

## INTERNET BUSINESS MODEL PATENTS: OBVIOUS BY ANALOGY

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A patent is supposed to protect intellectual property, something truly innovative. But here's what's going on: Common business practices—like bargaining for a hotel room or speeding up a purchase—are automated by software and owners claim a “new” invention. What a sneaky way to do business, taking patent laws to ridiculous extremes. What's next? A patent for a web site's background color?<sup>1</sup>

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1. Jesse Berst, *How Patent Attorneys are Stealing Our Future*, ZDnet (Jan. 18, 2000), available at [http://www.zdnet.com/anchordesk/story/story\\_4364.html?chkpt=zdhnews02](http://www.zdnet.com/anchordesk/story/story_4364.html?chkpt=zdhnews02).

The above quotation is representative of the seemingly unprecedented public outcry over the granting of Internet business model patents by the U.S. Patent and Trademark Office (“USPTO”). In news articles, Internet chat room commentary, hallway conversations, and other venues, the oft-repeated theme has been that many Internet business method “inventions” being patented are obvious, that something done in the “real” world is simply being applied to the Internet environment.<sup>2</sup>

The uproar surrounding online marketer Amazon.com’s enforcement of one of its Internet business model patents provides a fitting illustration of the issues engendered by such patents. In 1999, online book retailer Amazon.com obtained U.S. Patent No. 5,960,411 (the “411” or “1-click” patent) on a “Method and System for Placing a Purchase Order Via a Communication Network.”<sup>3</sup> The patent claims cover, among other things, a method of allowing a returning Amazon.com customer who has previously supplied Amazon.com with relevant identifying, shipping, and charge card information to specify and order a product from Amazon.com using a “single action,” such as the click of a mouse button, and no shopping cart model. “1-Click” is Amazon.com’s registered service mark for this feature.<sup>4</sup>

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2. See, e.g., Stephen Pizzo, *Who’s Really Being Protected?*, O’Reilly Network, available at <http://www.oreillynet.com/pub/a/patents/2000/05/24/PizzoFiles.html> (May 24, 2000) (Tim O’Reilly: “[T]he scorn I hear from my customers, the working developers . . . is that people are patenting trivial pieces that are well known, that are sort of obvious to anybody of ordinary skill, that are routine applications of Internet technology to fields that are well-known. Simply by adding ‘Internet’ to it, you sort of say, ‘Oh this is novel,’ when in fact it isn’t.”) (On file with the Michigan Telecommunications and Technology Law Review (MTTLR)); David Sims, *Amazon.com Patents Enemy-Making Process*, The Standard (Feb. 28, 2000), available at <http://www.thestandard.com> (“Critics say the patent office doesn’t have the time or the training to keep up with technology, and that’s why it keeps awarding the patents to obvious . . . inventions.”).

3. U.S. Patent No. 5,960,411 (issued Sept. 28, 1999). Claim 1 of the ‘411 patent reads:

a method of placing an order for an item comprising: under control of a client system, displaying information identifying the item; and in response to only a single action being performed, sending a request to order the item along with an identifier of a purchaser of the item to a server system; under control of a single-action ordering component of the server system, receiving the request; retrieving additional information previously stored for the purchaser identified by the identifier in the received request; and generating an order to purchase the requested item for the purchaser identified by the identifier in the received request using the retrieved additional information; and fulfilling the generated order to complete purchase of the item whereby the item is ordered without using a shopping cart ordering model.

*Id.*

4. U.S. Service Mark Registration No. 2264368.

In December of 1999, just in time for the height of the holiday shopping season, Amazon.com sued a competitor, Barnesandnoble.com for infringement of the '411 patent, obtaining a preliminarily injunction against Barnes and Noble's launch of their single-action "Express Check-out" function.<sup>5</sup> Amazon.com's actions incited a wave of negative publicity for the company, a boycott, and hundreds of messages decrying the obviousness of the "1-Click" patent.<sup>6</sup>

But this is "obviousness" in the lay, non-patent sense. Are such inventions really "obvious," and hence unworthy of monopoly protection, under the Patent Act?<sup>7</sup> While the patentability of each "invention" must be determined on a case-by-case basis, there are very real reasons for the generalized concern<sup>8</sup> regarding Internet business model patents.<sup>9</sup>

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5. *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 73 F. Supp. 2d 1228 (W.D. Wash. 1999), vacated by 239 F.3d 1343 (Fed. Cir. 2001). The Federal Circuit vacated the preliminary injunction and remanded the case to the district court on February 14, 2001. *Id.*

6. See, e.g., *My Conversation with Jeff Bezos—Your Responses . . .*, O'Reilly Network, available at [http://www.oreilly.com/cgi-bin/amazon\\_patent\\_0303.pl](http://www.oreilly.com/cgi-bin/amazon_patent_0303.pl) (2000). 10,000 people signed computer resource book author Tim O'Reilly's open letter petition protesting Amazon.com's 1-click" and Affiliates patents, and more than 700 people responded to summary of his conversation with Amazon.com CEO Jeffrey Bezos. Many of the comments used the term "obvious" when discussing Internet business model patents such as the Amazon.com "1-Click" and Affiliates patents. The following commentary by J. Michael McKay is exemplary:

March 13th, 2000 10:09 AM: In 1981 my brother and I discussed the implications of the Internet. He had just purchased a MAC classic and signed on to compute. We were not the only people talking and writing about a brave new world on the horizon where people would do business over the Internet. One click customer satisfaction was just so obvious. If you could open a folder on a MAC or close a window, you were prepped to think and see where things would go. The idea of one-click solutions was what the Internet was all about in my mind. Networking and communication on the Internet is all that I thought about. The Jetsons probably have an episode where you click on a T.V. screen and get something. I can't believe that any of this was new or implemented solely by Amazon. I know that it was so obvious that this would be, had to be, even 17 years ago. Who wrote the first cookie. . . . Didn't that person see all of this and have it all laid out quite well in his/her mind? I certainly believe that Amazon has been caught stealing the whole cookie jar and maybe should not be allowed to have (or use) any more cookies at all.

*Id.*

7. 35 U.S.C. §§ 1–376 (1999).

8. See, e.g., Rochelle Cooper Dreyfuss, *Are Business Method Patents Bad for Business?*, 16 SANTA CLARA COMPUTER & HIGH TECH. L.J. 263 (2000) (questioning whether patent law is the appropriate tool for encouraging the development of new business methods); John R. Thomas, *The Patenting of the Liberal Professions*, 40 B.C. L. REV. 1139 (1999) (advocating a standard of industrial applicability for patentability); James Gleick, *Patently Absurd*, N.Y. TIMES MAG., Mar. 12, 2000, at 44 ("In ways that could not have been predicted even a few years ago, the patent system is in crisis. A series of unplanned mutations have transformed patents into a positive threat to the digital economy.").

9. In the literature, the terms "business method" and "business model" are often used interchangeably. Although Internet (or "Internet-implemented") business model patents are,

In a 1998 decision, *State Street Bank & Trust Co. v. Signature Financial Group Inc.*,<sup>10</sup> the Court of Appeals for the Federal Circuit “eliminated” the business methods exception to patentable subject matter,<sup>11</sup> resulting in a veritable flood of business method patent applications, many Internet related, into the USPTO, where previously there had been just a trickle.<sup>12</sup> Internet business model patents have issued for a variety of concepts including auctions, reward programs, advertising, customer referral programs, gambling, and purchasing transactions.<sup>13</sup> As such patents are granted by the USPTO, infringement suits asserting such patents are sprouting like weeds,<sup>14</sup> wreaking havoc with the “free-sharing” premise

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to some extent, software patents, software patents per se are not the focus of this Article. Instead, the phrase “Internet business model patents” as used in this Article refers to a particular subset of software patents—those directed to business models or concepts, expressed as methods, systems, or processes, for conducting various aspects of electronic commerce—the buying and selling of goods and/or services on the Internet. It should be noted that such patents may also contain apparatus and article of manufacture claims implicating the computer environment in which the model operates. Many of the issues discussed herein as relevant to Internet business model patents are also relevant to other kinds of business model patents as well, largely because of similar prior art and USPTO competency limitations.

10. 149 F.3d 1368 (Fed. Cir. 1998), *cert. denied*, 525 U.S. 1093 (1999).

11. To the extent it ever actually existed. *See* William D. Weise, *Death of a Myth: The Patenting of Internet Business Models After State Street Bank*, 4 MARQ. INTELL. PROP. L. REV. 17, 18 (2000) (positing that “the business method exception never really existed.”). As noted by Judge Rich in *State Street*, “Since its inception, the ‘business method’ exception has merely represented the application of some general, but no longer applicable legal principle . . . . Since the 1952 Patent Act, business methods have been . . . subject to the same legal requirements for patentability as applied to any other process or method.” 149 F.3d at 1375. Nevertheless, perception is often stronger than reality, and the perception that business methods were not generally viewed as patentable subject matter prior to *State Street* is clearly the dominant factor behind the dramatic increase in filings of applications of this type with the USPTO.

12. In fiscal year 1999, 2658 patent applications were filed in Class 705, the USPTO class (Modern Business Data Processing) that includes Internet business model patents. *USPTO White Paper: Automated Financial or Management Data Processing Methods*, available at <http://www.uspto.gov/web/menu/busmethp/class705.htm> (visited Feb. 23, 2001) [hereinafter *USPTO White Paper*].

13. *See, e.g.*, U.S. Patent No. 5,794,207 (issued Aug. 11, 1998) (“Method and apparatus for a cryptographically assisted commercial network system designed to facilitate buyer-driven conditional purchase offers”), U.S. Patent No. 6,049,778 (issued Apr. 11, 2000) (“Method and apparatus for administering a reward program”), U.S. Patent No. 5,948,061 (issued Sept. 7, 1999) (“Method of delivery, targeting, and measuring advertising over networks”), U.S. Patent No. 6,029,141 (issued Feb. 22, 2000) (“Internet-based customer referral system”), U.S. Patent No. 5,800,268 (issued Sept. 1, 1998) (“Method of participating in a live casino game from a remote location”), U.S. Patent No. 5,999,596 (issued Dec. 7, 1999) (“Method and system for controlling authorization of credit card transactions”).

14. *See, e.g.*, *Fantasy Sports Properties, Inc. v. Sportsline.com, Inc.*, 103 F. Supp. 2d 886 (E.D. Va. 2000); *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 73 F. Supp. 2d 1228 (W.D. Wash. 1999), *vacated by* 239 F.3d 1343 (Fed. Cir. 2001); *Troy Wolverton, Priceline.com files suit against Microsoft*, CNET News.com (Oct. 13, 1999), available at <http://news.cnet.com/news/0-1007-200-851952.html>; *eBay Faces Patent Infringement Lawsuit*, Internet News (Mar. 24, 1999), available at <http://www.internetnews.com/>

on which the Internet developed and originally flourished.<sup>15</sup> In addition, the steadily increasing numbers of eyebrow-raising Internet business model patents issued by the USPTO are generating concerns by academics, e-commerce players and would-be players, consumers, and others as to whether the patent system has spun out of control.

While much has been written<sup>16</sup> and much still could be said on the topic of whether Internet business models should constitute patentable subject matter, it is time to focus on the “real.” The reality of the current situation is that regardless of whether or not such business models should be patentable, Internet business model patents are here and patentees asserting them will not be ignored.

