions structured by taxpayers and reviewed and re-characterized in the Regulations drafted by I.R.S. employees. Not infrequently, a phrase or an example will be the result of several rounds of negotiation.<sup>140</sup> A fragment of tax law underscores this point.<sup>141</sup> Partnership taxation is more complex than the taxation of individuals, trusts and estates, or corporations, because the Internal Revenue Code makes a dual characterization of the partnership.<sup>142</sup> The partnership as such is not subject to income tax liability because the partnership is not defined by the Code as a taxable entity.<sup>143</sup> Instead it is treated as an aggregation of partners, who are the ultimate taxpayers.<sup>144</sup> However the Internal Revenue Code also views the partnership as an entity to the extent that it serves as the computation unit to determine the character and the amount of partnership income attributable to each taxpayer-partner.<sup>145</sup> Complexity is added to the calculation of each partner's distributive share of the partnership's income-determining items by the provision that permits the partnership agreement to control the allocation of income, gain, loss, deduction, or credit to the partners.<sup>146</sup> A text on partnership taxation describes the required calculations as follows: "[T]he partnership . . . [is required] to keep two sets of accounts—one for "tax" purposes and the other for "book" purposes. The "book" items reflect the economic arrangement of the partners. The "tax" items . . . must be determined with reference to the partners' distributive shares of the corresponding book items".<sup>147</sup>

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140. *Id.*

141. *Id.*

142. *Id.*

143. I.R.C. § 701 ("A partnership as such shall not be subject to the income tax imposed by this chapter.").

144. *Id.*

145. I.R.C. § 702(b) ("The character of any item of income, gain, loss, deduction, or credit . . . shall be determined as if . . . [it] were realized directly from the source . . . realized by the partnership.").

146. *See* I.R.C. § 704(b) ("A partner's distributive share of income, gain, loss, deduction, or credit . . . shall be determined in accordance with the partner's interest in the partnership (determined by taking into account all facts and circumstances). . . .").

147. S.A. LIND ET AL., FUNDAMENTALS OF PARTNERSHIP TAXATION, 174 (3d. ed. 1992).

This tax text also notes the limited guidance offered to taxpayers by the Internal Revenue Code in making these complex calculations, noting that “[t]he Code itself provides no guidance, the allocation question has historically been answered in regulations and rulings issued by the Treasury.”<sup>148</sup>

In contrast to the Code, the regulations do indeed supply guidance.<sup>149</sup> Comprising fifty-three pages in the Code of Federal Regulations this comprehensive text, coupled with copious examples, sets out in elaborate detail the items to be adjusted and the method of their adjustment.<sup>150</sup> A comparison between these regulations and the claims of the Signature patent reveals a parallel structure.<sup>151</sup> This comparison shows that the patent claims closely approximate the form and substance of the regulations.<sup>152</sup> In these circumstances, the analysis of the *State Street Bank* opinion does not illuminate the innovative contribution.<sup>153</sup> The opinion addressed this issue only in terms of the result, as follows:

Today, we hold that the transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations . . . constitute a practical application of a mathematical algorithm, formula, or calculation, because it produces a useful, concrete and tangible result—a final share price momentarily fixed for recording and reporting purposes and *even accepted and relied upon*

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148. See DEWEY, *supra* note 46, at 186.

149. See 26 C.F.R. § 1.704-1 (1997) (covering the determination of tax liability for partners' distributive share).

150. *Id.*

151. See I.R.C. § 706(d)(2)(A) (requiring a daily computation of any change in each partner's interest in the partnership as of the close of each day) & Treas. Reg. § 1.704-1(b)(2)(iv) (requiring the allocation of income, gain, loss, or deduction in the daily calculation of each partner's capital account). See also, Richard H. Stern, *Scope of Protection Problems With Patent and Copyrights on Methods of Doing Business*, 10 *Fordham Intell. Prop. Media & Ent. L.J.* 105 (1999). In his Appendix A, Stern notes the parallel format between the requirements set out in the Treasury Regulations and the claims of the Signature Financial patent. This parallelism suggests little, if any, originality on the part of the patentee. Moreover, were this patent to cover the most efficient method of compliance with these complex calculations, a taxpayer could be required to obtain a license in order to comply with the Internal Revenue Codes mandate timely to file an accurate Form 1040.

