

**THE MYTH OF INHERENT AND INEVITABLE
“INDUSTRY DIFFERENCES”: “DIVERSITY”
AS ARTIFACT IN THE QUEST
FOR PATENT REFORMS**

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Cite as: Robert A. Armitage, *The Myth of Inherent and Inevitable
“Industry Differences”: “Diversity” as Artifact in
the Quest for Patent Reforms*

13 MICH. TELECOMM. TECH. L. REV. 401 (2007),
available at <http://www.mttr.org/volthirteen/armitage.pdf>

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INTRODUCTION

The University of Michigan Law School hosted a two-day conference entitled “Patents and Diversity in Innovation.”¹ The morning of the

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1. Patents and Diversity in Innovation, <http://students.law.umich.edu/mttr/patentsanddiversity/> (last visited Feb. 20, 2007).

first day featured a panel devoted to “industry differences.” This panel took up the task of dealing with the following questions:

How has diversification of innovation and the expansion of patentable subject matter affected patent practice? How do markets for technology vary from sector to sector? And how do they reflect or influence patent practice? To what extent are business practices and competitive markets shaped by the nature of the technology, product, or service?²

The panel on “industry differences” was designed to provide a critical predicate for this two-day enterprise. The panel was needed to validate the conference’s implicit premise that the patent system works differently in different industries, thereby affording credibility to the contention that a future patent system might take account of “industry differences” more broadly and comprehensively.

The conference’s subsequent discourse was then set to address how—industry sector by industry sector—differing requirements for patentability, differing protocols for patent examinations, differing remedies for patent infringement, and differing competition law principles applicable to the exercise of these exclusivity rights would become part of the laws for patenting inventions. This intent to devise parameters for a “post-unitary patent system” was cogently captured on the same web page in the following question: “At what level and how would a ‘post-unitary’ patent system differentiate among economic characteristics and conditions?”³

A conference titled “Patents and Diversity” did not need to be premised on an unproven contention that consequential industry differences do exist. It could have set out to question the existence and significance of industry differences, and, had they been found, it could have focused on their etiology.

If the conference had focused on the latter, one of the core questions for examination could have been: Are the differences that manifest themselves among industries truly *inherent* or *inevitable* differences, driven by disparities between technology sectors, which should lead policy makers to a post-unitary patent system, or, alternatively, are such differences simply artifacts to be disregarded in deciding the future contours of a unitary patent system? The conference could have examined whether or not differences between industry sectors are *derivative*

2. Patents and Diversity in Innovation, Issues, <http://students.law.umich.edu/mttlr/patentsanddiversity/issues.htm> (last visited Feb. 20, 2007).

3. *Id.*

instead of *inherent*. A penetrating analysis might afford no support whatsoever for fostering the creation of the "post-unitary" patent system.

More specifically, the conference might have zeroed-in on a cause-and-effect analysis. It could have debated and considered the following questions:

- Is the notion that inherent or inevitable "industry differences" exist between technology sectors just plain wrong?
- If so, does the absence of significant inherent differences among industry sectors destroy any possible justification for creating a "post-unitary" patent system crafted to somehow "differentiate among economic characteristics and conditions"?
- Alternatively, are the apparent "industry differences" attributable to a patent system in need of a set of *unitary*, quality-related reforms (most particularly reforms that would apply commonly across industry sectors)?
- If such an agenda of unitary reforms was successfully enacted, would the apparent "industry differences" be substantially eliminated?

A strong case can be made that the conference ran topsy-turvy. The conference avoided serious consideration of the contention that "industry differences" are the *effect* of a patent system in need of a set of unitary reforms, rather than the *cause* for defining an agenda of non-unitary changes to the patent laws calculated to produce a post-unitary patent system. In other words, had the *effect* not been treated as the *cause*, the conference would have concluded that "industry differences" should not drive patent reforms but are simply an artifact of a unitary patent system in need of substantial and unitary reforms.

Thus, by looking at "industry differences" as a cause (i.e., the jumping-off point for a pell-mell rush to disunity in the patent laws) and not an effect (i.e., the result of a patent system sorely in need of quality-focused, but unitary, reforms), the conference neglected what should have been a decisive, predicate debate; a debate that might have mooted much of the remainder of the conference.

The conference might have picked as a jumping-off point the work of the National Research Council of the National Academies on patent law reform. In 2004 the National Academies published a report that was the product of both sponsored research and over four years of deliberations by

academics, economists, and patent professionals.⁴ It contained a set of recommendations for *unitary* changes to the patent laws that were sweeping in their scope: adopt “harmonizing changes” (the first-inventor-to-file principle and elimination of the “best mode” requirement), eliminate “subjective elements” from patent litigation (the “willfulness” doctrine, the unenforceability defense based upon “inequitable conduct,” and the “best mode” requirement), and institute an “open review” procedure in the U.S. Patent and Trademark Office (USPTO) for eliminating mistakenly issued patents.⁵ A core recommendation of the National Academies’ work was that a *unitary* patent system should be preserved through enactment of this set of *unitary* patent law reforms,⁶ largely directed to patent quality improvements and greater civil justice for patent litigants.