When a judicial decision creates a controversy in an important area, it is easy to suggest resort to Congress to fix the problem. In fact, a bill directed to Internet business model patents has already been introduced in Congress and more likely will follow.<sup>17</sup> It is unlikely that the bill, or one like it, will become law any time in the near future, however. The lengthy meandering through Congress of the recently enacted American Inventors Protection Act of 1999 vividly illustrates how protracted the process of enacting new patent legislation can be.<sup>18</sup>

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bus-news/print/ 0,1089,3\_85421,00.html; see also Brenda Sandberg, *PTO Taking Closer Look at Business Method Patents*, Corporate Intelligence (2000), available at <http://www.corporateintelligence.com/> (“People are culling through patents that issued maybe 5 or 10 years ago and stretching them to get an interpretation that would cover the Internet.”)

15. Opensource.org, *Frequently Asked Questions*, available at <http://www.opensource.org/advocacy/faq.html> (2001) (“Everybody who sends email or uses the Web is using open-source [free] software all the time. The running gears of the Internet . . . are almost all open source.”). This premise relating to the Internet appears to be alive and well among many in the general public. For example, in a recent National Law Journal/ Decision Quest Juror Outlook Survey, almost half of the 1,000 potential jurors polled think it is “perfectly fine for people to download music or movies from the Internet for personal use without paying.” Victoria Slind-Flor, *Jurors Polled on Net, IP Law*, NAT’L L. J., Oct. 16, 2000, at A1.

16. See, e.g., Dreyfuss, *supra* note 8; Thomas, *supra* note 8 (advocating a standard of industrial applicability for patentability).

17. The bill, HR 5364, is entitled the Business Method Improvement Act of 2000. Apparently, the bill was designed to “create the presumption that the computer-assisted implementation of an analog-world business method is obvious and thus is not patentable.” Kathleen Ellis, *Net Patent Bill Introduced*, Wired News (Oct. 3, 2000), available at <http://www.wired.com/news/politics/0,1283,39238,00.html>. The bill has many difficulties, including its definition of business methods and the special treatment such methods would be subject to in the USPTO. However, a full discussion of the problems associated with the bill is beyond the scope of this article. *But see*, Steven J. Schumaker, *Business Method Improvement Act: Creating a Different Class of Patent?*, Corporate Intelligence (Nov. 22, 2000), available at <http://www.corporateintelligence.com/issues.cfm?Story=43853&Author=Schumaker>; posting of Gregory Aharonian, srctran@world.std.com, to patent-news@world.std.com (Oct. 11, 2000) (copy on file with Author) (providing a scathing critique of the bill).

18. Patent legislation is often slow to move through Congress. The most recently passed legislation, the AIPA of 1999, knocked around Congress, in varying forms, for at least five

More important, an act of Congress is neither necessary nor particularly desirable as a means for adequately cabining the scope of Internet business model patents. Courts and the USPTO can appropriately define the scope of Internet business model patent claims by proper application of existing patent law doctrines, to wit, the doctrine of analogous art and the doctrine of equivalents.<sup>19</sup> This Article contends that part of the problem of Internet business model patents is the narrow view of analogous art employed by judges and USPTO examiners which largely excludes relevant “real-world” prior art in the determination of non-obviousness under § 103 of the Patent Act.<sup>20</sup> Consequently, part of the solution lies in helping courts and the USPTO properly to define analogous art for a particular invention. To do so, judges and examiners must recognize the interchangeability of computer programming (i.e. “e-world” activities) to perform a function, with human or mechanical performance of the same function (i.e. “real world” activities). Such recognition is consistent with binding United States Supreme Court precedent and requires a reversal of the trend towards narrow analogous art definitions in the obviousness inquiry.

This Article also identifies an increased potential for abuse of the doctrine of equivalents in the Internet business model context due to a combination of factors that impact the usefulness of traditional controls on the application of the doctrine of equivalents.<sup>21</sup> Such factors include a dearth of properly trained business method USPTO examiners, and a

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years before passage in November 1999. The AIPA actually contains a provision directed to business method patents. However, that provision, codified in Subtitle C of the Act, only creates an infringement defense for an earlier inventor of a method of doing or conducting business that was later patented by a third party. The defendant must have reduced the infringing subject matter to practice, i.e. actually practiced the process, at least one year before the effective filing date of the patent application, and made commercial use of the invention in the U.S. prior to the effective filing date of the patent application to be eligible for the defense. 35 USC § 273 (1999).

19. Under the doctrine of analogous art, only art in the same field of endeavor as the inventor or reasonably pertinent to the problem facing the inventor can be considered in determining whether a given invention meets the Patent Act’s requirement of non-obviousness. *See* *Application of Wood*, 599 F.2d 1032, 1036 (C.C.P.A. 1979). Under the doctrine of equivalents, an accused device or method that does not literally infringe the claims of a patent may still be deemed to infringe if it performs substantially the same function in substantially the same way to achieve substantially the same result, or if there are insubstantial differences between the accused device or method and the claimed invention. *See* *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29 (1997).

20. 35 U.S.C. § 103 (1999).

21. The most notable control on application of the doctrine of equivalents is the doctrine of prosecution history estoppel. This doctrine allows a court to limit or even eliminate the scope of equivalents for a claim element based on amendments or arguments made by the patent applicant during prosecution of the application in the USPTO. *See* *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co.*, 234 F.3d 558 (Fed. Cir. 2000).

lack of business method and software prior art readily available to examiners to consult in assessing the patentability of such methods. To the extent such factors result in Internet business model patents with the scope, by default, of “pioneer” patents,<sup>22</sup> limitations on application of the doctrine of equivalents are necessary.

To lay the groundwork for this dual analysis, Part I of this Article provides a look at Internet business model patents in light of key patentability requirements mandated by the Patent Act. Part II traces the evolution of the analogous art component of the non-obviousness determination and illustrates how the malleability of the doctrine, as exemplified in several Court of Appeals for the Federal Circuit decisions, has particular relevance to prior art definitions for Internet business model patents. Part III of this Article then examines the doctrine of equivalents and explores how the likelihood of improper application of this doctrine in the Internet business model context is increased.

Recognizing that feasible solutions are not limited to doctrinal remedies, this Article also mentions other, more drastic ways of addressing the Internet business model conundrum. It concludes, however, that rational exercise of the elasticity present in both the doctrine of analogous art and the doctrine of equivalents provides a better approach to defining proper Internet business model claim scope.

## I. INTERNET BUSINESS MODEL PATENTS AND THE PATENT ACT

To fully comprehend the issues surrounding Internet business model patents, it helps to understand the statutory requirements for patentability. Viewing Internet business model patents in light of key Patent Act requirements reveals both problems and solutions in fitting such innovations into our current patent law framework. The Patent Act<sup>23</sup> specifies four key requirements for an invention to be patented:

- (1) it must be useful, and fall within one of the § 101<sup>24</sup> classes of patentable subject matter,

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22. The term “pioneer patent” refers to a patent on a ground-breaking invention, such as the telegraph. Pioneer patents are generally given a more expansive interpretation under the doctrine of equivalents than is accorded less noteworthy innovations.

23. 35 U.S.C. §§ 1–376.

24. 35 U.S.C. § 101 (“Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.”).

- (2) it must be novel, as described in § 102,
- (3) it must be non-obvious as described in § 103,<sup>25</sup> and
- (4) it must be properly described and claimed, in accordance with § 112, including a description of the best mode known to the inventor for practicing the invention at the time of filing a patent application with the USPTO.<sup>26</sup>

If the USPTO Examiner in charge of the patent application concludes that the invention meets these and other<sup>27</sup> requirements, a patent covering the claimed invention, and endowed with a presumption of validity,<sup>28</sup> will issue to the inventor or his assignee.

#### *A. The Puzzle of Patenting Ideas*

To qualify as patent eligible subject matter under § 101 of the Patent Act, an invention must be classifiable as a process, machine, article of manufacture, or composition of matter.<sup>29</sup> Laws of nature, abstract ideas, and natural phenomena do not qualify as patentable subject matter. According to the United States Supreme Court, patentable subject

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25. 35 U.S.C. § 103 provides, in pertinent part:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains . . . .

(c) Patentability shall not be negated by the manner in which the invention was made. Subject matter developed by another person, which qualifies as prior art only under one or more of subsections (e), (f), and (g) of section 102 of this title, shall not preclude patentability under this section where the subject matter and the claimed invention were, at the time the invention was made, owned by the same person or subject to an obligation of assignment to the same person.

35 U.S.C. § 103.

26. 35 U.S.C. § 112 provides, in pertinent part:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same, and shall set forth the best mode contemplated by the inventor of carrying out his invention. The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

35 U.S.C. § 112. A discussion of issues concerning the requirements of § 112 and Internet business model patents is beyond the scope of this Article.

27. For example, timely payment of various fees, submission of oath and other appropriate documentation, etc.

28. 35 U.S.C. § 282 (1999).

29. 35 U.S.C. § 101 (1999).



matters consist of “anything under the sun made by man.”<sup>30</sup> In *State Street*, the Federal Circuit held that if an invention has “practical utility,” if it produces a “useful, concrete and tangible result,” it is statutory subject matter under § 101.<sup>31</sup> Claims to Internet business models appear to meet these requirements, as the claims are generally directed toward methods or processes for achieving a particular, useful result, be it, for example, a method for negotiating the sale of goods and services,<sup>32</sup> or a method for making collaborative recommendations to customers.<sup>33</sup>

But appearances can be deceiving. Arguably, because of the peculiar nature of Internet business model patents, what is being claimed is, in some cases, still just an “idea.” In *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, the district court effectively concluded that *any* single action ordering system, no matter *how* it worked, would infringe Amazon.com’s patent.<sup>34</sup> It is well understood that a claim to a composition of matter, such as a new drug, covers the drug no matter what process or method is used to produce the drug. A method used to manufacture a product may also be patented.<sup>35</sup> If competitors can develop other methods of producing the product that do not come within the claims of the patent, they are free to do so.<sup>36</sup> But if the patented process is the only feasible way to produce the product, the patentee has, in effect, an absolute monopoly on production of that product.<sup>37</sup> The Amazon.com patent claims a “method,” however, by its use of functional claim language, its broadest claims arguably cover virtually all methods (e.g. different ways of writing computer code to implement the specified functions, since code specifics are not detailed in the patent) used to produce that particular “method.”

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30. *Diamond v. Chakrabarty*, 447 U.S. 303 (1980).

31. 149 F.3d 1368, 1375 (Fed. Cir. 1998). 35 U.S.C. § 101 further specifies that the invention must also satisfy the other conditions and requirements of the Patent Act. 35 U.S.C. § 101 (1999).

32. *See* U.S. Patent No. 6,035,288 (issued Mar. 7, 2000) (“Interactive computer-implemented system and method for negotiating sale of goods and/or services”).

33. *See* U.S. Patent No. 6,064,980 (issued May 16, 2000) (“System and methods for collaborative recommendations”).

34. 73 F. Supp. 2d 1228, 1244 (W.D. Wash. 1999), *vacated by* 239 F.3d 1343 (Fed. Cir. 2001) (“the term ‘single action’ . . . appears to refer to one action . . . that a user takes to purchase an item once the following information is displayed to the user: (1) a description of the item; and (2) a description of the single action the user must take to complete a purchase order for that item.”). There was no meaningful discussion or analysis by the court of the nature of the underlying computer code used to implement single action ordering for either Amazon.com or Barnesandnoble.com.