152. Treas. Reg. § 1.704 (text and examples).

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

*by regulatory authorities . . .*<sup>154</sup>

The opinion thus finds a useful, concrete and tangible result without identifying the invention which produced it.<sup>155</sup> The contribution of Boes, the software programmer, was not explored in the opinion.<sup>156</sup> The absence in the opinion of any reference to the originality of the program written by Boes leaves one to wonder whether, as a software program, it was novel and innovative or trivial. The opinion obscures the basic patent inquiry of finding non-obviousness in either the program qua software program or in the method of deriving the information required by the regulations.<sup>157</sup> The opinion does not apply the Patent Act's requirement of identifying the novel, non-obvious advance over the prior art.<sup>158</sup> The invention remains unstated. Moreover, it is difficult to distill it from the opinion. The conception and structure of Boes' program was dictated by its function of accomplishing compliance with the Income Tax Regulations.<sup>159</sup> Boes' program closely follows the regulations. Accordingly, the question remains whether this case

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154. *Id.* (emphasis added).

155. The comparison of the patent claims with the Regulations could support the conclusion that neither the drafters of the Regulations nor the software programmer had contributed much that would be considered novel or original. First issued in 1960, these Regulations have subsequently been revised eleven times. In their present form, these Regulations reflect the accretion of governmental responses to taxpayers statements and objections. Overall, the objective of the government has been to identify those partnership transactions that reduce tax liability as formal arrangements lacking economic substance. One tax authority has described the interactive nature of the process of writing regulations as follows:

The Secretary of the Treasury has delegated the authority to issue regulations to the Commissioner of Internal Revenue, subject to the approval of the Assistant Secretary of the Treasury for Tax Policy. Typically, a regulation is published in the Federal Register as a notice of Proposed rulemaking. Comments from the public are received, and often a public hearing is held, before final regulations are published. . .

MICHAEL J. GRAETZ, *FEDERAL INCOME TAXATION* 73 (2d ed. 1988). *See also*, Northern Telecom, Inc. v. Datapoint Corp., 908 F.2d 931 (Fed. Cir.), *cert. denied* 111 S.Ct. 296 (1990) (invalidating a method patent for failure to disclose best mode.) Failure to disclose all the details may cause a court to conclude that the claims fail the non-obvious requirement.

156. *See State Street Bank*, 149 F.3d 1368, and *supra* text accompanying note 155.

157. *Id.*

158. *State Street Bank*, 149 F.3d 1368.

159. *See Stern*, *supra* note 151 at Appendix A.

offers a sufficient platform for the announcement of a broad, new rule.<sup>160</sup> Equally troublesome is the hint in the opinion that a method of compliance with regulatory authorities can serve as an element of support for patent protection.<sup>161</sup> Assume that a second programmer writes a new program to execute the same function, knowing only that another program exists for these calculations. Assume further that the second program, made freely available to the public, contained only minor variations in the Boes method of calculations because both programs are bound by the structure of the regulations.<sup>162</sup> If broad scope is given to the Boes patent, might a taxpayer's use of a freely available, efficient method of complying with a government regulation pose the risk of liability for patent infringement?

A further source of unease over this opinion is its potential for generating a boom in business method patents.<sup>163</sup> The broad language of this opinion would support the patenting of the sales methods of Dell, Gateway, and Circuit City in the above examples. If the distribution method of each were reduced to a software program described as a means of calculating a maximizing strategy for increasing sales revenue and minimizing overhead costs, these programs could meet the test of the opinion. Moreover, this decision obligates the patent bar to advise enterprise managers of the availability of this new protection for their business methods. This protection extends to fields other than financial services.<sup>164</sup> Banking, insurance, and accounting are most likely to be immediately involved in seeking such patent protection. However, protection is unlikely to be limited to these sectors because the patent bar has an obligation to advise their clients of the availability of patent protection of their methods of doing business. So the impact of the *State Street Bank* decision serves as the proverbial pebble in a pond causing a series of widening concentric circles of business method patents. Seminars by patent practitioners could generate awareness among business managers not only of the prospect of protection for

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160. *Id.*; see also, *supra* text accompanying note 155.

161. *State Street Bank*, 149 F.3d at 1368.

162. *Id.*

163. See "Boom", *supra* note 7.

164. See *supra* note 22 and text accompanying notes 13-20.

their business methods, but also of the potential revenue from licensing them. Patents granted could become patents enforced or licensed. Litigation expenses and royalty payments become new transaction costs of doing business and such costs may in some market circumstances, negatively impact consumer welfare.