In the last Congress, both the House and Senate saw legislation introduced that was principally directed to these initiatives.⁷ Presuming the National Academies’ recommended reforms in these two bills were to become law, what would become of “industry differences”? Would a conference devoted to “patents and diversity” still be necessary to lead the charge for a “post-unitary” patent system?

This Article offers the analysis on “patents and diversity” that might have been—had the conference challenged, rather than swallowed, its premise.

I. NO INDUSTRY DIFFERENCES EXIST ON CRITICAL FACTORS FOR JUDGING THE SUCCESS OR FAILURE OF A PATENT SYSTEM

The first clue that a post-unitary patent system might not be needed as a response to inherent and inevitable “industry differences” is the absence of an industry difference when defining the critical factors for judging the success or failure of a patent system. If patent systems succeed or fail for the same set of reasons, regardless of industry sector, it becomes vastly more complicated, analytically, to posit the need for a “post-unitary” patent system.

A poll across all industry groups to identify the factors needed for a successful patent system would produce a consonant set of answers. There is one cross-industry “hymnal” from which virtually all IP manag-

4. NAT’L RESEARCH COUNCIL OF THE NAT’L ACADS., A PATENT SYSTEM FOR THE 21ST CENTURY, (Stephen A. Merrill et al. eds., The National Academies Press 2004), *available at* <http://books.nap.edu/html/patentsystem/0309089107.pdf>.

5. *Id.* at 81–129.

6. *Id.*

7. *See* S. 3818, 109th Cong. (2006); H.R. 2795, 109th Cong. (2005).

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ers sing in complete harmony. Regardless of industry sector, a patent system succeeds through:

- rigorous application of patentability rules that constrain what patents may issue and how broadly they can claim inventions;
- consistent application of those rules;
- patenting principles that lend themselves to highly predictable outcomes in the patent office and the courts;
- prompt examination of all of an inventor’s claims to an invention;
- exclusive use of objective requirements for patentability that are straightforward in their application;
- patentability assessments that depend solely on publicly accessible information; and
- certainty in the enforcement of valid patent rights.⁸

Factors fostering failure are the negative mold for the success factors:

- patentability rules that are not well developed nor well understood as they apply to various types of technologies, especially those relatively new to patenting;
- patentability rules that are not consistently applied in the patent office;
- enforcement of valid patent rights is unduly expensive and difficult;
- challenges to the validity of questionable patents are arduous, expensive, and time-consuming; and
- patentability determinations that are unpredictable, creating prolonged uncertainty over the scope of protection, with undue dependency upon non-public information and subjective factors.

What is the hallmark of a “successful” patent system under these unitary criteria? The most commonly articulated trait of such a system is that *a person with an understanding of patent law and skilled in the technology of a patented invention would be able to pick up a patent, reference only publicly accessible information, and make a prompt,*

8. See NAT’L RESEARCH COUNCIL OF THE NAT’L ACADS., *supra* note 4, at 2–5.

*certain, and final determination of the patent's validity and the scope of protection afforded.*⁹

The only significant criticism of these success factors (and their flip-side failure factors) is that they may not capture everything needed for success or failure of a patent system. However, even if these factors are only exemplary, adding more such factors would do nothing more than broaden the consensus. The theme is common—the recipe for success is to take out unpredictability, uncertainty, excessive costs, and prolonged delays in establishing and resolving the scope of valid rights.

There is abundant evidence for the concurrence across industry sectors on these success and failure factors. The most significant evidence is the existence of two major industry coalitions that have emerged during the past two years—the Coalition for 21st Century Patent Reform and the Coalition for Patent Fairness. Both coalitions have supported patent reform legislation containing a host of common elements, largely tied to patent quality and civil justice issues.¹⁰ Between the two coalitions, approximately 100 companies are represented.¹¹

While the two coalitions have differences in the reform proposals that they are advocating, the overlap between the initiatives each supports is far more substantial. At their core, both want more public involvement in the patenting process—both before and after patent issues.¹² Both complain about the “subjective elements” in patent litigation and seek to cut back on their reach.¹³

Given this unitary view on which elements make a successful patent system and which do not—and the significant agreement across industry sectors on what reforms ought to be enacted in the new Congress—a pair of questions present themselves:

- Are some of the apparent “industry differences” the result of key failures (or insufficient success) of the existing patent system, which produce burdens that fall disproportionately on industry sectors relatively new to patenting?

