No. 08-964

In the Supreme Court of the United States

BERNARD L. BILSKI AND RAND A. WARSAW,

Petitioners,

v.

JOHN J. DOLL, ACTING UNDER SECRETARY OF COMMERCE FOR INTELLECTUAL PROPERTY AND ACTING DIRECTOR OF THE UNITED STATES PATENT AND TRADEMARK OFFICE,

Respondent.

On Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

BRIEF FOR THE BUSINESS SOFTWARE ALLIANCE AS *AMICUS CURIAE* IN SUPPORT OF AFFIRMANCE

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BRIEF FOR THE BUSINESS SOFTWARE ALLIANCE AS *AMICUS CURIAE* IN SUPPORT OF NEITHER PARTY

INTEREST OF *AMICUS CURIAE*

The Business Software Alliance (BSA) is an association of the world's leading software and hardware technology companies. On behalf of its members, BSA promotes policies that foster innovation, growth, and a competitive marketplace for commercial software and related technologies. BSA members pursue patent protection for their intellectual property and as a group hold a significant number of patents. Because patent policy is vitally important to promoting the innovation that has kept the United States at the forefront of software and hardware development, BSA members have a strong stake in the proper functioning of the U.S. patent system.

The members of the BSA are Adobe, Apple, Autodesk, Bentley Systems, CA, Cadence Design Systems, Cisco Systems, Corel, CyberLink, Dell, Embarcadero Technologies, HP, IBM, Intel, Intuit, McAfee, Microsoft, Minitab, Quark, Quest Software, Rosetta Stone, SAP, Siemens, SolidWorks, Sybase, Symantec, Synopsys, and The MathWorks.[1]

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[1] Pursuant to this Court's Rule 37.6, *amicus* affirms that no counsel for a party authored this brief in whole or in part and that no person other than *amicus* and its counsel made a monetary contribution to its preparation or submission. The parties' letters consenting to the filing of this brief have been filed with the Clerk's office.

INTRODUCTION AND SUMMARY OF ARGUMENT

If innovation is the engine of the American economy, then intellectual property is its fuel. From the time of the Founding, it has been understood that, to "promote the progress of * * * useful arts," U.S. CONST. art. I, § 8, cl. 8, economic incentives must be provided to those who develop new inventions.

At one point in the Nation's history, those inventions involved methods for forging iron or harnessing the illuminating capacity of tungsten. Innovation takes more varied forms today. Computers, for example, are an ever-present feature of modern life and modern industry, and they perform a myriad of useful functions through the interaction between hardware and software. Much innovation today arises from the expanded use and sophistication of computers and the software that directs their operations. The Patent Act is not so limited that it impedes the progress of these new technologies. To the contrary, the patent system was developed to foster such innovation.

The importance of technological innovation to the growth of the American economy and the continued success of American industry cannot be overstated. Undue narrowing of the scope of patent protection would produce a concomitant reduction in innovation, with adverse effects on the entire economy. At the same time, an interpretation of patentable subject matter that extends to laws of nature and abstract ideas could deter innovation by blocking development of new technologies.

In interpreting the scope of 35 U.S.C. § 101, this Court should be mindful of its long tradition of vindi-

cating the purposes of the Patent Act. Throughout its history, this Court has been careful to protect avenues for innovation while limiting efforts to claim entire fields of scientific discovery. Those dual guideposts stem directly from Section 101, which authorizes patents for "any new and useful process, machine, manufacture, or composition of matter." This language is broad but not infinite. Likewise, its role is important but not exclusive. The fundamental purpose of Section 101 is to establish the scope of the "useful arts," U.S. CONST. art. I, § 8, cl. 8, not to filter out every unjustified patent claim. An invention that qualifies as patentable subject matter may receive a patent only if in addition it satisfies the requirements of novelty, nonobviousness, and enablement. 35 U.S.C. §§ 102, 103, 112.