Where is the societal benefit from this extension of patent protection to business methods? Assume that in this example, Dell, Gateway, and Circuit City all are granted patents, with Dell being the first to file. What claims might Dell raise against the others? If Dell's patent is given broad scope on the authority of *State Street Bank*, are consumers better served? If, in these circumstances, all patentees meet and come to a cross licensing, pooling arrangement, are consumers more likely to be benefited? If so, do patents on business methods have the potential of inducing cartel arrangements among competitors? Are some consumers likely to bear the increased transaction costs from the resulting fees and charges? These are questions to consider as the process of patenting business methods goes forward.

What guidance can be derived from the fragment of economic analysis presented here? Overall, from the perspective of the model developed earlier, the broad grant of patent protection for methods of doing business is something of a square peg in a sinkhole of uncertain dimensions. Nowhere in the substantial literature on innovation is there a statement that the United States economy suffers from a lack of innovation in methods of doing business. Compared with the business practices of comparable economies we seem to be innovators in distribution and in the service industries. By the casual empiricism of counting the number of graduate business schools, the United States is ahead of other developed economies. This datum, plus the substantial enrollment of foreign students in the graduate schools of business in the United States, permits the inference that business methods in this country as presently practiced, are considered innovative and attractive, despite the prior absence of patent protection.<sup>165</sup>

There is, moreover, substantial anecdotal evidence that competition alone serves as a sufficient spur to innovation in business

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165. See Riordan, *supra* notes 14 and 23.

methods. The rapid cluster of development in the following businesses casts doubt on the need for the added incentive of patents. Consider the growth of fast food restaurants, self-service gasoline stations, quick oil change facilities, supermarkets for food and office supplies, automatic teller devices and other banking services, electronic fund transfers, supplemental insurance for physician services, and alternatives for long-distance telephone services. To the argument that the economy of the United States would function even better with such patent protection, the model casts doubt. The case for broad patent protection, plausible as a matter of theory, has been qualified by the historical/empirical studies of industries in which there had been broad patent protection.<sup>166</sup>

Moreover, conceding the possibility of free-riding as well as outright piracy of business methods, the absence of patent protection would not leave a total void of legal remedies. There are a variety of federal and state alternative regimes of protection.<sup>167</sup> Copyright, misappropriation, unfair competition, and deceptive practices statutes may serve as alternative means of protection.<sup>168</sup> These regimes may serve to furnish the incentive of protection as well as a means of redress against “dirty tricks” by competitors.<sup>169</sup> For example, the software program in which the Boes invention was embedded could have been protected by copyright, although if tested in litigation, the scope of copyright protection would likely have been limited to the literal code in Boes’ program.<sup>170</sup>

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166. See *supra* note 38. Leading economic scholars of industrial organization have expressed their preference for the balance between patent protection and the competitive norm, as follows:

What is needed for rapid technical progress is a subtle blend of competition and monopoly, with more emphasis in general on the former than the latter, and with the role of monopolistic elements diminishing when rich technological opportunities exist.

FREDERIC M. SCHERER & DAVID ROSS, INDUSTRIAL MARKET STRUCTURE AND ECONOMIC PERFORMANCE, 660 (3d. ed. 1990).

167. *Id.*

168. See RESTATEMENT (THIRD) OF UNFAIR COMPETITION (1995).

169. *Id.*

170. See *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240, 1247-8 (3d Cir. 1983); *Computer Associates, Int’l, Inc. v. Altai, Inc.*, 982 F.2d 693, 701 (2d Cir. 1992) (holding literal elements of computer programs, such as source and object code protectible).

Indeed, a comparison of copyright protection with patent protection reveals some potential for over-inclusive protection under the patent regime. Copyright has both statutory and case law limiting doctrines.<sup>171</sup> Thus, the copyright cases afford minimal protection for works of low creativity such as directories and other factual compilations.<sup>172</sup> The Copyright Act itself bars protection for “any idea, procedure, process, system. . . concept, principle, or discovery . . . .”<sup>173</sup> Commonplace standard forms of expression, ideas, elements dictated by efficiency considerations, and elements taken from the public domain are also filtered from copyright protection.<sup>174</sup> Courts in deciding copyright cases have balanced the need for copyright protection with a regard for the competitive process.<sup>175</sup> By comparison with the nuanced treatment afforded by the copyright regime, the Patent Act as interpreted by Judge Rich in *State Street Bank*, is a grant of broad scope, which may or may not be cabined in subsequent cases by general patent principles.<sup>176</sup>

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171. See 17 U.S.C. § 102(b)(1994).