9. Transcript of The National Academies' Board on Science, Technology, and Economic Policy, American Intellectual Property Law Association & The Federal Trade Commission Town Meeting on Patent Reform, San Jose, California Meeting (Feb. 18, 2005), http://www.aipla.org/Content/ContentGroups/Meetings_and_Events1/Roadshows/20058/TownMeeting_SanJose_Transcript.pdf (last visited Mar. 13, 2007).

10. See Letter from the Coalition for Patent Reform to The Honorable Lamar S. Smith, Chairman, House Subcommittee on Courts, the Internet and Intellectual Property (Sept. 1, 2005), available at http://www.aipla.org/Content/ContentGroups/Legislative_Action/109th_Congress/House1/Coalletter.pdf; Coalition for Patent Fairness, <http://www.patentfairness.org>.

11. *Id.*

12. *Id.*

13. *Id.*

- Do the remaining "industry differences" manifest themselves because of the greater tolerance for patent system failures in industry sectors that rely on patents to sustain market capitalizations?

These two questions will be examined in the sections that follow. The importance of these questions should be apparent. If the reforms envisioned by the National Academies effectively address the failures of the patent system, they also address the root causes for the manifestation of industry differences. In a patent system that truly succeeds under the consensus factors of success, the "industry differences," which are a result of the differential impact of failure factors and differential tolerance for such failures in different industries, largely disappear.

II. "INDUSTRY DIFFERENCES" WILL MANIFEST THEMSELVES IN A FAILING PATENT SYSTEM BECAUSE FAILURE DISPROPORTIONATELY IMPACTS TECHNOLOGY SECTORS RELATIVELY NEW TO PATENTING

Patenting principles can be difficult to apply in any technology sector because their application requires the deconstruction of something tangible and physical into something abstract and linguistic. Application of patentability principles to an invention depends upon both an understanding of the invention and of the existing technology from which the invention arises. It requires the invocation of language that can definitively characterize the invention and distinguish it from all pre-existing technology. Of equal importance, inventors must articulate the line between the new technology that is their individual creation and any future technology for which the inventor does not yet possess a complete conception or cannot otherwise describe its practical implementation.

In an industry sector that is relatively new to patenting, all the complications of getting a patent system to work efficiently and effectively become magnified. This is due to the difficulty of designing effective patenting strategies when the application of patent law to that new technology sector is unpredictable. Patent law is inevitably unpredictable without a substantial body of legal precedent. Moreover, the scant precedent may shift to and fro before settling down as a consistent body of law.

This unpredictability affects even the most basic concepts in patenting. This was certainly true for biotechnology in the 1970's and 1980's on the full panoply of patenting issues: utility, written description, enablement, definiteness, subject matter eligibility for patenting

and non-obviousness. It is today no-less a truth in the information technology (IT) sector.

As an example of the current confusion that exists in the IT sector, even on the most basic of patenting principles the Supreme Court is deciding this term a case that may turn on whether computer software code by itself can qualify as “a component of a patented invention.”¹⁴ The Federal Circuit has held that it can because software code *itself* is patent eligible subject matter and, therefore, can certainly be a component of a patented invention.¹⁵

However, is software code alone something that meets the subject matter eligibility requires for patenting? Software code, or so-called “object code,” is a sequence of binary values that is commonly represented as a series of zeros and ones. Its *alter ego* is so-called “source code” that is written in a human-intelligible computer programming language. Thus, what the “object code” encodes is a set of instructions (information) that can be recognized by a digital computing machine. Through the computing machine’s recognition of the object code, the computing machine’s function is directed.

Software, whether machine-recognized “object code” or human-intelligible “source code,” is, in and of itself, simply information. It is instructions or directions, which have never been eligible for patents. Information itself is not a “process, machine, manufacture, or composition of matter.”¹⁶

After 216 years of patent jurisprudence on what is patent-eligible subject matter, how is it possible that any confusion could exist on the simple question of whether “information,” in the form of software code or otherwise, is a patent-eligible product or process? The unfortunate reality is that the Federal Circuit has not yet addressed this issue with sufficient analytical depth as it relates to software code standing alone, in part because it has decided too few cases on the topic. The same is true for the application of other important principles of patent law as applied to computing machines: what type of “written description” is needed, how detailed must the enabling disclosure be and what prior art is enough to deny a patent for “obviousness?”

Because the case law on patenting in individual technology sectors has historically been slow to develop, it can take decades to see how these standards will be applied to a new technology. Normally, this precedent develops as patent examiners reject patent claims for new

14. *Microsoft Corp. v. AT&T Corp.*, 414 F.3d 1366, 1369 (Fed. Cir. 2005), *cert. granted*, 127 S.Ct. 467 (2006).