Courts have consistently, and correctly, concluded that—except in narrow circumstances—software-implemented inventions satisfy Section 101. That conclusion is legally correct and economically essential, and it should be reaffirmed by this Court. The decision below does not disturb the Federal Circuit's understanding that Section 101 extends to inventions implemented by computer software. However, in adopting its machine-or-transformation test, the Federal Circuit unduly narrowed the scope of patent protection for future technological advances and failed in its effort to bring clarity to Section 101. This Court has never endorsed the machine-or-transformation test as an indispensable criterion for satisfying Section 101. Instead, the proper focus is whether a patent claim would control all applications of a law of nature, a natural phenomenon, or an abstract idea—the fundamental building blocks of innovation that no person has invented and no person should control.

Petitioners' claim fails that test, because they seek a patent that would preempt the entire concept of hedging. Accordingly, the judgment of the Federal Circuit should be affirmed. In reaching the correct result, however, the Federal Circuit employed the wrong standard, introducing inappropriate and unnecessary obstacles that could impede future technological development in new fields of innovation.

The judgment below should therefore be upheld only after this Court removes the Federal Circuit's ill-advised limitations on Section 101. In so doing, the Court should reaffirm that the patent system remains open to critical areas of developing technology such as inventions implemented by computer software.

ARGUMENT

I. SECTION 101 HAS CONSISTENTLY—AND CORRECTLY—BEEN INTERPRETED TO ENCOMPASS SOFTWARE-IMPLEMENTED INVENTIONS.

Software-implemented inventions have had, and continue to have, a profound impact on the American economy. And patent protection is a critical component of the information economy's success. Indeed, both the legal and the economic systems have accepted and relied upon the patentability of machines and processes implemented through software. In assessing the scope of Section 101, therefore, this Court should be mindful of settled expectations and avoid interpreting Section 101 in a manner that would defeat those expectations and undermine a major area of innovation.

A. Patents For Software-Implemented Inventions Provide Important Benefits To The Economy And Society At Large.

Much like the other "useful arts," innovations in software technology bring important advances to the American economy. Computer software is now used not just for word processing and calculating spreadsheets but also for designing bridges, diagnosing diseases, and directing our energy infrastructure. Most of the technologies that we encounter every day—from cellular phones and antilock brakes to airplane flight controls and pacemakers—require computers and software and incorporate technological advancements. The automation of previously manual tasks through computer software has improved quality, consistency, efficiency, and access to a wide variety of products and services, such that the vast majority of patents on software-implemented inventions go to companies in the manufacturing sector. In short, "[t]oday's software transforms our lives without physical anchors." Pet. App. 143a (Rader, J., dissenting).

Investment in software reflects its increasing importance to American industry. In 2000, software represented nearly 15% of non-residential fixed capital investment in the entire economy, up from only 3% in 1980. Organisation for Economic Co-Operation and Development, *Measuring the Information Economy* 11 (2002), http://www.oecd.org/data-oecd/16/14/1835738.pdf. On a broader level, the information technology industry has been described as "the key factor responsible for reversing the 20-year productivity slow-down from the mid-1970s to the mid-1990s and in driving today's robust productivity growth." Pet. App. 94a (Newman, J., dissenting)

(quoting Robert D. Atkinson & Andrew S. McKay, *Digital Prosperity: Understanding the Economic Benefits of the Information Technology Revolution* 10 (Info. Tech. & Innovation Found. 2007), http://www.itif.org/files/digital_prosperity.pdf).

Industry estimates suggest that 20,000 new patent applications for software-implemented inventions are granted each year, James E. Bessen & Robert M. Hunt, *An Empirical Look at Software Patents*, 16 J. ECON. & MGMT. STRATEGY 157, 158 (2007). "[B]oth economic theory and practical experience suggest that the availability of patents for software promotes innovation by supplying (additional) incentives to inventors." Julie E. Cohen & Mark A. Lemley, *Patent Scope and Innovation in the Software Industry*, 89 CAL. L. REV. 1, 5 (2001).

BSA member companies exemplify the principle that patent protection creates an environment conducive to the pursuit of innovation—each year, they spend in excess of $32 billion on research and development to expand their innovation portfolios. See BSA, *Patent Reform: The Verdict Is In* 4 (2007), http://www.bsa.org/~/media/63E3364BBA7148828D2CE880AF5371D2.ashx. For example, these companies are pursuing breakthroughs that will provide doctors with access to "previously unimaginable amounts of clinical data" through advances in cloud computing, help water supply networks to identify the leaks in their infrastructure that result in the loss of 26% of treated water, and allow printers to generate three-dimensional objects. BSA, *Innovation Nation*, SOLUTIONS MAGAZINE, June 2009, at 3, 4, 7, http://www.bsa.org/country/Public%20Policy/~/media/Files/Policy/Solutions/Solutions_Magazine_1.ashx.