172. See *Feist Publications, Inc. v. Rural Tel. Serv.*, 499 U.S. 340 (1991) (compiling a white page telephone book in alphabetical format fails the Constitutional requirement of originality). See Robert A. Gorman, *Copyright Protection for the Collection and Representation of Facts*, 76 HARV. L. REV. 1569 (1963) (noting a thin protection for fact intensive works); Jane C. Ginsburg, *Creation and Commercial Value: Copyright Protection for Works of Information*, 90 COLUM. L. REV. 1865 (1990); *No “Sweat?” Copyright and Other Protection of Works of Information after Feist v. Rural Telephone*, 92 COLUM. L. REV. 338 (1992) (exploring alternative regimes for the protection of data bases and other fact works).

173. 17 U.S.C. § 102(b)(1994), codifying *Baker v. Selden*, 101 U.S. 99 (1879) (copyright law protects only expression; the accounting system expressed is directed to the patent regime in *dictum*).

174. See *Computer Associates*, 982 F.2d at 710 (limiting the scope of copyright protection to exclude reduced by a filtering process removing items common to industry practice).

175. See *Sega Enterprises v. Accolade, Inc.*, 977 F.2d 1510, 1524 (9th Cir. 1992) (finding copying to be fair use where the grant of protection would have dampened competition); *Wainwright Securities v. Wall Street Transcript Corp.*, 558 F.2d 92, 96 (2d Cir. 1977) (granting protection to bar “chiseling for personal profit.”)

176. See *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352, 1356 (Fed. Cir. 1999) (citing with approval *State Street Bank* statement that calculations integral to a machine or process are subject matter if applied in a useful manner). In H.R. 1907, passed by the House on August 4, 1999, Congress seemingly undertook, albeit indirectly, to underscore that business method patents are like all other method patents with regard to the determination of the date of invention. This reference is not likely to serve as a limiting doctrine for business method patents. H.R. 1907, 106th Cong. § 273 (1999).

In addition to copyright protection, there is protection under the misappropriation rationale.<sup>177</sup> In 1918, the Supreme Court struck down an unfair method of doing business by announcing the amorphous doctrine of a quasi-property interest in uncopyrighted news, dubbing such a taking a misappropriation.<sup>178</sup> Although the federal misappropriation doctrine has been subjected to substantial criticism, courts and legislatures have relied upon it.<sup>179</sup> In the current session of Congress, H.R. 354 has been introduced to protect data base collections on a misappropriation theory.<sup>180</sup> In addition to the misappropriation doctrine announced in the *INS* case, there is a body of federal and state statutory restrictions on unfair competition.<sup>181</sup> Limited federal protection of business methods may be available under section 43(a) of the Lanham Act for the established trade designation of business methods.<sup>182</sup>

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177. See Jones, *supra* note 29.

178. See *International News Service v. Associated Press*, 248 U.S. 215 (1918) (*INS* took advantage of the time differential between New York and California to copy a competitor's news stories in New York and to telegraph them in time for publication as its own in California).

179. Dennis Karjala, *Misappropriation as a Third Intellectual Property Paradigm*, 94 COLUM. L. REV. 2594 (1994); Douglas G. Baird, *Common Law Intellectual Property and the Legacy of International News Service*, 50 U. CHI. L. REV. 411 (1983); Leo J. Raskind, *The Misappropriation Doctrines as a Competitive Norm of Intellectual Property Law*, 75 MINN. L. REV. 875 (1991); See *Carpenter v. United States*, 484 U.S. 19 (1987) (reporter who acted on confidential information gathered for news stories for personal gain in the securities markets held to have defrauded newspaper employer by misappropriating property of the newspaper).

180. H.R. 354, 106th Cong., 1st Sess. (1999), proposing to add a new chapter 14 to Title 17, "Misappropriation of Collections of Information." See 57 (BNA) PATENT, COPYRIGHT, AND TRADEMARK J. 226, 233 (1999).

181. See *Doliner v. Brown*, 21 Mass. App. Ct. 692 (1986) (holding the use of public information to competitive advantage not actionable); RESTATEMENT (THIRD) OF UNFAIR COMPETITION § 1 (1990) (makes actionable the appropriation of trade values, among other competitive harms).

182. 15 U.S.C. § 1125(a) (1998) (barring the use of any "term, name, symbol, or device" which is likely to cause confusion as to the "commercial activities by another person."); *Apple Computer, Inc. v. Franklin Computer Corp.*, 714 F.2d 1240 (3d Cir. 1983); *U.S. Healthcare, Inc. v. Blue Cross of Philadelphia*, 898 F.2d 914 (3d Cir.), *cert. denied*, 111 S. Ct. 58 (1990) (permitting a Lanham Act claim against derogatory characterization of a competitor's method of health care delivery).