15. *See Eolas Techs. Inc. v. Microsoft Corp.*, 399 F.3d 1325, 1339 (Fed. Cir. 2005) (“Without question, software code alone qualifies as an invention eligible for patenting.”).

16. 35 U.S.C. § 101 (2002).

technologies and the administrative patent judges (APJ) in the USPTO rule on appeals from those rejections. This by itself is a slow process, particularly where the Office is slow to examine and decide substantial numbers of patent appeals.¹⁷ These rulings by the USPTO are then appealed to the Federal Circuit.

Thus, the nuanced understanding of the patentability rules as they apply to biotechnology, software, business methods, nanotechnology, or any other new technology requires a large number of patent examiner rejections, APJ decisions, and *ex parte* appeals to the Federal Circuit. It is an arduous process, with no catalyst for urgency to get the law, as it applies to a new technology, clarified promptly.

The likelihood of a patent examiner mistakenly issuing an invalid patent is high during the early stages of this process. Indeed, substantial numbers of invalid patents may be issued as inventors overreach in their patent claims. For example, when gene patents first began to be issued as the biotechnology industry grew, inventors sought expansive patent claims reaching well beyond any credible claim to invention.

A classic example of overreaching in an emerging area of patenting was University of California's patent claiming *all* vertebrate insulin genes.¹⁸ Its claim was based upon its success at sequencing the rat insulin gene, but it offered no new insight into any of the insulin genes in other vertebrates.¹⁹ The University of California also laid claim to the human insulin gene,²⁰ again notwithstanding that it offered nothing new about the human gene's actual structure or how it might be isolated and put to a practical use. The Federal Circuit upheld the lower court's invalidation of these claims of the patent.²¹ *This* decision, issued twenty years after the initial patent application was filed, demonstrates just how long the process for determining how the patentability rules can be.

In a more established technology sector, one in which the patentability rules have been thoroughly explored, the patenting story will be quite different: most of the issued patents more likely will be upheld in subsequent enforcement litigation, either as being entirely valid or mostly so. In a technology sector relatively new to patenting, issued patents will be of much less certain validity—and the probability is much higher that many such patents will be partially or entirely invalid. The “industry

17. See Summary of Patent Examining Activities, USPTO, http://www.uspto.gov/web/offices/com/annual/2006/50301_table1.html (last visited Feb. 23, 2007) (detailing the number of applications filed versus the number of applications disposed of by the Patent Office).

18. U.S. Patent No. 4,652,525 (filed Jun. 28, 1983) [hereinafter '525 Patent].

19. *Regents of the Univ. of Cal. v. Eli Lilly & Co.*, 119 F.3d 1559, 1567–69 (Fed. Cir. 1997).

20. '525 Patent.

21. *Eli Lilly & Co.*, 119 F.3d 1559.

differences” created by this disparity between mature technologies and those new to patenting can be quite remarkable.

The view of a company in a patent-mature industry sector, which faces a bushel basketful of entirely valid patents relevant to a technology, would not be seriously jaundiced by a rotten apple or two in the bushel basket. On the other hand, a company in an industry sector relatively new to patenting, faced with a bushel basket of relevant patents that are mostly rotten, would have an entirely different and negative view on the practical and commercial obstacles that the patent system presented to placing a new product on the market. While such a disparity in patent quality produces clear-cut industry-sector differences, such differences are not inherent to the technology itself—or even inherent in the strategies the companies in the industry sector might use for patenting inventions.

Thus, before concluding that inherent “industry differences” dictate embarking on a “post-unitary” patent system, it is essential to look at the inevitability of the “bad apple” issue. If it appears that some industry sectors face only a few bad apples, while others face bad apples by the bushel, the resulting “industry differences” do not justify seeking a “post-unitary” patent system. Instead, they cry out for promptness in the elimination of the disparity in the relative and absolute numbers of bad apples.

The “bad apple” issue, however, has dimensions other than those that arise from differing levels of sophistication of the patent system towards a technology. Even if *all* industry sectors faced *identical levels* of “bad apple” patents, the sheer number of “bad apples” differs *de facto* among industry groups because of differing patenting strategies. Some industry sectors patent more intensively than others, making the absolute numbers of patents within each industry sector differ significantly.

Looking at the statistics compiled by the Intellectual Property Owners Association (IPO) on the top companies granted new patents in 2005,²² it appears that if “bad apples” appeared at a *constant rate* across technologies, the absolute number of “bad apple” patents would be an order of magnitude greater for the IT sector than the pharmaceutical sector. The following table shows this disparity quite graphically:²³

22. Intellectual Property Owners Association, Top 300 Organizations Granted U.S. Patents in 2005 (Jun. 2, 2006), http://www.ipo.org/AM/Template.cfm?Section=Top_300_Patent_Owners.