35. *See* WILLIAM B. BENNETT, *THE AMERICAN PATENT SYSTEM: AN ECONOMIC INTERPRETATION* 132 (1972).

36. *See id.*

37. *See id.*

Professor Merges noted a similar concern with Priceline.com's U.S. Patent No. 5,797,127, on a "[m]ethod, apparatus, and program for pricing, selling, and exercising options to purchase airline tickets":

The emphasis on the commercial function of the program . . . together with the complete generality of the hardware and software elements ("central controller," "at least one terminal," "CPU," "memory," and "a program" are all completely general), leads to the conclusion that this is a patent on the *business idea* of using computers, in particular the Internet, to price and purchase options on airline tickets.<sup>38</sup>

So, in these Internet business model patents, is what is being claimed really a "method" or just a well-disguised idea? This question implicates a classic software patent issue: identifying the appropriate "level of abstraction" at which to view a claimed invention. As described by Professors Lemley and Cohen:

[S]oftware patents are not normally claimed or defined in terms of the actual code used by the patentee. Rather, the technological advance embodied in the code is described in the claim; interpretation proceeds according to standard canons of claim construction. Because all patents are ultimately defined by text, this linguistic problem exists for all kinds of patents. A patent claim that is written at a higher conceptual level will be interpreted differently than one written with more concrete detail. The problem is aggravated in the case of software patents, however. Many software patents, especially first-generation ones, give little or no information in the patent claim (or indeed in the specification) about the software program itself. Even a later-generation software patent claim may tell the court very little about the software program in question, leading to greater variance in the level of abstraction selected. Software is in certain respects more malleable than other types of inventions (such as pharmaceuticals or mechanical devices). Two pieces of code may produce the same result and may even use very similar algorithms to do so, but may still operate differently, for example, by extracting output data from a memory array in a different manner. If the difference corresponds to limiting language in the patent claim(s), there can be no equivalence.<sup>39</sup>

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38. Robert P. Merges, *Patent System Reform*, 14 BERKELEY TECH. L.J. 577, 580 (1999) (emphasis added).

39. Mark A. Lemley & Julie E. Cohen, *Patent Scope and Innovation in the Software Industry*, 89 CAL. L. REV. 1, 47-48 (2001) (citations omitted).

Application of the level of abstraction concept to patentability and patent validity assessments of Internet business models seems appropriate. If Internet business model claims are allowed in forms in which limitations to software operations are not discernable—arguably the case with the “1-click” patent—it will be virtually impossible for a court to even identify a level of abstraction for claim analysis other than at the idea level.<sup>40</sup> Because of the position taken by the Federal Circuit in *State Street* reversing a decision on this very conundrum, however, § 101 currently is not a bar to Internet business model patentability.<sup>41</sup>

### B. *Anticipation: A Rare Occurrence*

Section 102 only prevents an applicant from obtaining a patent if the claimed invention is “anticipated” by the prior art, in other words, if the invention is not “new” or novel as defined in one of the seven subsections of § 102. Novelty-defeating references include:

Patents and printed publications from anywhere in the world describing the claimed invention either before the applicant’s date of invention or more than one year before the U.S. patent application filing date;<sup>42</sup>

Evidence that the invention was known or used by others in the U.S. before the applicant’s date of invention, or that the invention was in public use or on sale in the U.S. more than one year before the U.S. patent application filing date;<sup>43</sup>

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40. Interestingly, the written description requirement of 35 U.S.C. § 112 may prove to be an avenue for attacking claims of this sort. *Id.* at 24 n.87 (positing that the recent “reinvigoration” of the written description requirement in Federal Circuit jurisprudence may mean the invalidation of most software patents for failure to adequately describe the invention).

41. *See State Street Bank & Trust Co. v. Signature Fin. Group Inc.*, 927 F. Supp. 502, 516 (D. Mass. 1996), where the district court noted:

If Signature’s invention were patentable, any financial institution desirous of implementing a multi-tiered funding complex modeled on a Hub and Spoke configuration would be required to seek Signature’s permission before embarking on such a project. This is so because the ‘056 Patent is claimed sufficiently broadly to foreclose virtually any computer-implemented accounting method necessary to manage this type of financial structure . . . . In effect, the ‘056 Patent grants Signature a monopoly on its *idea* of a multi-tiered partnership portfolio investment structure; patenting an accounting system necessary to carry on a certain type of business is tantamount to a patent on the business itself.

(Emphasis added). The Federal Circuit clearly did not share the district court’s view. (The Federal Circuit reversed at 149 F.3d 1368 (1998), *cert. denied* at 525 US 1093 (1999)).

42. 35 U.S.C. §§ 102(a), (b), (d) (1999).

43. 35 U.S.C. §§ 102(a), (b) (1999).

Evidence that the applicant's invention was made by someone else or derived from someone else before the applicant's date of invention, or abandoned by the inventor;<sup>44</sup> and

Under certain circumstances, patent applications describing the applicant's invention filed before the applicant's date of invention.<sup>45</sup>

Section 102's novelty, or anticipation, requirement is met only if each and every element of the claimed invention is disclosed in a single prior art reference.<sup>46</sup> Additionally, "the reference must be enabling and describe the applicant's claimed invention sufficiently to have placed it in possession of a person of ordinary skill in the field of the invention."<sup>47</sup> Considering the relative youth of the field of electronic commerce ("e-commerce"), finding an anticipating reference, wherein the claimed Internet business model invention is identically disclosed, may prove difficult in many cases.<sup>48</sup>

An invention that clears the § 101 subject matter and § 102 anticipation hurdles may still be tripped up under the non-obviousness requirement of § 103. As discussed in the next part, a key to properly defining the scope of Internet business model patents lies in the non-obviousness requirement of § 103.

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44. 35 U.S.C. §§ 102(c), (f), (g) (1999).

45. 35 U.S.C. § 102(e) (1999).

46. See *In re Paulsen*, 30 F.3d 1475, 1478–79 (Fed. Cir. 1994).

47. *Id.* at 1479. An "enabling" reference is one that would enable a person of ordinary skill in the relevant art to practice the claimed invention. See *Titanium Metals Corp. of Am. v. Banner*, 778 F.2d 775 (Fed. Cir. 1985). Because there is currently no requirement that an inventor disclose the specific code used to implement the claimed method, lack of enablement should not pose an additional problem for Internet business model patents.

48. Claims of anticipating prior art have, however, already surfaced for some Internet business model patents. See, e.g., Mel Duvall, *Patents Hook Start-Ups*, available at <http://205.181.112.101/intweek/stories/news.html> (1999) (discussing challenges to priceline.com patent). Bountyquest.com is a relatively new company that pays cash rewards for prior art that may anticipate or otherwise impact the validity of a posted patent. Bountyquest.com, available at <http://www.bountyquest.com> (last visited Mar. 20, 2001). The company has awarded bounties for three business model patents, although for the Amazon.com 1-click patent bounty no single piece of prior art was found that included all of the claim elements mainly because the 1-Click patent was considered to be specific to the Web. Bountyquest.com, available at <http://www.bountyquest.com/infocenter/1click.htm> (last visited Mar. 20, 2001). The fact that aspects of the '411 patent claims may be specific to the web are relevant for purposes of anticipation, but not for obviousness, if the web-related and non-web-related aspects were all in the prior art and a motivation or suggestion from the prior art exists to combine the varied references. See also *My Conversation with Jeff Bezos—Your Responses . . .*, *supra* note 6 (commenting on prior art allegedly anticipating the Amazon.com "1-Click" patent).

## II. OBVIOUS BY ANALOGY

The § 103 non-obviousness inquiry is “the edge on which the majority of decisions of *ex parte* patentability and *inter partes* validity are decided” and as such is quite significant.<sup>49</sup> Section 103 denies patentability to an invention where “the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art.”<sup>50</sup>

In *Graham v. John Deere Co.*,<sup>51</sup> the Supreme Court identified several determinations to be made by the trier of fact in deciding the § 103 question. These determinations include: (1) the scope and content of the prior art, (2) differences between the prior art and the claims at issue, and (3) the level of ordinary skill in the art.<sup>52</sup> Under § 103, prior art references that qualify as prior art under § 102, but that do not by themselves anticipate the claimed invention, can be combined to show that all of the claimed elements are present in the prior art. Such combinations are allowed as long as a suggestion or motivation, express or implied, to combine the multiple references also comes from the prior art.<sup>53</sup> The test is “what the combined teachings of the references would have suggested to those of ordinary skill in the art.”<sup>54</sup>

Determining the “scope” of the prior art involves identifying what prior art is to be compared with the invention at issue. Once that is determined, the “content” of the prior art, what the prior art discloses, can be ascertained.<sup>55</sup> While all of the factors investigated in the non-obviousness inquiry are important, properly defining the scope and content of the prior art is especially critical because whether an invention is deemed obvious often turns solely on how broadly or narrowly “prior art” is defined. As discussed in the next section, before one can determine the scope and content of the prior art, one must define what *is* prior art.

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49. Kenneth R. Adamo, *The Power of Suggestion (Teaching, Reason or Motivation) and Combined-Reference Obviousness*, 76 J. PAT. & TRADEMARK OFF. SOC'Y 177, 178 (1994).

50. 35 U.S.C. § 103(a) (1999).

51. 383 U.S. 1 (1966).

52. *Id.* at 17. The court also noted that “secondary considerations” or objective indicia of non-obviousness such as “commercial success, long felt but unsolved needs, failure of others, etc.,” might be relevant and could be utilized in the analysis. *Id.* According to the Federal Circuit, such secondary considerations must always be considered in a non-obviousness analysis. *See Stratoflex, Inc. v. Aeroquip Corp.*, 713 F.2d 1530, 1538 (Fed. Cir. 1983).

53. *In re GPAC Inc.*, 57 F.3d 1573, 1581 (Fed. Cir. 1995).

54. *See id.*

55. *See DONALD S. CHISUM ET AL., CASES AND MATERIALS: PRINCIPLES OF PATENT LAW* 569 (1998).

The determination of what is prior art “is frequently couched in terms of whether the art is analogous, i.e., whether the art is ‘too remote to be treated as prior art.’”<sup>56</sup> Although technically all public knowledge is available to an inventor, in determining the scope and content of the prior art, a trier of fact may only charge an inventor with “full knowledge . . . of the prior art in the field of his endeavor . . . and knowledge from those arts reasonably pertinent to his particular problem.”<sup>57</sup> This doctrinal limitation on the scope of the prior art available for combination in a § 103 obviousness determination ostensibly recognizes that an inventor cannot be aware of every teaching in every art. Consequently a court or a USPTO examiner should “attempt to more closely approximate the reality of the circumstances surrounding the making of an invention by only presuming knowledge by the inventor of prior art in the field of his endeavor and in analogous arts.”<sup>58</sup> While this premise may be unobjectionable, it may be time to revisit the doctrine in practice, particularly in the area of Internet business model patents.