None of these pursuits would be possible without software.

As early as 1992, congressional reports recognized that "patent protection is of importance to the U.S. software industry, both domestically and in the global market." U.S. Congress, Office of Technology Assessment, *Finding a Balance: Computer Software, Intellectual Property and the Challenge of Technological Change* 23 (1992). Without intellectual property protection, prospective software entrepreneurs face serious risks that competitors will free-ride on their innovations by pilfering the essential elements of a software program. See, *e.g.*, Bradford L. Smith & Susan O. Mann, *Innovation and Intellectual Property in the Software Industry: An Emerging Role for Patents?*, 71 U. CHI. L. REV. 241, 241–242 (2004). This free-riding comes at the expense of the inventor's return on his investment. Conversely, with proper protection, potential innovators are motivated to pursue new inventions and to proceed to commercial development to collect their economic rewards. *Id.* at 256–257; see also Erik S. Maurer, Note, *An Economic Justification for a Broad Interpretation of Patentable Subject Matter*, 95 NW. U. L. REV. 1057, 1087–1088 (2001).[2]

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[2] Software entrepreneurs are also harmed when identical copies of finished programs are duplicated in what, under the current intellectual property regime, constitutes illegal piracy. Piracy is sometimes combated through the Copyright Act, which protects "the author's original expression of an idea." Smith & Mann, *supra*, at 256. However, copyright law does not prevent a competitor from extracting the innovative elements of software and incorporating them into a new creative shell. Patent protection is necessary for an inventor to "protect the actual invention, not just a single implementation of it." *Ibid.*

Simple economics suggests that, if patent protection for software were curtailed, the adverse consequences would be swift and severe. With less profit to capture from the commercialization of the fruits of research and development, businesses would divert their resources into other ventures, and software development would suffer. That would have a ripple effect on economic productivity. Advanced software allows factory workers to be more precise, cars more fuel efficient, and healthcare more effective. Any new obstacles to software development would carry a penalizing multiplier effect that could threaten the continued technological advantage of the United States.

B. This Court Should Not Interpret Section 101 In A Manner That Upsets Settled Expectations And Has Harmful Economic Consequences.

Because so much has already been invested in computer software, both in resources and in manpower, this Court should be careful not to upset this settled industry of innovators by narrowing Section 101. See, *e.g.*, Cohen & Lemley, *supra*, at 4 ("With some eighty thousand software patents already issued * * * software patentability is a matter for the history books."). This necessity is driven both by the legal imperative of statutory *stare decisis* and by the extra force this doctrine carries in light of the particularly severe costs of upsetting patent expectations.

Stare decisis "promotes the evenhanded, predictable, and consistent development of legal principles, fosters reliance on judicial decisions, and contributes to the actual and perceived integrity of the judicial process." *Payne* v. *Tennessee*, 501 U.S. 808, 827

(1991). Departure from settled precedent always requires "special justification," *Arizona* v. *Rumsey*, 467 U.S. 203, 212 (1984), and "[c]onsiderations in favor of *stare decisis* are at their acme in cases involving property and contract rights, where reliance interests are involved," *Pearson* v. *Callahan*, 129 S. Ct. 808, 816 (2009) (quoting *Payne*, 501 U.S. at 828). Among property rights, intellectual property invites particularly strong reliance. Moreover, "[c]onsiderations of *stare decisis* have special force in the area of statutory interpretation, for here, unlike in the context of constitutional interpretation, the legislative power is implicated, and Congress remains free to alter what [the courts] have done." *Shepard* v. *United States*, 544 U.S. 13, 23 (2005) (quoting *Patterson* v. *McLean Credit Union*, 491 U.S. 164, 172–173 (1989)).