23. *Id.*

Information Technology Sector—Patents	Pharma-Biotechnology Sector—Patents
IBM—2941	Pfizer—389
Hewlett-Packard—1808	Johnson & Johnson—379
Micron—1561	Bayer—176
Intel—1549	Sanofi-Aventis—145
Microsoft—750	Bristol-Myers Squibb—113
Texas Instruments—734	Merck—100
Sun Microsystems—715	Glaxo SmithKline—94

One major pharmaceutical company, Eli Lilly and Company, came in at the very bottom of the listing. With 48 patents issued to it in 2005, it ranked 299th. In terms of Research & Development budgets, a close comparator,²⁴ Cisco Technology, Inc., ranked 38th with 440 patents.

It is fair to conclude that the number of “bad apple” patents that a typical IT-industry enterprise might face is an order of magnitude higher than in the pharma-biotechnology sector, even if the maturity of the technology was ignored. Combined with the greater maturity of pharmaceutical patenting compared to IT patenting,²⁵ the number of “bad apple” patents in the IT sector is likely much greater in both absolute and relative terms.

Other, more subjective factors may also drive this differential even higher. While the sheer number of patents generated among the IT industries is huge, another “patent quality” driver is the attention given to individual patents during the drafting and application process. Because of the need for quality patents that can survive aggressive challenges by generic drug companies, the pharmaceutical industry must typically focus on patenting strategies that produce a relatively small number of patents, with each individual patent bathed in attention. Conversely, IT companies have adopted mass patenting strategies designed to produce huge numbers of patents that must be procured using low-cost approaches to drafting and examining. As a result, it is likely that the difference in the number of patents further understates the actual differential in “bad apples.”

Thus, when looking at the issue of “bad apple” patents, it appears that the differences are not so much in inherent industry differences as in

24. Compare Eli Lilly & Co., Annual Report (Form 10-K), at 8, available at <http://www.shareholder.com/common/edgar/59478/950137-06-2395/06-00.pdf>, and Cisco Systems, Inc., Annual Report (Form 10-K), at 8 (Sept. 18, 2006), available at <http://investor.cisco.com/phoenix.zhtml?c=81192&p=irol-sec>.

25. Maturity here is based upon the number of reported appellate court decisions interpreting basic patentability requirements in the two sectors.

maturity and strategy differences. The IT industry sector has adopted strategies that result in more patents, but less assurance that any individual patent will be a valid patent. These strategies operate in a technology sector that has been less fully developed in terms of the application of the patentability rules to the technology.

The “industry differences” that arise from the differential presence of “bad apple” patents would, of course, disappear if the “bad apples” themselves could be efficiently ejected from the patent system. The National Academies’ recommendations would appear to go the heart of redressing the “bad apples” issue as a source of apparent “industry differences.” By aggressively increasing the public involvement in the patenting process, especially the “open review” procedure that could quickly and inexpensively eliminate mistakenly issued patents, the disparities in patenting strategies would likely lessen dramatically across industry sectors.

III. QUESTIONABLE PATENTS HAVE DIFFERENTIAL NEGATIVE IMPACTS ON INDUSTRY SECTORS LESS DEPENDENT UPON PATENTS AS A DRIVER OF MARKET CAPITALIZATION

Imagine the respective changes in market capitalizations of Microsoft and Pfizer if copyrights were abolished tomorrow. One of the companies would likely be mortally wounded; the other might take little notice. Take the same imaginary journey but conjure the vision of patents instead of copyrights being abolished. There would still be two very different reactions, but the respective roles of the two companies would be reversed.

A Pfizer, Merck, or a Wyeth, with or without a copyright law, is largely the same enterprise. A Microsoft, an Oracle, or an Intuit might cease to exist altogether without an effective copyright law. No one can dispute, therefore, that there are “industry differences” that exist in terms of the dependency on a well-functioning copyright law. Indeed, for some companies, it is the principal driver of market capitalization; for others, it is of no material economic consequence. The same is clearly true of patent law.

This type of “industry difference,” however, creates no inherently different outlook on IP policy issues. Across industry groups, there is active and unwavering support for a *successful* copyright system—and active and unwavering support for a *successful* patent system.

What is true for a successful IP system is not necessarily equally true for a failing IP system. Pfizer and Microsoft might well express “indus-

try differences" if both faced a *failing* copyright system. If Pfizer, for example, faced enormous potential liability in copyright litigation as a result of being forced to defend against a multiplicity of questionable copyright claims, it would have an incentive to devote significant efforts to address the causes and effects of such a failing system.