#### *A. Development of the Doctrine of Analogous Art*

The doctrine of analogous art dates back to the 1895 decision of *C&A Potts & Co. v. Creager*.<sup>59</sup> In *Potts*, the Supreme Court discussed the necessity of identifying the relative proximity of the inventor’s field of endeavor to the field of the cited reference.<sup>60</sup> The Court noted that where an invention’s novelty was derived from transferring a device from one branch of industry to another, a court is bound to investigate the remoteness of the relationship between the two industries, the alterations necessary to adapt it to its new use, and the value of the adaptation to the new industry.<sup>61</sup>

In 1966, the Supreme Court added a further gloss to the analogous art inquiry in *Calmar Inc. v. Cook Chemical Company*.<sup>62</sup> The invention at issue in *Calmar* was a pump sprayer used with insecticide containers. When the patent holder, Cook Chemical, sued Calmar for infringement, Calmar asserted the defense of patent invalidity for obviousness, citing various references that had not been before the examiner during prosecution of the patent application.<sup>63</sup> Cook Chemical argued that one of

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56. *In re Clay*, 966 F.2d 656, 658 (Fed. Cir. 1992) (citation omitted).

57. *Id.* at 658–59 (citation omitted).

58. *Application of Wood*, 599 F.2d 1032, 1036 (C.C.P.A. 1979).

59. 155 U.S. 597 (1895).

60. *See id.* at 606.

61. *See id.*

62. 383 U.S. 1 (1966) (companion case to *Graham v. John Deere Co.*, 383 U.S. 1 (1966)).

63. *Id.* at 31.

these references, Livingstone, was not in the pertinent prior art because it related to liquid containers with pouring spouts, not pump sprayers.<sup>64</sup> The Court gave short shrift to Cook Chemical's argument:

Apart from the fact that respondent made no such objection to similar references cited by the Examiner, so restricted a view of the applicable prior art is not justified. The problems confronting [the patentee] and the insecticide industry were not insecticide problems; they were mechanical closure problems. Closure devices in such a closely related art as pouring spouts for liquid containers are at the very least pertinent references.<sup>65</sup>

This decision thus expanded the analogous art inquiry by focusing not only on the field of the inventor's endeavor but also on the nature of the problem the inventor was attempting to solve.

In a 1979 decision, *Application of Wood*,<sup>66</sup> the Court of Custom and Patent Appeals, one of the predecessor courts to the Court of Appeals for the Federal Circuit, combined these strands into a two-part analogous art inquiry. As explicated in *Wood*, one must first determine whether the cited prior art reference is from the same field of endeavor as that of the inventor, regardless of the problem addressed.<sup>67</sup> Second, if the reference is not within the field of the inventor's endeavor, one must determine whether the reference still is reasonably pertinent to the particular problem that the inventor is attempting to solve.<sup>68</sup>

From *Potts* through *Calmar*, *Wood*, and beyond, courts generally took a broad view of analogous art, so much so that it was widely perceived that arguments by a patentee that art cited against a patent was not analogous, held little chance of success.<sup>69</sup> According to one

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64. *Id.* at 35.

65. *Id.* (citation omitted).

66. 599 F.2d 1032 (C.C.P.A. 1979).

67. *Id.* at 1036.

68. *Id.*

69. Hilary K. Dobies, Note, *New Viability in the Doctrine of Analogous Art*, 34 IDEA 227, 231 (1994) (citing 2 KAYTON, PATENT PRACTICE 5–33 (1989); 2 CHISUM ON PATENTS § 5.03 (2000)); see also *Twin Disc, Inc. v. United States*, 10 Cl. Ct. 713, 733, (Cl. Ct. 1986) ("Clearly, the trend is to widen the scope of the prior art which can be considered pertinent"). In *Weather Engineering Corp. of America v. United States* the Court of Claims held that patents relating to airborne delivery and fusing systems were analogous art to an invention in cloud seeding:

[T]he days when inventions relating to locks are only made by locksmiths are past us. In today's world, technological breakthroughs which result from the cross-fertilization of minds trained in different disciplines is common. Thus, it is unrealistic to assume or demand that the cloud seeder confine his reading to *The Journal of Weather Modification*. . . . Human knowledge cannot be compartmentalized or pigeonholed, and the courts have recognized this in

commentator, virtually every utility patent claim examined by the CCPA and the Federal Circuit between 1979 and 1982 was held analogous to the relevant art under the *Wood* test.<sup>70</sup> However, in the early 1990's, a perceptible narrowing of the doctrine occurred that has endured to the present time, giving renewed vitality to the doctrine of analogous art as a tool in overcoming a finding of obviousness.<sup>71</sup>

*In re Clay*, a 1992 decision, marked a change in Federal Circuit jurisprudence toward a narrower definition of analogous art, and is probably still the best statement of the present law in this area.<sup>72</sup> The invention in *Clay* comprised a process for storing a liquid hydrocarbon product in a tank with a dead volume between the bottom of the tank and its outlet port.<sup>73</sup> The process involved filling the dead space between the bottom of the tank and the outlet port with a rigid gel and then storing the hydrocarbon product in the tank in contact with the gel.<sup>74</sup> The presence of the gel in the former dead volume of the tank allowed for easy removal of the entire stored hydrocarbon product from the tank. Two prior art patents were cited as references against the claimed invention: Hetherington and Sydansk. Hetherington disclosed an apparatus for displacing dead space liquid using inflatable bladders or bags.<sup>75</sup> Sydansk disclosed a process for improving oil production by filling cavities in underground rock formations with a gel so that liquid hydrocarbon (oil) would be diverted by the gel toward a production well.<sup>76</sup>

The examiner and, on appeal, the Board of Patent Appeals and Interferences ("The Board"), concluded that although neither reference alone anticipated Clay's invention, the invention was obvious in view of the two references combined.<sup>77</sup> The Board held that Hetherington would teach one skilled in the art that Clay's invention "was appreciated in the prior art and solutions to that problem generally involved filling the

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evaluating the relevancy of art that comes before them in a 35 U.S.C. § 103 context.

614 F.2d 281 (Ct. Cl. 1980).

70. See Dobies, *supra* note 69, at 231.

71. *Id.* at 243 ("In the past it may have been questioned whether non-analogous art was indeed a viable doctrine. The 1992 decisions finally answer that question in the affirmative."); see also 2 IRVING L. KAYTON, PATENT PRACTICE 5-33 (1989) ("[M]odern Federal Circuit cases [Clay, Oetiker, and Wang] suggest that 'non-analogous art' as a means for defeating an erroneous USPTO rejection of prima facie obviousness may be in resurgence.").

72. *In re Clay*, 966 F.2d 656 (Fed. Cir. 1992).

73. *Id.* at 657.

74. *Id.* at 658.

75. *Id.*

76. *Id.* at 659.

77. *Id.* at 658.



dead space with something.”<sup>78</sup> The Board also held that the cavities filled by Sydansk “were sufficiently similar to the . . . void space being filled by Hetherington for one of ordinary skill to have recognized the applicability of the gel to Hetherington.”<sup>79</sup>

The Federal Circuit reversed on appeal, rejecting the USPTO’s argument that Sydansk and Clay’s inventions were part of a “common endeavor—maximizing withdrawal of petroleum stored in petroleum reservoirs.”<sup>80</sup> In applying the first part of the *Wood* test, the court held that Clay and Sydansk were not in the same field of endeavor, that Clay’s field was the storage of refined liquid hydrocarbons and Sydansk’s field was the extraction of crude petroleum.<sup>81</sup> In applying the second part of the test, the court chose to define the problem facing the inventor Clay narrowly as preventing the loss of stored product to tank dead volume and defined the problem facing Sydansk as that of recovering oil from rock.<sup>82</sup> On this basis, the court concluded that Sydansk was not analogous art that could be used to establish obviousness in combination with Hetherington, thus paving the way for a patent to issue to Clay.<sup>83</sup>

Of course, the court could have chosen to characterize either part of the analogous art test more broadly, creating a different result—especially considering the fact that both the Sydansk patent and Clay’s application were assigned to the same company, Marathon Oil. The court could have upheld the Board’s finding that Sydansk was within Clay’s field of endeavor, viewed broadly as maximizing withdrawal of stored petroleum. Alternatively, a broad construction of the problem facing the inventor as filling dead volumes to maximize hydrocarbon recovery could have encompassed Sydansk as well. The court chose instead to tailor the relevant inquiries narrowly, introducing a significant degree of subjective flexibility in the analogous art determination.

The Federal Circuit confirmed its willingness to employ a narrow view of analogous art later that year in *In re Oetiker*.<sup>84</sup> Oetiker’s invention consisted of an improved metal hose clamp with a pre-assembly hook that disengaged automatically when the clamp was tightened.<sup>85</sup> The examiner rejected the invention as obvious in view of an earlier Oetiker clamp patent combined with a Lauro patent describing a plastic

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78. *In re Clay*, 966 F.2d 656, 658 (Fed. Cir. 1992).

79. *Id.*

80. *Id.* at 659.

81. *Id.*

82. *Id.* at 659–60.

83. *Id.* at 660.

84. *In re Oetiker*, 977 F.2d 1443 (Fed. Cir. 1992).

85. *Id.* at 1446.

hook and eye fastener for use in garments. The examiner reasoned that since hooks are commonly used to secure garments, “a person faced with the problem of unreliable maintenance of the pre-assembly configuration of an assembly line metal hose clamp would look to the garment industry art.”<sup>86</sup> The Board affirmed, noting that while the Lauro reference was not in the same field of endeavor as Oetiker, it was nonetheless “analogous art because it relates to a hooking problem, as does Oetiker’s invention.”<sup>87</sup>

On appeal, the Federal Circuit reversed, disagreeing with the Board’s apparent reasoning that all hooking problems are analogous. The court held that there had been no showing that a person of ordinary skill, seeking to solve a problem of fastening a hose clamp, would reasonably be expected or motivated to look to fasteners for garments.<sup>88</sup> This result is particularly interesting when contrasted with the Supreme Court’s *Calmar* decision. In *Calmar*, the Court chastised the examiner’s “restricted view” of the applicable prior art and broadly classified the inventor’s problem as a “mechanical closure” problem, somewhat similar to the “hooking” problem classification denounced in *Oetiker*.

The Federal Circuit’s posture in *Clay*, *Oetiker*, and a handful of other decisions since 1992, gives great latitude in manipulating the § 103 determination of obviousness.<sup>89</sup> How broadly or narrowly the field of the inventor’s endeavor or the problem facing the inventor is defined largely determines what art is analogous, which in turn plays a significant role in the determination of whether an invention will be deemed obvious. Because the Federal Circuit has also decided several cases during this time period in which a finding of analogous art was upheld, it is impossible to predict how narrowly or broadly a court will define the relevant field of the inventor’s endeavor or the problem to be solved.<sup>90</sup>

This uncertainty regarding application of the doctrine of analogous art may be fortuitous in the context of Internet business model patents because it demonstrates the elasticity of the doctrine. This elasticity will allow courts to define analogous art broadly where necessary to prop-

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86. *Id.*

87. *Id.*

88. *Id.*

89. *See, e.g.*, *Litton Sys., Inc. v. Honeywell Inc.*, 87 F.3d 1559 (Fed. Cir. 1996), *vacated on other grounds*, 520 U.S. 1111 (1997); *Heidelberger Druckmaschinen AG v. Hantscho Commercial Products, Inc.*, 21 F.3d 1068 (Fed. Cir. 1994); *Wang Laboratories v. Toshiba Corp.*, 993 F.2d 858 (Fed. Cir. 1993).

90. *See, e.g.*, *In re GPAC Inc.*, 57 F.3d 1573, 1581 (Fed. Cir. 1995); *In re Paulsen*, 30 F.3d 1475, 1478 (Fed. Cir. 1994).

erly cabin the scope of Internet business model patent claims without the need for legislation or other drastic measures.