### III. ANTITRUST DOCTRINES OF PATENT MISUSE AS A LIMITATION

Given the weakness of the case for patent protection of business methods, the quest for means of limiting the scope of the *State Street Bank* opinion may turn to the doctrine of patent misuse. This equitable doctrine, developed by judges in antitrust cases, evolved as a set of independent principles in the late Nineteenth Century.<sup>183</sup> Because patent misuse was developed in cases involving transactions of assignment, of licensing, or of the sale of products embodying patented technology, the doctrine remains bounded by its transactional origins. As this doctrine functions, a patent transaction can be brought under patent misuse scrutiny by an antitrust enforcement agency as a violation of the antitrust laws, or an antitrust violation may be raised by a vendee/licensee/assignee as a defense to a suit for infringement. When patent misuse is invoked, courts are faced with the task of resolving the tension between the monopoly attributes of a patent and the antitrust law's policy of competition as the preferred norm in markets. The doctrine of patent misuse evolved as judges began to impose limits on the scope of patent rights and to accord priority to the policy of competition by invoking the Sherman Act.<sup>184</sup>

Accordingly, it might appear that the danger of an overly expansive application of business method patents would be checked by the doctrine of patent misuse, however, this restraint is unlikely to materialize. A survey of the principal categories of patent misuse shows that this doctrine is steeped in its transactional origins involving patents for tangible products and processes. Thus, there are no branches of the patent misuse doctrine that are immediately

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183. See *Adams v. Burke*, 84 U.S. (17 Wall.) 453 (1873) (holding patentee's geographic use restriction held unenforceable); *Senza-Gel Corp. v. Seiffhart*, 803 F.2d 661 (Fed. Cir. 1986) (holding patentee's tying arrangement unenforceable). See generally Donald F. Turner, *Legal Restrictions on Exploitation of the Patent Monopoly: An Economic Analysis*, 76 YALE L. J. 267 (1966); Samuel Oddi, *Contributory Infringement/Patent Misuse: Metaphysics and Metamorphosis*, 44 U. PITT. L. REV. 73 (1982); Louis Kaplow, *The Patent-Antitrust Intersection: A Reappraisal*, 97 HARV. L. REV. 1813 (1984).

184. Sherman Anti-trust Act, 15 U.S.C. §§ 1-6 (1994); see also Norman E. Rosen, *Intellectual Property and the Antitrust Pendulum: Recent Developments at the Interface between the Antitrust and Intellectual Property Laws*, 62 ANTITRUST L.J. 669 (1994) (reviewing antitrust developments relating to intellectual property rights).

applicable to patents on business methods which involve neither physical assets and processes nor transactions of sale, license, or assignment. Sales of products embodying patented technology, however, could invoke the traditional misuse doctrines if such sales or licenses are coupled with conditions such as a stated resale price, a promise not to develop competing technology, or a requirement also to buy an unpatented item.<sup>185</sup> Thus, to extend patent misuse principles to business method patents would require judicial extension beyond existing misuse analysis.

Even if there were the judicial inclination to extend the patent misuse analysis to business method patents, some doctrinal modification would be required, since business patents are distinctive in their direct application to the conduct and practices of market actors. In contrast, the patents around which the patent misuse doctrine was developed generally involved the use of the patent to condition subsequent conduct of others such as an assignee, a vendee, or a licensee. While current patent misuse analysis does reach collusive behavior among patentees,<sup>186</sup> business method patents more immediately impact competition because they restrict the market behavior of existing and potential competitors.

This effect of a business method patent can be illustrated by a modification of the above example. Assume that a patent was issued to Circuit City on its method of selling computers. Would patent counsel to a sporting goods retailer be able to write an opinion letter assuring that retailer's management of no exposure to liability for infringement in the following circumstances? Assume further that the client/sporting goods retailer receives a letter from counsel to Circuit City advising that the computer terminal kiosk used to order custom-made skis was infringing Circuit City's patented method of direct sale and distribution. In this circumstance Circuit City could challenge the direct sales method not only of competing electronic device sellers, but also of vendors of items

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185. See *infra* text accompanying notes 198; see also *In Lasercomb Am., Inc. v. Reynolds*, 911 F.2d 970 (4th Cir. 1990) (holding copyright misuse in license provisions promising not to develop competing products and to pay royalties beyond the statutory duration of the copyright).

186. See *United States v. National Lead Co.*, 63 F. Supp. 513 (S.D.N.Y. 1945), *aff'd*, 32 U.S. 319 (1947).

not presently being sold by Circuit City, as well as sellers of items unrelated to the electronics business.