In a failing copyright system of this type, Microsoft might not be as eager an advocate for significant copyright law reform. It could likely justify defending against scads of meritless copyright claims as a cost of doing business because the cost to defend against these meritless claims is trivial compared to the commercial benefits derived from its use of copyright law.

A similar *analysis* is holds true for Microsoft and Pfizer with respect to the patent system. A single patent can represent billions of dollars in market capitalization for a research-based pharmaceutical company.²⁶ A multi-billion dollar medicine might be protected by a single issued U.S. patent.²⁷ For many pharmaceutical companies, a relatively small number of such patents account for the bulk of their market capitalization.²⁸

In the IT community, a single device might be protected by dozens to hundreds of patents,²⁹ with the value of any individual patent being limited to the relatively negligible cost of developing an alternative technology to avoid the patent. This reality is best described by Apple Computer (184th on the IPO Top 300 Patent Owners of 2005 listing, with 85 issued U.S. patents), describing patents as an important, but not the primary, success factor for its business:

Patents, Trademarks, Copyrights and Licenses

The Company currently holds rights to patents and copyrights relating to certain aspects of its computer systems, iPods, peripherals and software. In addition, the Company has registered, and/or has applied to register, trademarks and service marks in the U.S. and a number of foreign countries for "Apple," the Apple logo, "Macintosh," "iPod," "iTunes," "iTunes Music Store," and numerous other trademarks and service marks. Although the Company believes the ownership of such patents, copyrights, trademarks and service marks is an important factor in its business and that its success does depend in part on the ownership

26. ELI LILLY AND CO., 2005 ANSWERS FOR SHAREHOLDERS 15 (2006) available at http://www.lilly.com/investor/annual_report/lillyar2005.pdf.

27. *Id.* (Zyprexa, an anti-psychotic medication, had approximately \$4.2 billion in sales in 2005). Zyprexa is covered by U.S. Patent No. 5,229,382.

28. ELI LILLY AND CO., *supra* note 26, at 15.

29. Wendy H. Schacht, Cong. Research Serv., Patent Reform: Innovation Issues 13 (July 15, 2005), available at http://tlc.usm.maine.edu/cli/documents/crs_report_patent_reform.pdf.

thereof, *the Company relies primarily on the innovative skills, technical competence, and marketing abilities of its personnel.*³⁰

Conversely, the typical 10-K for a pharmaceutical company identifies patents as material to the underlying business model, and reports on patents and patent expiration dates that define the life and death of the market for a branded medicine.³¹

The value of each patent means that when a major pharmaceutical company is sued on a questionable patent—a “bad apple” in the patent examination process—the costs of resolving the patent issue will be negligible compared to value of the company’s patent portfolio. “Bad apples,” however annoying and distracting, do not make the patent system less of an overall net positive for the pharmaceutical company.

When a company like Apple faces a “bad apple” patent, it has no multi-billion dollar offset from its patent-derived market capitalization. One “bad apple” patent may appear to be more of a potential risk and potential threat to the company than the value of any of its own individual patents, or even its entire patent portfolio covering one of its products. Thus, IT companies are affected differently by a patent system plagued with significant numbers of “bad apples,” especially where significant obstacles exist to promptly eliminating the “bad apples” after issuance. For these companies, the specter of bad apples by the basketful drives a very extreme view of the cost-benefit of the U.S. patent system.

While “bad apples” bedevil all industry sectors, those industry sectors where patents form a material part of the market capitalization of individual companies have a greater tolerance for mistakenly issued patents. In other industry sectors, bad apples, due to greater numbers and greater relative impact, can overwhelm the value of the patent system as a driver of innovation.

The pan-industry view that the burden of “bad apples” must be eliminated through patent quality measures suggests that the “industry difference” of relative impact is not an inherent difference in the operation of the patent system. This again circles the discussion back to the National Academies’ recommendations—make the needed “harmonizing” changes, eliminate “subjective elements,” and establish an “open review” procedure³²—all of which would address the existence and disposition of “bad apple” patents.

30. Apple Computer, Inc., Annual Report (Form 10-K), at 14–15 (September 4, 2005), available at <http://phx.corporate-ir.net/phoenix.zhtml?c=107357&p=irol-sec> (emphasis added).

31. See generally ELI LILLY AND CO., *supra* note 26.

32. See NAT’L RESEARCH COUNCIL OF THE NAT’L ACADS., *supra* note 4, at 81–129.

IV. THE DIFFERENTIAL IMPACT OF "BAD APPLE" PATENTS
HAS RESULTED IN A MISGUIDED FOCUS ON
DISABLING PATENT REMEDIES IN THE NAME OF
PATENT REFORM

Myths, believed and acted upon, do have consequences. Over the past two years, it has become clear that loose talk about *inherent* and *inevitable* "industry differences" in the operation of the patent system has produced unnecessary and unproductive discord in the efforts at patent reform.³³ The two coalitions have neither succeeded in bridging their few remaining differences nor been able to sustain a constructive dialogue, especially one aimed at understanding and redressing root causes of "industry differences." The reigning dysfunction can be seen in the efforts to craft a very limited reform agenda targeted at patent remedies.³⁴ These efforts are a calculated response to what is seen as the dire economic consequences of low-quality patents.