Advances over the past 30 years in technology, and in ease of information acquisition and transmission, mandate now more than ever before a broadened view of analogous art in the obviousness inquiry for all inventions, and certainly for Internet business models. Over 30 years ago the United States Supreme Court made the following observation:

Technology . . . has advanced—and with remarkable rapidity in the last 50 years. Moreover, the ambit of applicable art in given fields of science has widened by disciplines unheard of a half century ago. . . . [T]hose persons granted the benefit of a patent monopoly [must] be charged with an awareness of these changed conditions. The same is true of the less technical, but still useful arts. He who seeks to build a better mousetrap today has a long path to tread before reaching the Patent Office.<sup>91</sup>

While inventors are not required to perform a prior art search before filing a patent application, many do searches during the inventive process. The ability to search a variety of arts with speed and ease via the Internet is a tremendous boon to research efforts. However, as discussed below, if the *Amazon.com*<sup>92</sup> district court decision is any indication, courts and the USPTO may be narrowly defining analogous art in the area of Internet business models, a trend that must be reversed for the claims of such patents to have the appropriate scope.<sup>93</sup>

#### B. *The Analogous Art Inquiry for Internet Business Models*

In granting the injunction against Barnesandnoble.com, the district court in the *Amazon.com* case never explicitly mentioned the doctrine of analogous art; however, the court did define both the field of the inventors' endeavor and the problem the inventors were trying to solve.<sup>94</sup> The court defined the field of endeavor as e-commerce<sup>95</sup> and defined the problem the inventors were trying to solve as that of "streamlining the

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91. *Graham v. John Deere Co.*, 383 U.S. 1, 19 (1966).

92. 73 F. Supp. 2d at 1228.

93. While the Federal Circuit's decision vacating the preliminary injunction in *Amazon.com* is encouraging, the issue of analogous art in the obviousness determination was not before the court. Consequently, it remains to be seen whether the court will take a broad or narrow approach to analogous art in the area of business model patents. See *Amazon.com v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1366 (Fed. Cir. 2001).

94. *Amazon.com, Inc. v. Barnesandnoble.com, Inc.*, 73 F. Supp. 2d 1228 (W.D. Wash. 1999), vacated by 239 F.3d 1343 (Fed. Cir. 2001).

95. *Id.* at 1236.

on-line ordering process to reduce the high percentage of orders that are begun but never completed, i.e., abandoned shopping carts.”<sup>96</sup>

The only references mentioned by the district court were Internet and e-commerce related references.<sup>97</sup> Also, on the face of the Amazon “1-click” patent itself, where relevant prior art citations are listed, none of the cited references are from the “bricks and mortar” world; all are related to the Internet or e-commerce.<sup>98</sup> Thus, in both of these forums where obviousness is determined, initial examination in the USPTO and district court patent infringement litigation, there is a glaring omission: no citation of “bricks and mortar,” real-world business model prior art in relation to the ‘411 patent.<sup>99</sup>

The omission of real world prior art from the “1-click” patent and the court’s discussion in *Amazon.com* is troubling because the problem facing the Amazon.com inventors was not a problem peculiar to the Internet. To frame the issue more broadly, Amazon.com’s problem was finding a way to increase purchases, a classic business problem for which increasing ease of purchasing and convenience is a classic business solution. Moreover, when viewed broadly, many people in the real world have experience with, or at least are aware of, the solution of “single action ordering” as a business model, where no shopping cart is required.<sup>100</sup> Take for example the experience of a frequent visitor to a

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96. *Id.* at 1237.

97. *Id.*

98. See U.S. Patent No. 5,960,411 (issued Sept. 28, 1999).

99. Interestingly, during oral arguments in *Barnesandnoble.com*’s appeal of the district court injunction, Judge Clevenger of the Court of Appeals for the Federal Circuit asked counsel for Amazon.com why the claimed invention was not like charge accounts that people had, in past times, with pharmacies, for example, who had all of their account and shipping information on record. The judge gave the following example, “you would call and say you wanted to reorder a prescription or something . . . and the single action would be the words ‘charge it’ and it would be done. So the notion of short-circuiting . . . of cutting out steps, doesn’t seem to me to be very new.” Audio tape: Federal Circuit Appellate Arguments in the Case *Amazon.com v. Barnesandnoble.com, Inc.*, No. 00-1109 (Washington, D.C., Oct. 2, 2000) (on file with author). The judge noted, however, that charge accounts might not be within the ambit of one of ordinary skill in the art of this field because it is too simple-minded a concept. Counsel for Amazon.com responded that single action ordering was contrary to the conventional wisdom in the web as shown by widespread copying of the feature after Amazon.com introduced it. *But see Amazon.com v. Barnesandnoble.com, Inc.*, 239 F.3d 1343, 1366 (Fed. Cir. 2001) (noting that evidence of copying by Barnesandnoble.com and others “is not sufficient to demonstrate nonobviousness . . . in view of the substantial question of validity raised by the prior art references.”). Amazon.com’s attempt to limit relevant prior art to web-related references is unjustified and problematic, and charge accounts of the type described by Judge Clevenger should clearly be within the ambit of persons of ordinary skill in the art for reasons discussed *infra* Part II.B.

100. See, e.g., Dreyfuss, *supra* note 8, at 263, 279 n.55 (2000) (“the patent on one-click basically covers the concept (particularly well known in bars) of asking the seller to put a particular purchase ‘on my tab’”); *My Conversation with Jeff Bezos—Your Responses . . .*,

high-end hotel. Such guests, known by sight to the concierge, whose address and credit card information is on file and available to the hotel, are able to implement single-action ordering of goods and services throughout the hotel. The '411 patent notes, in fact, that the single action can be a voice command spoken by the purchaser.<sup>101</sup>

According to Amazon.com's own expert witness, everything in the independent claims of the '411 patent was in the prior art except for single action ordering implemented without a shopping cart model.<sup>102</sup> Arguably, single action ordering and its implementation without a shopping cart model was also in the prior art—the “real world” prior art. Consequently, it seems eminently reasonable that an appropriately crafted definition of analogous art for the '411 patent would mandate the consideration of, among other things, any corroboratable affidavits that could be obtained from hoteliers, bartenders, etc., who, at any time prior to September 12, 1996,<sup>103</sup> provided a “single-action ordering” feature<sup>104</sup> to their customers.<sup>105</sup> Combining any such evidence with known software and Internet prior art, such as the use of “cookies” in information storage and retrieval, as a person of ordinary skill in the art would be motivated to do, should result in a conclusion of obviousness under § 103 for some, if not all, of the claims of the '411 patent.

For business model patents—Internet based or not—a narrow application of the doctrine of analogous art is especially troubling because of the increased potential for the improper expansion of patent claims. If one approaches the issue broadly, it should be difficult to identify an art in the “bricks and mortar” real world in which business methods are not used, or in which solutions to business problems are not generated.<sup>106</sup>

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*supra* note 6 (“I’m reminded of going to the feed store as a boy with my grandfather and watching him heave a large sack of whatever over his shoulder, tell the clerk what he was taking, and leave. . . . [T]his seems an awful lot like 1-Click.”). Prior art submitted to Bountyquest.com to invalidate the '411 patent included an “astonishingly relevant” Doonesbury cartoon entitled “Boopsie’s Virtual Shopping Spree,” dated May 3–8, 1993 depicting single click purchases; Norm on the “Cheers” television show using single action ordering to purchase a beer in 1982; and “Star Trek” the television series, 1987–1997 in which the crew of the Enterprise “routinely placed single-click orders via replicators.” Bountyquest.com, available at <http://www.bountyquest.com/infocenter/1click.htm> (last visited Mar. 20, 2001).

101. See Claim 4, U.S. Patent No. 5,960,411 (issued Sept. 28, 1999).

102. Amazon.com, Inc. v. Barnesandnoble.com, Inc., 73 F. Supp. 2d 1228, 1233 (W.D. Wash. 1999), vacated by 239 F.3d 1343 (Fed. Cir. 2001).

103. One year before the U.S. filing date of the application from which the '411 patent issued, a date relevant to the validity of the patent under 35 U.S.C. §§ 102(b) and 103.

104. No shopping cart model required.

105. Apparently, no “real world” evidence of this sort was submitted to the district court.

106. Webster’s Dictionary provides numerous definitions and synonyms for “business” including: commerce, trade, a commercial or industrial establishment, exchange barter, buying and selling, negotiation, production and distribution, sales, transaction, bargaining

The question of the obviousness of Internet business model patents is a thorny one. E-commerce combines at least two fields: computer software development and business development. For Internet business model patents, the focus of the claims tends to be primarily on a method of doing business; the business is just being conducted in the environment of the Internet. The relevance of the Internet environment is simply that software (e.g. computer code) is instrumental in performing the method as opposed to “hardware” (e.g. manual action). Looked at this way, the scope of the prior art is large indeed, due to the ubiquitous nature of business models.

In business, as much as anywhere else, solving problems in one area by application of business principles or models from another area is clearly the norm. Case studies of diverse companies and industries are required components of undergraduate and graduate business programs. Methods used in providing goods in one industry are adapted to maximize profits in a totally unrelated industry. Yet, in the Internet business model arena, a strange disconnect, evidenced in the *Amazon.com* case, is apparent between the real world and the electronic world.

As noted earlier, in a § 103 obviousness inquiry no single reference is required to embody the invention; references can be combined to show that each and every element of the claimed invention is present in the prior art. Thus, for the “1-Click” patent with an appropriate analogous art definition, real world evidence of single-action ordering could logically be combined with e-commerce and software references to show that every element claimed in the ‘411 patent is in the prior art and that a person of ordinary skill in the art would have been motivated to combine the references.

This, of course, raises questions as to the qualifications, skill level, and expertise of this hypothetical person of ordinary skill in the art. According to the Federal Circuit:

[f]actors that may be considered in determining level of ordinary skill in the art include: (1) the educational level of the inventor; (2) type of problems encountered in the art; (3) prior art solutions to those problems; (4) rapidity with which innovations are made; (5) sophistication of the technology; and (6) educational level of active workers in the field.<sup>107</sup>

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and marketing. WEBSTER’S NEW WORLD DICTIONARY & THESAURUS (Michael Agnes ed., 1996).

107. *Environmental Designs, Ltd. v. Union Oil Co. of Calif.*, 713 F.2d 693, 697 (Fed. Cir. 1983), *cert. denied*, 464 U.S. 1043 (1984).

A quick look at the backgrounds of some already prolific “real” Internet business model patent inventors, while not conclusive, may be instructive. Jay Walker, the founder and chairman of Walker Digital, has created a business method patent-generating machine that holds 50 such patents with another 300-plus pending.<sup>108</sup> Mr. Walker, of Priceline.com fame, is a named inventor on a variety of the company’s Internet business method patents.<sup>109</sup> A “recognized entrepreneur and marketer,” with a B.S. in Industrial Relations from Cornell University, Mr. Walker has “business leadership experience in several industries includ[ing] telecommunications, credit cards, air freight, automotive, retailing, consumer and business to business marketing.”<sup>110</sup>

Similarly, James Jorasch, Walker Digital’s Vice President, Research and Development, is a named inventor “on more than 70 issued patents and more than 400 pending patents.”<sup>111</sup> Mr. Jorasch holds MBA and Bachelor of Science in Applied Economics degrees from Cornell University and has been a management consultant with Deloitte & Touche Consulting and a Financial Analyst with the Tropicana Resort and Casino.