Enforcement of the business method patent in the *State Street Bank* case, unless coupled with price-fixing, tying, or other anti-competitive conduct, would not invoke any of the traditional patent misuse doctrines categories.<sup>187</sup> Accordingly, the misuse doctrine would not be readily at hand as a limiting principle for business method patents. Adaptation of patent misuse principles to business method patents would require substantial judicial innovation.

In the current state of its development, patent misuse doctrines only bar actions indirectly affecting competitors through transactions not directly involving marketing methods.<sup>188</sup> The prior ski distribution example makes this point. Patent misuse would bar the ski manufacturer (holding a patent on the ski) from controlling the resale price of the skis,<sup>189</sup> from claiming royalties from a licensee-manufacturer (on a patented ski feature) beyond the term of the patent,<sup>190</sup> from requiring the retailer to purchase an unpatented article as a condition of the license to resell the patented skis,<sup>191</sup> from conditioning the license to resell on a promise not to deal with a competitor,<sup>192</sup> from refusing to license patents individually, but only in a bundle,<sup>193</sup> and from charging differential royalties to competing licensees so as to impair licensee competition.<sup>194</sup> Since none of these limitations would be directly applicable to the example posed above, the need for judicial innovation would seem to be required.

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187. See, e.g., Phillip E. Areeda & Herbert Hovenkamp, *ANTITRUST LAW* 704, 707 (1996).

188. *Id.*

189. See *United States v. Line Materials Co.*, 333 U.S. 287 (1948).

190. See *Brulotte v. Thys Co.*, 379 U.S. 29 (1964); *Meehan v. PPG Industries*, 802 F.2d 881 (7th Cir. 1986).

191. See *Morton Salt Co. v. G.S. Suppinger Co.*, 314 U.S. 488 (1942).

192. See *Dubuit v. Harwell Enterprise*, 336 F. Supp. 1184 (D.N.C. 1971).

193. *Zenith Radio Corp. v. Hazeltine Research Corp.*, 395 U.S. 100 (1969) (bundle licensing permitted if done for convenience, absent coercion).

194. *Peelers Co. v. Wendt*, 260 F. Supp. 193 (D.Wash. 1966); *LaPeyre v. F.T.C.*, 366 F.2d 117 (5th Cir. 1966) (holding that differential royalties may constitute both patent misuse and an unfair method of competition in violation of § 5 of the Federal Trade Commission Act).

A judge undertaking the task of adapting existing patent misuse principles to the new task would encounter a further complication. Since the 1980's there has been a debate among judges as to the very foundation of patent misuse as a body of rules. On the one side, Judge Richard Posner has written that refinements of antitrust analysis should absorb and supersede the traditional doctrine of patent misuse.<sup>195</sup> As he explained:

The [patent misuse] doctrine arose before there was any significant body of federal antitrust law, and reached maturity long before that law. . .attained its present scope. Since the antitrust laws as currently interpreted reach every practice that could impair competition substantially, it is not easy to define a separate role for a doctrine also designed to prevent an anticompetitive practice—the abuse of a patent monopoly.<sup>196</sup>

In the Federal Circuit, there was initially a split on this issue.<sup>197</sup> One 1986 opinion of the Federal Circuit seemingly agreed with Judge Posner, explaining that, “[r]ecent economic analysis questions the rationale of holding any licensing practice per se anticompetitive.”<sup>198</sup> In a later opinion that year, however, the court said that a Supreme Court ruling would be required in order for lower courts to abandon patent misuse as an independent doctrine, stating, “[w]e are bound. . .to adhere to existing Supreme Court guidance in this area. . . .”<sup>199</sup>

Subsequently, the Federal Circuit moved toward the Posner position in *Mallinckrodt*.<sup>200</sup> There, the Federal Circuit upheld a “single use” label on a refillable medical device sold by the manufacturer to a hospital.<sup>201</sup> In reversing the district court’s grant of summary judgment for the defendant hospital which breached the condition, Judge Newman characterized the lower court’s opinion

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195. *USM v. SPS Technologies, Inc.*, 694 F.2d 505 (7th Cir. 1982).

196. *Id.* at 511.

197. *See, e.g., Windsurfing International v. AMF, Inc.*, 782 F.2d 995 (Fed. Cir. 1986); *Senza-Gel Corp. v. Seiffert*, 803 F.2d 661 (Fed. Cir. 1986).

198. *Windsurfing International*, 782 F.2d at 1001, n.9 (1986).