Industry sectors dependent upon patents as a source of significant market capitalization have reacted to these "damages control" proposals in the same manner as the software industry would respond to efforts to diminish or disable sanctions for copyright infringements. Thus, in attacking patent remedies instead of the root causes of patent quality, these misguided reform efforts conflict with the pharmaceutical, biotechnology, and other industry sectors whose economic survival depend upon adequate and effective remedies for patent infringement.

If patents, good and bad, give rise to inconsequential damages and little in the way of injunctive relief for their owners, then adversely held patents are hardly a threat to the economic viability of any business sector. The consequence of limiting any downside for a patent infringer is the corresponding elimination of any upside for the owner of a wholly valid patent. Without consequences for patent infringement, the patent no longer provides any incentive for the patent owner to invest in the patented invention.

More importantly, it produces a vicious cycle of degradation of the patent system. If bad patents cannot produce bad consequences for infringers, where is the incentive to eliminate such patents? Who will generate the political will to improve the operation of the USPTO and stop such patents only from issuing? If limiting remedies inevitably leads to a lesser focus on patent quality and greater numbers of questionable patents, then existent patents become less deserving of respect. For

33. See *supra* note 29.

34. The remedy reform efforts deal with the right to an injunction and damages adequate to fully compensate for the infringement of a valid patent.

the pharmaceutical, biotechnology, and other patent-dependent industries, this outcome is anathema.

Unsurprisingly, therefore, the reform agenda for the patent-dependent constituencies has been to seek reforms that will lead to a virtuous cycle of improving patent quality rather than a vicious cycle of further undermining patent quality.³⁵

The logic behind elevating patent quality to reduce “bad apples” is to create a double upside. First, all companies will face fewer questionable patents. Second, they will presumably own *fewer patents and proportionately fewer questionable patents* as improvements are made in weeding out the “bad apples” early. A high quality patent system—with a prompt and facile means of eliminating mistakenly issued patents—leaves patent-owning constituencies with more reliable and bankable patent assets. *Again, the criteria for patent success and patent failure know no industry differences.*

Casting aside the myth of inevitable and consequential industry differences should, therefore, create a dialogue over *balanced* civil justice reforms for all patent litigants and not just the defendant’s agenda of such reforms. The agenda can focus on the potential abuse of punitive damage awards and the proportionality of compensatory damage awards, rather than an agenda focused on efforts to diminish, dilute or destroy patent remedies.

V. CASTING ASIDE THE “DIVERSITY MYTH” OPENS THE WAY TO DEFINING THE COMMON AGENDA FOR PATENT REFORM THAT JUSTIFIES PRESERVATION OF A UNITARY PATENT SYSTEM

The counter-thesis of this paper is clear, at least in part, because it is just common sense: How should the U.S. patent system be remade to align with the pan-industry success factors while mitigating the pan-industry fail factors? In other words, if the myth of inherent and inevitable “industry differences” propelling movement to a non-unitary patent system can be debunked, what reforms should address the interests of all industry sectors?

This responsive agenda has already been largely developed. As mentioned above, it is found in the work of the National Research Council of the National Academies following their four-year study of the U.S. patent system.³⁶

35. Rochelle Dreyfuss, *Pathological Patenting: The PTO as Cause or Cure*, 104 MICH. L. REV. 1559, 1562, 1572–73 (2006).

36. NAT’L RESEARCH COUNCIL OF THE NAT’L ACADS., *supra* note 4.

The National Academies’ recommendations were that Congress should take up four key legislative initiatives:

- Provide the USPTO with adequate resources to assure quality examination of all patent applications.³⁷
- Limit “subjective elements” in patent litigation, *i.e.*, the “inequitable conduct” defense to enforceability, punitive damages based upon “willful infringement,” and the “best mode” requirement.³⁸
- Make harmonizing changes to the U.S. patent laws by adopting first-inventor-to-file principles and eliminating the “best mode” requirement.³⁹
- Provide an “open review” (post-grant opposition) procedure that facilitates challenging questionable patents in the USPTO, *e.g.*, create strong incentives to make use of a 9-month window after a patent is issued to request a review of the patent in which *all* questions of the validity of a patent could be contested before a panel of administrative patent judges in the USPTO, with the right of appeal to the Court of Appeals for the Federal Circuit.⁴⁰