Last, but definitely not least, Jeffrey Bezos, Time Magazine’s Person of the Year for 1999, is the founder of Amazon.com and a named inventor on at least four Internet business model patents, including the “1-Click patent.”<sup>112</sup> Mr. Bezos, a graduate of Princeton University, majored in electrical engineering and computer science in college, but has a wealth of business experience after working at a high tech start-up, becoming Banker’s Trust Company’s youngest vice president, and D.E. Shaw’s youngest senior vice president.<sup>113</sup> In fact, at D.E. Shaw, Mr. Bezos’ job was to think up business possibilities.<sup>114</sup> At PCForum97, in March of 1997,<sup>115</sup> Mr. Bezos sounded very much like a person familiar with traditional “real world” business concepts:

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108. *Walker Digital Home Page—Intellectual Properties*, available at <http://www.walkerdigital.com> (last visited Feb. 19, 2001) (on file with MTTLR).

109. *See, e.g.*, U.S. Patent Nos. 5,897,620 (issued Apr. 27, 1999); 5,794,207 (issued Aug. 11, 1998); 5,999,596 (issued Dec. 7, 1999); 6,049,778 (issued Apr. 11, 2000).

110. *See Walker Digital Home Page, supra* note 108.

111. *See id.*

112. U.S. Patent Nos. 6,029,141 (Feb. 22, 2000); 5,960,411 (issued Sept. 28, 1999); 5,727,163 (issued Mar. 10, 1998); 5,715,399 (issued Feb. 3, 1998); and an unknown number of pending patents.

113. *See An On-line Biography: Jeff Bezos*, available at <http://www.annonline.com/interviews/970106/biography.html> (2000).

114. *See* Joshua Quittner, *Time 1999 Person of the Year—Biography*, available at <http://www.time.com/time/poy/bezos5.html> (1999).

115. Amazon.com’s “1-click” patent application was filed in September of 1997. Mr. Bezos is a named inventor on the patent that issued from that application. *See* U.S. Patent No. 5,960,411 (issued Sept. 28, 1999).

Business model has a traditional meaning and a new Internet meaning . . . . The traditional one is what are your gross margins on revenues? What are your net margins? But the Internet is more ‘meta’: where do your revenues come from in the first place? Transactions? Subscriptions? Advertising? . . . Our business model is transactions.<sup>116</sup>

The commentator noted that Amazon’s business model is actually that of a traditional retailer, and posits that most money made on the Internet will not come from incremental content revenues, but from delivering traditional services more efficiently and from better customer service.<sup>117</sup> Consequently, considering the backgrounds of some “real” inventors in the e-commerce art, expecting the transfer of “bricks and mortar” business models to the electronic world does not seem far-fetched at all.<sup>118</sup>

That e-commerce entrepreneurs would study extant real-world business models for application in the new Internet environment—where, incidentally, e-commerce retailers are still competing with “bricks and mortar” businesses—only makes sense. Consequently, broadly defining the problems facing Internet business model inventors, and the fields in which they operate, under the rubric of the doctrine of analogous art, is necessary to ensure that the substantial rewards of the patent grant are only given in exchange for truly non-obvious inventions.<sup>119</sup>

A recognition is needed that the Internet is just another “place,” another location in which to shop, listen to music, check bank accounts, to do many of the things that are also done in more concrete locations, and that analogies to the “bricks and mortar” world are not only appropriate, but critical to the continued credibility and viability of the U.S. patent system. An example of this understanding can be found in Judge Rader’s opinion in *Overhead Door Corp. v. Chamberlain Group, Inc.* which quotes with approval a “well understood tenet of the computing art [that] . . . ‘any software process can be transformed into an equivalent hardware process, and any hardware process can be transformed into an equivalent software process.’”<sup>120</sup> In many cases, the innovation

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116. *Agenda: What would Darwin, Rousseau, Hobbes and Smith have said?*, available at <http://www.edventure.com/> (2000). Author not identified.

117. *Id.*

118. *See, e.g., In re Van Wanderham*, 378 F.2d 981 (C.C.P.A. 1967).

119. *See, e.g., Amazon.com. v. Barnesandnoble.com, Inc.*, 73 F. Supp. 2d 1228 (W.D. Wash. 1999), *vacated by* 239 F.3d 1343 (Fed. Cir. 2001).

120. 194 F.3d 1261, 1269 (Fed. Cir. 1999); *see also* Pamela Samuelson et al., *A Manifesto Concerning the Legal Protection of Computer Programs*, 94 COLUM. L. REV. 2308, 2319 (1994) (“Computer science has long observed that software and hardware are interchangeable.”).



in an Internet business model patent lies not in the computer programming<sup>121</sup> associated with implementing the model, but instead in the “idea” of, for example, allowing a customer to order an item by a single action,<sup>122</sup> or “haggling” over the price of an item.<sup>123</sup> Thus, broadening the definition of analogous art firmly to include “bricks and mortar,” real-world references in obviousness inquiries, should rein in both the issuance of Internet business model patents and associated litigation.

There is ample elasticity in the doctrine of analogous art to accommodate and cabin Internet business model patents effectively. A narrow concept of analogous art should have no place in an obviousness analysis of an Internet business model patent: every art in which business models are used is potentially an analogous art. Legislation<sup>124</sup> or new rules<sup>125</sup> to accomplish the same result would be redundant and unjustifiably discriminate between types of patentable subject matter.<sup>126</sup>

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121. The judge in *Amazon.com* apparently did not have to examine the underlying computer code used by Barnes and Noble to implement their one-step ordering system in order to enter a preliminary injunction, finding that *any* single-action ordering system would violate Amazon’s patent rights. See James Gleick, *supra* note 8.

122. See U.S. Patent No. 5,960,411 (issued Sept. 28, 1999) (“Method and system for placing a purchase order via a communications network”). Single action ordering as a business method is arguably quite old. One can find in American culture, including cinema, television and print sources depictions of customers having accounts with vendors (“put it on my tab”), as well as high-end hotels with regular guests, recognizable by hotel personnel on sight and able to simply speak (single action) to make a purchase. See *supra* note 100.

123. See U.S. Patent No. 6,035,288 (issued Mar. 7, 2000) (“Interactive computer-implemented system and method for negotiating sale of goods and/or services”). Programming to allow for such haggling in computer fantasy games has been around, allegedly, since at least the mid 1980s. The practice of haggling spans millennia; the only thing new is its location, namely the Internet.

124. For example, the Business Method Patent Improvement Act of 2000 would amend 35 U.S.C. § 103 to create a presumption of obviousness for any business method invention that differs from the prior art only in the sense that it is implemented by a “computer technology.” H.R. 5364, 106th Cong. § 4 (2000).

125. See Steven I. Wallach, *How Could They Patent That?*, Corporate Intelligence (July 28, 2000), available at <http://www.corporateintelligence.com/issues.cfm?Story=28&Author=Wallach> (expressing the desire for the USPTO or the courts to announce a new rule addressing “whether well-known bricks-and-mortar business methods that are adapted to the Internet are obvious or not”).

126. Creating special legislation for one category of patents would begin a descent down a very slippery slope. As one commentator notes:

[T]he [BMPIA] bill would create two distinct classes of patents: (1) business methods and (2) everything else. When the next “new” technology emerges, the lack of adequate prior art resources at that time may dictate creation of a third patent class, and then a fourth, and so on. And when a technology matures, bringing with that maturity the more complete prior art collection that was previously lacking, . . . when would that special treatment no longer be warranted?

Steven J. Shumaker, *Business Method Patent Improvement Act: Creating a Different Class of Patent?* Corporate Intelligence (Nov. 22, 2000), available at <http://www.corporateintelligence.com/issues.cfm?Story=65&Author=Shumaker>.

### III. THE DOCTRINE OF EQUIVALENTS

#### *A. Prosecution Defects and the Scope of the Doctrine of Equivalents*

Ideally, the determination of obviousness would be correctly determined *before* a patent issues, during initial examination in the USPTO. Justice Clark articulated it well in *Graham*: “the primary responsibility for sifting out unpatentable material lies in the Patent Office. To await litigation is—for all practical purposes—to debilitate the patent system.”<sup>127</sup>

However, the obviousness of already-issued Internet business model patents will largely have to be determined during civil litigation because the USPTO’s efforts to get a handle on the problem are, if not too little, definitely too late for hundreds of Internet business model patents that have issued over the past several years.<sup>128</sup> The “1-Click” patent is not an anomaly. Numerous other Internet business model patents have issued, citing only e-commerce or software related prior art.<sup>129</sup> Also, for many such patents, very little, if any, prior art before 1980—or even 1990—is cited, as if people only began implementing business ideas within the past 20 years.<sup>130</sup> To the extent examiners have not directed their search efforts toward real-world, “bricks and mortar” business method prior art, already-issued Internet business model patents have had a woefully deficient non-obviousness examination. Accordingly, they must be considered unworthy of the presumption of validity which enshrouds them.

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127. *Graham v. John Deere Co.*, 383 U.S. 1, 18 (1966).

128. Of course, obviousness could also be determined in a USPTO reissue, reexamination, or interference proceeding. In fact, former USPTO Commissioner Dickinson encouraged the filing of reexamination requests for Internet business model patents. See Pizzo, *supra* note 2. Such encouragement is not surprising considering the fees the USPTO generates from reexaminations. As of November 29, 2000, the filing fee for a non-provisional utility application was \$710.00 while the fee for requesting a reexamination of a patent was \$2,520.00. 37 C.F.R. §§ 1.16(a), 1.20(c), respectively. While an ethic of quality and efficiency would seek to get examination right the first time, apparently, the USPTO view is that since most patents are not commercialized, getting it right the first time is not that critical, as mistakes for the really important patents can be fixed in reexamination. Considering the significant (25%) Congressional diversion of USPTO user fees, such reasoning can almost, but not quite, be justified. See *USPTO Fiscal Year 2001 Budget Mark Will Seriously Impact Agency*, available at <http://www.uspto.gov> (2000).

129. See, e.g., U.S. Patent Nos. 6,029,141 (issued Feb. 22, 2000); 5,948,061 (issued Sept. 7, 1999); 5,999,596 (issued Dec. 7, 1999); 5,845,265 (issued Dec. 1, 1998); 6,049,778 (issued Apr. 11, 2000); 6,064,980 (issued May 16, 2000).

130. See, e.g., U.S. Patent Nos. 5,794,207 (issued Aug. 11, 1998); 5,761,648 (issued June 2, 1998); 6,029,141 (issued Feb. 22, 2000); 5,948,061 (issued Sept. 7, 1999); 6,035,288 (issued Mar. 7, 2000); 5,970,478 (issued Oct. 19, 1999).