199. *Senza-Gel Corp.*, 803 F.2d at 665, n.5 (1986).

200. *Mallinckrodt, Inc. v. Medipart, Inc.*, 976 F.2d 700 (Fed. Cir. 1992).

201. *Id.* at 708.

as mistakenly resting on patent misuse.<sup>202</sup> In her opinion, she reasoned that antitrust principles had “trumped” the long standing “first sale” doctrine.<sup>203</sup> As she stated, “[t]he appropriate question is whether Mallinckrodt’s restriction is reasonably within the patent grant, or whether the patentee has ventured beyond the patent grant. . .into. . .having an anti-competitive effect not *justifiable under the rule of reason*.”<sup>204</sup>

The *Mallinckrodt* decision can be interpreted as expressing a preference for the Posner position because the court’s rationale draws on antitrust precedent unrelated to patent litigation.<sup>205</sup> This opinion also can be viewed as reaching for the antitrust rule of reason analysis to vacate the “first sale” doctrine, a long-standing, limiting principle of patent jurisprudence and one which is grounded on misuse principles.<sup>206</sup> Accordingly, there is little reason to anticipate that this panel of the Federal Circuit will undertake to apply patent misuse principles to limit the scope of business method patents in the near future.

Recently, the existence of an independent patent misuse doctrine was dealt another diminishing blow by the Joint Department of Justice/Federal Trade Commission Guidelines.<sup>207</sup> In undertaking to clarify the significance of intellectual property rights in anti-trust analysis, the Guidelines clearly reject any role for an independent set of patent misuse principles as follows:

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202. *Id.*

203. *Id.*

204. *Id.* at 708 (emphasis added); see also, Richard H. Stern, *The Unobserved Demise of the Exhaustion Doctrine in U.S. Patent Law*, 15 EUR. INTELL. PROP. REV. 460 (1993) (criticizing the opinion); *Adams v. Burke*, 84 U.S. (17 Wall.) 453 (1873); *Bauer & Cie v. O’Donnell*, 229 U.S. 1, 16 (1913) (announcing the first sale or exhaustion doctrine—the first sale permits the vendee to resell the patented item free of any conditions imposed by the patentee); the same analysis was applied to a copyright in *Bobbs-Merrill Co. v. Straus*, 210 U.S. 339 (1908).

205. Judge Newman cites *Continental TV v. GTE Sylvania*, 433 U.S. 36 (1977), for its holding that vertical restraints are to be judged as antitrust violations under the rule of reason. However, that case involved territorial restraints in the distribution of unpatented products. *Mallinckrodt*, 976 F.2d at 706.

206. *Id.*

207. UNITED STATES DEPARTMENT OF JUSTICE INTELLECTUAL PROPERTY GUIDELINES (April 6, 1995), issued jointly by the U.S. Department of Justice and the Federal Trade Commission.

The agencies apply the same general antitrust principles to conduct involving intellectual property that they apply to conduct involving any other form of tangible or intangible property. . . . Intellectual property has important characteristics. . . that distinguish it from many other forms of property. *These characteristics can be taken into account by standard antitrust analysis, however, and do not require the application of fundamentally different principles.*<sup>208</sup>

#### CONCLUSION

The broad sweep of the *State Street Bank* opinion remains a cause for concern. The doctrinal justification for such a reversal of the traditional treatment of business methods remains obscure, while the institutional impetus for expansion of patent protection is already apparent.<sup>209</sup> This imbalance between justification and burgeoning use poses a dilemma for the decision-makers involved. While the PTO seems to have fully accepted the *State Street Bank* decision as a platform for the expansion of the grant of such patents, courts and perhaps Congress may yet perceive the need for restraint. For, despite the *State Street Bank* panel's sweeping, unqualified rejection of the business method exception, caution is warranted. By failing to provide a rationale upon which a workable regime of such patents could be administered, the decision leaves considerable doubt as to the wisdom of rejecting the prior business method exception. Contemplation of some likely scenarios of the expansive protection of business methods among competitors does little to dispel the conclusion that the prior rule of exception, albeit inarticulate, did represent practical wisdom akin to an efficacious home remedy. Business method patents are so closely linked to interactive market emulation as to distinguish them from the results of laboratory/experimental activity. In these circumstances, a careful case by case analysis of business method claims is warranted.

Courts should recognize the distinctive nature of business

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208. *Id.* at § 2.0 (emphasis added).