Ancillary proposals to augment the effectiveness of these potential changes have included mandating publication of all U.S. patent applications eighteen months after their original filing date,⁴¹ permitting pre-grant submissions of prior art to patent examiners from members of the public,⁴² removing all other intent-based subjectivity from the patent statute,⁴³ and expanding the availability of so-called “prior user rights” to all categories of patents.⁴⁴

Such a reformed patent system will be characterized by the transparency, objectivity, simplicity, and certainty that is so uncharacteristic of the existing patent system. The “gold standard” for advancing patent quality could be realized for many, if not most, patents—an individual with suitable training could pick up a patent or a published patent application, reference only publicly accessible information, and make a fuller and more certain determination of patentability.

37. *Id.* at 103–108.

38. *Id.* at 117–123.

39. *Id.* at 123–127.

40. *Id.* at 95–103.

41. 35 U.S.C. § 122(b)(1)(A) (2000).

42. Patent Reform Act of 2005, H.R. 2795, 109th Cong. § 10 (2005).

43. *Id.* § 5.

44. *Id.* § 9.

Equally important, the 9-month post-grant opposition window⁴⁵ would assure that questionable patents could be promptly tested and eliminated. This provides a compelling incentive for the public to make use of the procedure given its *inherent, challenger-friendly civil justice implications*. Those who opposing a patent within the 9-month window can deny the patent applicant the choice of timing for defending the patent's validity, the forum for doing so, the opportunity for a trial by jury, the judicial deference resulting from the presumption of validity of an issued patent, and the "clear and convincing evidence" standard applied to the challenger.

Implementing the National Academies' recommendations will result in patent law principles in emerging areas of technology developing with unprecedented speed. The compelling nature of the 9-month window for encouraging early challenges to a patent's validity will mean that patent oppositions in the United States will be at least as numerous as such proceedings are in Europe. Even if the rate of oppositions to newly issued patents is in the low single digit percentage range—far lower than the mid-single digit percentage in Europe⁴⁶—the result will be thousands of oppositions each year, hundreds of APJ decisions each year, and dozens of Federal Circuit opinions on core patentability questions.

This process of rapid opposition and adjudication of core patentability issues will produce a positive feedback loop that will inform and enrich the patent examination process. Fewer and better patents should issue as patent examiners are better armed with administrative and judicial precedents defining *what can and cannot be validity patented*. This type of jurisprudence becomes particularly valuable to the emerging areas of technology that are currently unguided by any substantial body of such jurisprudence.

Maintaining a unitary patent system—with common patentability rules that are applied to all areas of technology—generates additional synergies from this effort at patent reform. Why? The synergies come from the cross-pollination effect of patent jurisprudence. As one example, decisions applying the "written description" requirement, among the most arcane of patent law, to one area of technology should inform the application of such principles to other areas of technology. The result is an accelerated development of patent law as it applies to emerging technologies. Over the past several decades "chemical" patent law has undeniably accelerated the understanding of limits on patentability for

45. *Id.*

46. Joseph Farrell & Robert P. Merges, *Incentives to Challenge and Defend Patents: Why Litigation Won't Reliably Fix Patent Office Errors and Why Administrative Patent Review Might Help*, 19 BERKELEY TECH. L.J. 943, 966 (2004).

biotechnology inventions, and the same is now needed in other areas such as “business method” and software-driven computing machine patents.

CONCLUSION

Without question, the application of patentability criteria to emerging technology areas is unacceptably slow and the prolonged uncertainty it creates bedevils these fields of technology. Comprehensive patent law reforms are needed to make the patent system more transparent, objective, simple, and predictable, and to facilitate meaningful public participation in the patenting process. Public participation in the patent system via strong incentives for the public to make use of the 9-month post-issuance window to challenge a patent’s validity will, in turn, accelerate development of a deeper understanding of patentability requirements as applied to every field of technology.

Such reform to the patent laws is root-cause focused. It entirely undercuts any notion that the patent remedies are a core problem because questionable patents cannot be promptly and efficiently eliminated. Questionable patents can and will be promptly addressed—either by patent examiners armed with better jurisprudence on what is patentable, or by the public providing the examiners with all the information relevant to a patent’s validity.

Thus, the fundamental notion of inherent and inevitable “industry differences” as a motive for patent reforms, largely geared towards disassembling a unitary patent system and disabling effective patent remedies, is exposed as merely an artifact of a patent system in need of substantial, but unitary, changes. Perhaps the next two-day conference on “industry differences” will be entitled “Patents and Unitarianism—The Patent System After The National Academies’ Reforms Have Redressed The Flawed Contentions Of Inherent and Inevitable Industry Differences.”