Furthermore, the problem is not likely to be solved by the USPTO in the foreseeable future for Internet business model patents. Two key reasons are lack of USPTO examiner training in the relevant art and inadequate access/availability of relevant prior art.<sup>131</sup> In a white paper on business method patents, the USPTO outlined several initiatives designed to improve business method patent examination quality.<sup>132</sup> The USPTO noted that 38 examiners (up from 12 in late 1997) currently work in Class 705, Modern Business Data Processing, which contains various subgroups directed to business data processing machines and methods. While examiners in other areas have on average 18 hours to examine an application (a paltry figure), examiners in Class 705 are given 31 hours to examine an application.<sup>133</sup> Even with the extra time, however, inadequate training will continue to stymie quality review of business model patents. For example, a recent study of finance patents, another subset of business model patents revealed that comparable patents in more traditionally researched (and published) and patented areas such as chemistry, energy, and microbiology had eight times more citations to academic papers than the average finance patent.<sup>134</sup> Lack of experience on the part of the patent examiners was deemed the cause of the “extraordinary” relative paucity of academic citations in the finance patents.<sup>135</sup> Commercial business models of the type that are being applied to the Internet, are likely, if anything, to be less well documented than financial methods. There simply is no real scientific literature on business models. Even business school case method studies do not provide a systematic compilation of business models that would be easily

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131. As Merges notes:

There is every reason to believe that there is a vast volume of non-patent prior art in the software-implemented business concept field . . . . Given that business people have been pioneering new concepts since commerce began, and that Internet commerce has seen exponential growth in recent years, very few of the developments in this area have found their way into patents. They are reflected instead in actual businesses, business plans, the financial services industry literature, and the like. It therefore seems likely that many of the patents being issued in this area overlook highly relevant prior art. Thus the error rate for these patents is likely to be quite high.

Merges, *supra* note 38, at 589–90 (citations omitted).

132. See *USPTO White Paper*, *supra* note 12; see also *Patent Business Methods Homepage*, available at <http://www.uspto.gov/web/menu/pbmethod/> (last visited Mar. 23, 2001).

133. See *id.*

134. See Josh Lerner, *Where does State Street Lead? A First Look at Finance Patents, 1971–2000*, Harvard Business School Faculty Publications, available at <http://www.people.hbs.edu/jlerner/StateStreet.pdf> (last visited Mar. 23, 2001).

135. See *id.*

accessible to a patent examiner—assuming the examiner were even looking for such art.

Thus, it is questionable at best how well the problems can be expected to diminish over time with examiner hiring and training, and the buildup of prior art databases. In the short term<sup>136</sup> however, these problems translate into a different challenge for courts and competitors of Internet business model patent owners: issued patents are presumed valid, like any other patent, yet their USPTO examination is likely to have been inadequate.

Furthermore, to the extent business method and software prior art has traditionally lacked documentation in patent or printed publication form, it is unlikely to be cited by an examiner during patent prosecution. Moreover, because of the real or perceived “business methods exception” to patentability, non-Internet related business methods have not been patented to any meaningful extent. Also, affidavit evidence of § 102(a) “known or used by others in this country” prior art or § 102(b) “on sale or in public use” prior art generally is not available to examiners.<sup>137</sup> This is because applications are prosecuted *ex parte* and in secret, and competitors who would have the most incentive to search out and produce such documentation are not privy to the proceedings.

Even with the pre-grant publication of applications mandated by the AIPA, prosecution will remain *ex parte*, and third parties are barred from turning prosecution into an *inter partes* proceeding.<sup>138</sup> Official Notice, the procedure by which examiners can reject a claimed invention for obviousness by combining references with a well known fact, is no solution because applicants can simply demand that the examiner either provide a reference or withdraw the rejection.<sup>139</sup> Consequently, a whole subset of potential § 102(a) prior art is not available to inform the obviousness inquiry during the prosecution process and would thus have to

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136. “Short term” is a relative phrase. While USPTO expertise in examining biotech patents may be somewhat comparable to that in other more established areas, the same cannot be said for software patents, even though they have been issuing from the USPTO for over a decade. *See* Lemley & Cohen, *supra* note 40. Part of the problem with software patents is that the patenting of software as such was in doubt until recently. Also, the software development community does not have the same tradition of publishing/documentation as is prevalent in, for example, the biotech research community.

137. 35 U.S.C. §§ 102(a), (b) (1999).

138. 35 U.S.C. § 122(b) (1999).

139. *See* MPEP § 2144.03; *see also* James Gleick, *supra* note 8 (“People send in some really strange stuff for patents, and I have no choice but to issue it,” says one examiner. ‘I can’t say, ‘Gee, that’s obvious to me.’ ‘Evidence of obviousness has to be out there and public and in the same detail.’”). However, MPEP § 706.02(c) does allow an Examiner to reject an application under 35 U.S.C. §§ 102(a) or (b) if the examiner has personal knowledge that the invention was sold by the applicant or known by others in the U.S.

be introduced in an expensive court proceeding where the patent now has a presumption of validity.

Enter the doctrine of equivalents, which essentially provides that “something different from that which a patent claims can infringe, so long as the differences between the claimed and unclaimed subject matter are minor.”<sup>140</sup> To find literal infringement, a court will construe the claims of a patent to determine if they cover an accused product or process.<sup>141</sup> However, even if literal infringement is not found, the accused process may still infringe under the doctrine of equivalents. The doctrine is a controversial one, largely because when applied broadly, it “conflicts with the definitional and public-notice functions of the statutory claiming requirement” of 35 U.S.C. § 112, which specifies that an applicant must distinctly point out and particularly claim what he considers to be his invention.<sup>142</sup> This doctrine has the potential to be especially troubling in the area of Internet business model patents, where, as noted earlier, a claimed method may in fact cover other methods (e.g., other computer programs) which could be used to implement a particular business model.

In a 1950 decision, *Graver Tank & Mfg. Co. v. Linde Air Products Co.*, the Supreme Court formulated the test for invocation of the doctrine of equivalents as whether the accused product or process performed substantially the same function in substantially the same way to obtain substantially the same result as the patented invention.<sup>143</sup> The Federal Circuit reframed the question in 1987 in *Pennwalt Corp. v. Durand-Wayland, Inc.*, deciding whether there was only an “insubstantial change” between the invention and the accused device.<sup>144</sup> Then in 1997, the Supreme Court again visited the doctrine, noting that what counts is not the particular linguistic framing of the test but rather identifying whether “the accused product or process contain[s] elements identical or equivalent to each claimed element of the patented invention.”<sup>145</sup>

The doctrine of equivalents is an equitable doctrine, judicially created to do equity by imposing liability where there is no literal infringement, but where such action is necessary to prevent “what is in essence a pirating of the patentee’s invention.”<sup>146</sup> As an equitable

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140. The Honorable Paul R. Michel, *The Role and Responsibility of Patent Attorneys in Improving the Doctrine of Equivalents*, 40 IDEA 123 (2000).

141. See *Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 866 (Fed. Cir. 1985).

142. *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 29 (1997).

143. See *Graver Tank & Mfg. Co. v. Linde Air Prods., Co.*, 339 U.S. 605, 608 (1950).

144. *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 935 (Fed. Cir. 1987).

145. *Warner-Jenkinson*, 520 U.S. at 40.

146. *Loctite*, 781 F.2d at 870 (quoting *Hughes Aircraft Co. v. U.S.* 717 F.2d 1351, 1361 (Fed. Cir. 1983)).

principle, there are limitations on the application of the doctrine of equivalents. Two limitations of special concern vis-à-vis Internet business model patents are prosecution history estoppel and prior art/obviousness.<sup>147</sup>

Prosecution history estoppel, also known as file wrapper estoppel, prevents subject matter relinquished during prosecution of the patent from being reclaimed under the doctrine of equivalents.<sup>148</sup> Thus, if a patentee narrows her claims during prosecution to avoid the disclosure of a prior art reference, the patentee cannot later claim, in an infringement action, that an accused device or process embodying the surrendered subject matter infringes her claims under the doctrine of equivalents. If relevant prior art, however, is not uncovered during the prosecution process—as appears to be occurring with Internet business model patents—prosecution history estoppel is effectively mooted as a limitation on application of the doctrine of equivalents, giving such patents the status of “pioneer” patents by default. As described by the Supreme Court, a “pioneer” patent is:

[A] patent covering a function never before performed, a wholly novel device, or one of such novelty and importance as to mark a distinct step in the progress of the art, as distinguished from a mere improvement or perfection of what had gone before. Most conspicuous examples of such patents are . . . the sewing machine; . . . the electrical telegraph; and . . . the telephone.<sup>149</sup>

As ground-breaking inventions, pioneer patents are generally given a more liberal interpretation under the doctrine of equivalents than would otherwise be accorded. The Federal Circuit’s discussion of why pioneer patents are granted broad equivalence is instructive:

Courts early recognized that patented inventions vary in their technological or industrial significance. Indeed, inventions vary as greatly as human imagination permits. There is not a discon-

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147. Additional limitations include the “all limitations rule,” see *Pennwalt Corp. v. Durand-Wayland, Inc.*, 833 F.2d 931, 935 (Fed. Cir. 1987), the rule of “dedication” of unclaimed subject matter, see *Maxwell v. J. Baker, Inc.*, 86 F.3d 1098 (Fed. Cir. 1996), application of the doctrine to means-plus-function claims allowed by 35 U.S.C. § 112, ¶ 6, see *Chiuminatta Concrete Concepts, Inc. v. Cardinal Indus., Inc.*, 145 F.3d 1303 (Fed. Cir. 1998). See also Michel, *supra* note 140 (discussing the five legal bars to the doctrine of equivalents). A discussion of these additional rules is beyond the scope of this article.

148. See *Warner-Jenkinson*, 520 U.S. at 29; see also *Festo Corp. v. Shoketsu Kinzoku Kogyo Kabushiki Co. Ltd.*, 234 F.3d 558 (Fed. Cir. 2000). Consequently, the Federal Circuit’s broad approach to applicant actions that trigger prosecution history estoppel will have little impact on Internet business model patent infringement litigation, to the extent minimal prior art is cited in such patents during prosecution.

149. *Westinghouse v. Boydon Power-Brake Co.*, 170 U.S. 537, 561–62 (1898).

tinuous transition from “mere improvement” to “pioneer.” History shows that the rules of law governing infringement determinations are amenable to consistent application despite the variety of contexts that arise. The judicially “liberal” view of both claim interpretation and equivalency accorded a “pioneer” invention, . . . is not a manifestation of a different legal standard based on an abstract legal concept denominated “pioneer.” Rather, the “liberal” view *flows directly from the relative sparseness of prior art in nascent fields of technology*.<sup>150</sup>

Finding infringement under the doctrine of equivalents unlimited by prosecution history estoppel because of the pioneering nature of the invention and the “relative sparseness” of prior art in the area is one thing. Finding infringement under the doctrine of equivalents—unlimited by prosecution history estoppel because the USPTO is ill equipped to search for or obtain relevant prior art to apply against the claimed invention—is something entirely different. It is incumbent on courts to take note of the examination defects inherent in Internet business model patent prosecution when applying what is, at its heart, an equitable doctrine.

Where the doctrine of prosecution history estoppel is a nullity because of a lack of prior art in the patent file wrapper, prior art or obviousness limitations may still bar application of the doctrine of equivalents. The prior art limitation simply recognizes that the doctrine of equivalents cannot ensnare an accused device that is found in the prior art.<sup>151</sup> This is because the doctrine of equivalents “exists to prevent a fraud on a patent, not to give a patentee something which he could not lawfully have obtained from the USPTO had he tried.”<sup>152</sup> This limitation applies not only to devices or processes in the prior art, but also to those that “would have been obvious to one of ordinary skill in the art” at the time of the invention.<sup>153</sup> Consequently, prior art that was not before the examiner during prosecution of a patent may still limit application of the doctrine of equivalents if the features of the accused device considered infringing under the doctrine of equivalents are present in the prior art.

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150. *Texas Instruments, Inc. v. U.S. Intern. Trade Comm’n*, 846 F.2d 1369, 1370 (Fed. Cir.1988) (citations omitted, emphasis added).

151. *See Loctite Corp. v. Ultraseal Ltd.*, 781 F.2d 861, 866 (Fed. Cir. 1985).