209. See "*Boom*" *supra* note 7 (reporting a "boom" in business method patents which followed the *State Street* decision). See also, *supra* text following note 155 and *supra* pp. 64-67 for a description of some recent patents.

methods in terms of both origin and function. Business method patents pose a direct restraint on the conduct of competitors, actual and potential. The effect of the decision in the *State Street Bank* case is to announce patent protection without any suggestion of limitation. This decision is most disturbing for its lack of an organizing principle. It rejects the old rule and only suggests a need for the added incentive of patent protection. While it is inviting to interpret the text of section 101 to include every aspect of human creativity, competitive markets are an arena in which such an interpretation will not work well.<sup>210</sup> Business methods differ from the bulk of patent claims in that business methods are developed in the arena of competition, rather than in a laboratory environment. Interactive emulation more than innovation is the driving force of business method changes. Insensitivity to this feature of business methods leads to a failure to strike the proper balance between the incentive/reward attributes of a patent and its potential for a monopoly, i.e. "competition-dampening uses."<sup>211</sup> Without some constraints, patents on business methods can become the source of multiplying royalty claims and burgeoning infringement litigation. Such claims can impede rather than induce competitive conduct; the resulting transaction costs are likely to impinge negatively on consumer welfare.

Because this decision unleashed this new rule without analysis or explanation, it remains for courts, practitioners, and commentators to undertake the necessary adjustments required by the distinctive nature of this subject matter. Minimizing the potentially anti-competitive effects of business method patents noted in the examples above will require the application of some doctrines of limitation. As presently constituted and interpreted, patent law does not readily provide such doctrines. In contrast with the Copyright Act,<sup>212</sup> the Patent Act lacks defined limits on protectible subject matter.<sup>213</sup> As noted earlier, the antitrust doctrine of patent misuse is not a likely source of limiting principles.<sup>214</sup> While it is beyond

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210. 17 U.S.C. § 101 (1994).

211. See *supra* note 7 for a statement of the dual economic attributes of patents.

212. 17 U.S.C §1 *et seq.*

213. 35 U.S.C. § 101 (1994).

214. See, e.g., *Shaw v. Lindenheim*, 919 F.2d 1353 (C.A.9 1990) (holding copyright

the present scope to develop such doctrines, it is possible to suggest some approaches. Copyright law offers several guides. For example, commonplace phrases (verbal or digital), factual/historical material, and trivial contribution are by case law excluded as protectible subject matter of copyright.<sup>215</sup> These restrictions might translate into barring minor variations on traditional methods of delivery of products and of services from business method patent protection. Similarly, section 102(b) of the Copyright Act excepts from protection, “any procedure, process, system [and] method of operation.”<sup>216</sup> This limitation might be transposed to bar from patent protection recognized methods of accomplishing transactions. Thus, minor variations of established direct selling methods would not gain protection based solely on the mode of execution or on being applied to a new product or service. Such judicially-crafted limits could be developed on a case by case basis, were judges persuaded of the need for them. Such adjustments are not likely in the short run.

More immediate limits can be procedural. For the reasons noted above, courts would do well to limit severely the grant of injunctive relief in these cases and to invoke the language of the *State Street Bank* decision prospectively, “business methods have been, and should have been subject to the same legal requirements for patentability as applied to any other process or method.”<sup>217</sup>

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protects author’s expression, and facts and ideas are not protected); *see also*, *Pecarsky v. American Broadcasting Co.*, 603 F.Supp. 688 (D.C. Cir. 1984) (holding news reporter’s facts are not protected by copyright law).

215. *See Feist Publications, Inc. v. Rural Tel. Serv. Co.*, 499 U.S. 340 (1991).

216. 17 U.S.C. § 102(b)(1994).

217. *State Street Bank*, 149 F.3d. at 1375. The perversity of granting patent protection to incremental variations in sales methods is illustrated by the injunction issued recently by District Court Judge Marsha J. Pechman in Seattle. This injunction barred Barnesandnoble.com from executing retail purchases on the Internet by “one click ordering,” the technique now common whereby a customer having previously registered with the vendor, clicks on a single button on the screen to order an item. Amazon.com, the plaintiff, had previously patented this “one click” method. Seemingly acknowledging the limited scope of the Amazon patent, the Judge wrote, “The evidence indicates that Barnesandnoble.com can modify its . . . [one click] feature with relative ease.” In response, the chief executive of Barnesandnoble.com stated that the company would institute a new feature next year in which a button would appear on the screen next to a book title, by clicking on this button, the customer would see several options of payment and delivery. Clicking on any one of these buttons completes the order.

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Computer-assisted methods of solving business problems should not become a shield against applying all of the Patent Act requirements to business method claims.