152. *Wilson Sporting Goods Co. v. David Geoffrey & Assoc.*, 904 F.2d 677, 684 (Fed. Cir. 1990).

153. *Streamfeeder, LLC v. Sure-Feed Sys. Inc.*, 175 F.3d 974, 982 (Fed. Cir. 1999).

Even the prior art/obviousness limitation, however, may be of little effect in the Internet business model arena because of the difficulty of finding prior art and the narrow definitions of analogous art that are often employed. To the extent defendants are able to locate relevant prior art not before the examiner during prosecution, the prior art/obviousness limitations on application of the doctrine of equivalents must be rigorously enforced.<sup>154</sup> Furthermore, the definition of analogous art in USPTO and court proceedings must be sufficiently broad so as to ensure that truly relevant prior art will not be excluded from the infringement analysis.

### B. *The Doctrines Intersect*

The importance of applying real world prior art to Internet business model patents in properly defining claim scope cannot be overstated. Take, for example, the case of *Fantasy Sports Properties, Inc. v. Sportsline.com, Inc.*<sup>155</sup> In *Fantasy Sports*, the holder of a patent on a computerized football game (“the ‘603 patent”) sued Yahoo and other providers of on-line fantasy football games for patent infringement. To prove literal infringement by Yahoo of claim 1 of the ‘603 patent, Fantasy Sports had to show that Yahoo’s game contained every limitation of the claim.<sup>156</sup> Yahoo moved for summary judgment of non-infringement arguing that either its game did not include the award of “bonus points” as stated in the claim, or that its game only included scoring as disclosed in the prior art.<sup>157</sup>

The district court granted Yahoo’s motion, finding no infringement of the claim. That finding, however, hinged on the teaching of a “real world” prior art reference, a magazine for fantasy leagues run in the “bricks and mortar” world, and that had played a key role in the patentee’s amending its claims during prosecution.<sup>158</sup> The only reason the reference was before the judge, however, was because the applicant had voluntarily provided it to the USPTO during prosecution of the ‘603 patent. Without the reference, it is unclear what result would have been obtained in this case. The court did not even discuss infringement under the doctrine of equivalents, perhaps because Yahoo’s accused game was clearly within the scope of the prior art. Accordingly, to expand the ‘603 claims to cover the accused game under the doctrine of equivalents

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154. See *Wilson Sporting Goods*, 904 F.2d at 684.

155. *Fantasy Sports Properties, Inc. v. Sportsline.com, Inc.*, 103 F. Supp. 2d 886 (E.D. Va. 2000).

156. *Id.* at 891.

157. *Id.*

158. *Id.* at 892.



would also impermissibly ensnare the prior art.<sup>159</sup> The presence of the reference allowed the court to appropriately define the scope of the patent claims, whereas omission of the reference could have opened the door to a finding of either literal infringement or of infringement under the doctrine of equivalents.

For all of the reasons noted above, an e-commerce outfit charged with infringement by a holder of an Internet business model patent has good reason to be apprehensive. For all of these same reasons, broadly defining analogous art and judiciously invoking the doctrine of equivalents for Internet business model patents are necessary approaches for both the USPTO and the courts.

### CONCLUSION

There are, of course other more drastic changes that could be made regarding Internet business model patents, such as the passage of legislation like the Business Method Patent Improvement Act. These options, however, would require, at a minimum, Congressional action and would not necessarily provide desirable results.

For example, elimination of the 35 U.S.C. § 282 presumption of validity for Internet business model patents for some of the reasons related to USPTO examination mentioned above could create a more level playing field between patentees and competitors, and possibly impact the *in terrorem* effect of Internet business model patents. Without the presumption of validity, the standard of proof for invalidating a patent could be lowered from “clear and convincing evidence” to a “preponderance of the evidence” standard.<sup>160</sup> Such a change is particularly appealing in light of the above-mentioned absence of § 102(a) invalidating prior art during the initial USPTO examination process of Internet business model patents. Because the purpose of the presumption is to “contribute stability to the grant of patent rights,” however, its elimination could have a profound and far-reaching effect on the patent system as a whole.<sup>161</sup> Also, assuming that, over the long haul, the USPTO is able to develop expertise in examining Internet business

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159. See *Wilson Sporting Goods Co.*, 904 F.2d 677, 684 (Fed. Cir. 1990) (“Since prior art always limits what an inventor could have claimed, it limits the range of permissible equivalents of a claim.”).

160. See *Lindemann Maschinenfabrik GMBH v. American Hoist & Derrick Co.*, 730 F.2d 1452, 1459 (Fed. Cir. 1984) (“Courts are not . . . at liberty to repeal a statute . . . . Because the mere introduction of non-considered art (a common phenomena) does not “weaken” or otherwise affect the presumption, there is no basis for adjusting the required level of proof downward to a ‘mere preponderance.’”).

161. See *Magnivision, Inc. v. Bonneau Co.*, 115 F.3d 956, 958 (Fed. Cir. 1997).

model applications comparable to its expertise in other more traditional areas, the logical basis for denying a presumption of validity to a single class of patents will have less force.<sup>162</sup>

Some commentators have also suggested the creation of a lower type of patent protection specifically for Internet business models and other “low tech” innovations.<sup>163</sup> Key features of such a system would include a shorter patent term (3 to 5 years) and an expedited examination process, with a variety of proposed additional features.<sup>164</sup> While such proposals have long-term merit, they still have fairly significant drawbacks and certainly could not be feasibly implemented anytime in the near future.

Another option is for Congress to limit the scope of enforceability of Internet patents to zero by allowing patents to issue but providing no remedy for infringement, an idea applied to medical and surgical procedures in 35 U.S.C. § 287(c)(1).<sup>165</sup> However, the benefits of such a course

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162. See *USPTO White Paper*, *supra* note 12. This is not to suggest that the quality of patents in other areas is optimal. In fact, reducing the standard of proof for all patent areas is an idea that is not without merit. Consider the following commentary:

I believe that the greatest difficult[y] with the patent system is not so much assertion of valid patents, but the risk of bullying with patents that are invalid. . . . The difficulty is that even with invalidating art in hand, the standard of proof by “clear and convincing evidence” is virtually impossible to meet in practice before a jury. Given the complexity of the law alone, and informed that if they waver in any sense as to their convictions, they must find for the plaintiff, your average juror will invariably find the patent valid . . . . My suggestion is that when invalidating prior art was not considered by the USPTO, and raises a substantial new question of patentability, then . . . [the standard should be] relaxed to the more common “preponderance of the evidence” standard . . . . This would continue to protect sound patents. However, . . . [it] will raise a significant and meaningful deterrent against the bullying practices that have now become so common in industry.

Andy Greenberg, *Discuss Patents at Amazon.com (In Response to Jeff Bezos)*, Message 23 of 227, available at <http://amazon.remarq.com/> (posted Mar. 9, 2000) (on file with MTTLR).

163. See, e.g., Ann Bartow, *Separating Marketing Innovation from Actual Invention: A Proposal for a New, Improved, Lighter, and Better-Tasting Form of Patent Protection*, 4 J. SMALL & EMERGING BUS. L. 1 (2000) (advocating the creation of an “origination patent” for low-tech innovations); Jeffrey Bezos, *An Open Letter From Jeff Bezos on the Subject of Patents*, available at <http://www.amazon.com/patents> (suggesting a different patent regime for Internet business model patents) (last visited Mar. 23, 2001); cf. Mark D. Janis, *Second Tier Patent Protection*, 40 HARV. INT’L. L.J. 151 (1999) (arguing against U.S. implementation of a second-tier patent system such as is available in Europe and Japan).

164. For example, Mr. Bezos’ proposal would create a pre-issuance opposition period during which competitors could bring prior art to the attention of the USPTO. See Bezos, *supra* note 163. Under Professor Bartow’s second-tier system, origination patents would be immune to court attacks based on obviousness. See Bartow, *supra* note 163.

165. 35 U.S.C § 287(c)(1) provides, in pertinent part:

[w]ith respect to a medical practitioner’s performance of a medical activity that constitutes an infringement under section 271(a) or (b) of this title, the provisions of sections 281, 283, 284, and 285 of this title shall not apply against the medical

of action over creating a true “business methods” exception to patentability are questionable, and such a statutory provision could violate U.S. obligations under TRIPS.<sup>166</sup>

Determining the proper scope to be given Internet business model patent claims is critically important in view of the monopoly rights involved. “Although recognizing the patent system’s desirable stimulus to invention, we have also viewed the patent as a monopoly which, although sanctioned by law, has the economic consequences attending other monopolies. A patent yielding returns for a device that fails to meet congressionally imposed criteria of patentability is anomalous.”<sup>167</sup> Justice Bradley stated it well:

It was never the object of those [patent] laws to grant a monopoly for every trifling device, every shadow of a shade of an idea, which would naturally and spontaneously occur to any skilled mechanic or operator in the ordinary progress of manufactures. Such an indiscriminate creation of exclusive privileges tends rather to obstruct than to stimulate invention. It creates a class of speculative schemers who make it their business to watch the advancing wave of improvement, and gather its foam in the form of patented monopolies, which enable them to lay a heavy tax upon the industry of the country, without contributing anything to the real advancement of the arts. It embarrasses the honest pursuit of business with fears and apprehensions of concealed liens and unknown liabilities to lawsuits and vexatious accountings for profits made in good faith.<sup>168</sup>

If not for the fact that the above quote was written more than 100 years ago, one could imagine that the Court had in mind the intrepid

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practitioner or against a related health care entity with respect to such medical activity.

(2) For the purposes of this subsection:

- (A) the term “medical activity” means the performance of a medical or surgical procedure on a body, but shall not include (i) the use of a patented machine, manufacture, or composition of matter in violation of such patent, (ii) the practice of a patented use of a composition of matter in violation of such patent, or (iii) the practice of a process in violation of a biotechnology patent . . . .

35 U.S.C § 287(c)(1).

166. Agreement on Trade-Related Aspects of Intellectual Property, Apr. 15, 1994, 108 Stat. 4809, 33 I.L.M. 81; *see also* Thomas, *supra* note 8, at 1177 (discussing Article 27 of TRIPs which requires signatories to make “patent rights enjoyable without discrimination as to . . . the field of technology”).

167. *Cardinal Chem. Co. v. Morton Int’l, Inc.*, 508 U.S. 83, 101 n.24 (1993) (citation omitted).

168. *Atlantic Works v. Brady*, 107 U.S. 192, 200 (1882).

Internet business model “inventors” of today. While there may possibly be novel business model innovations worthy of patent protection, patents on such inventions must be limited to their proper scope and unworthy innovations must be denied protection for progress in the useful arts to continue to flourish.

Defining the scope of a method claim too broadly allows an inventor to appropriate an entire idea, disguised as a method, in violation of § 101 of the Patent Act. The USPTO and the courts must accurately apply the § 103 non-obviousness requirement to Internet business models by properly defining the scope and content of the prior art, in particular, by broadly defining analogous art. Furthermore, courts must consider the “real” deficiencies attendant in the prosecution of many Internet business model patents when deciding whether application of the doctrine of equivalents is warranted for “pseudo” pioneer innovations.

A drastic response to Internet business model patents is not inevitable. Re-tuning the obviousness analysis by broadly defining analogous art, along with limiting application of the doctrine of equivalents, provides a rational means for effectively defining the scope of Internet business model patents in the “real” world.