Thus, where decisions interpreting a statute concern a right in intellectual property, *stare decisis* concerns apply with the greatest possible force. This Court has spoken on several occasions about the scope of Section 101. A dramatic change in patent law might invalidate certain patents notwithstanding the fact that—had the law imposed different requirements—claims would have been prosecuted differently, or unappealed rejections might have been pursued. For that reason, this Court has emphasized that "[f]undamental alterations in these rules risk destroying the legitimate expectations of inventors in their property" and that "courts must be cautious before adopting changes that disrupt the settled expectations of the inventing community." *Festo Corp.* v. *Shoketsu Kinzoku Kogyo Kabushiki Co.*, 535 U.S. 722, 739 (2002); see also *Warner-Jenkinson Co.* v. *Hilton Davis Chem. Co.*, 520 U.S. 17, 32 (1997) ("[W]e should be extremely reluctant to upset the ba-

sic assumptions of the PTO without substantial reason for doing so.”).

II. THE FEDERAL CIRCUIT’S UNDULY NARROW TEST FOR PATENTABLE SUBJECT MATTER IS INCONSISTENT WITH THIS COURT’S PRECEDENTS.

The Federal Circuit correctly recognized that “[t]he true issue” in this case is “whether [Bilski is] seeking to claim a fundamental principle (such as an abstract idea) or a mental process.” Pet. App. 8a. Application of this Court’s decisions barring patents that claim “laws of nature, natural phenomena, [or] abstract ideas,” *Diamond* v. *Diehr*, 450 U.S. 175, 185 (1981), compels rejection of petitioners’ claim.

Rather than resting its holding on that ground, however, the court of appeals engaged in an extended discussion of other potential limits on patentability grounded in Section 101. It concluded that this Court’s precedents *required* it to adopt the narrow machine-or-transformation test—even though the court of appeals itself recognized that the test may be inadequate to ensure that patent protection is available for new and emerging technologies. Pet. App. 17a. This is contrary to the basic purpose of the Patent Act, which is to promote innovation.

By elevating the machine-or-transformation test from a *sufficient* criterion for satisfying Section 101 into a *necessary* one, the Federal Circuit has unduly narrowed the scope of patentability and threatened future innovation. This Court has enunciated no such “definitive test” and the Federal Circuit’s adoption of the machine-or-transformation test as the *exclusive* basis for satisfying Section 101 is not supported by this Court’s precedents. To the contrary,

this Court has emphasized the breadth of Section 101 and refused to recognize artificial limits on what constitutes a "process," mindful that technologies evolve and that the patent system was designed to be flexible and to accommodate new paths for innovation.

This Court should reject the court of appeals' narrow conception of patentable "process[es]" and reaffirm its prior decisions emphasizing Section 101's role in preventing preemption of "laws of nature, natural phenomena, and abstract ideas." *Diehr*, 450 U.S. at 185. Applying that standard, this Court should nonetheless affirm the Federal Circuit's result, because the disputed patent claim is an attempt to patent a disembodied abstract idea.

A. This Court's Holdings That Patents May Not Encompass "Laws Of Nature, Natural Phenomena, And Abstract Ideas" Dispose Of Petitioners' Claim.

1. Section 101 defines patentability broadly but precludes patents for scientific principles.

The scope of patentable subject matter is broad, but it is far from unlimited. Section 101 permits the protection of "any new and useful process, machine, manufacture, or composition of matter." However, as this Court has long recognized, "[a]n idea of itself is not patentable." *Rubber-Tip Pencil Co.* v. *Howard*, 87 U.S. (20 Wall.) 498, 507 (1874). For that reason, "[p]henomena of nature, though just discovered, mental processes, and abstract intellectual concepts are not patentable." *Gottschalk* v. *Benson*, 409 U.S. 63, 67 (1972); accord *Parker* v. *Flook*, 437 U.S. 584, 589 (1978). Patent law does not extend to "the dis-

covery of some of the handiwork of nature," *Funk Bros. Seed Co.* v. *Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948), because laws of nature are "the basic tools of scientific and technological work," *Benson*, 409 U.S. at 67. Thus, no patent could claim Albert Einstein's equation for mass-energy equivalence, $E = mc^2$. *Diamond* v. *Chakrabarty*, 447 U.S. 303, 309 (1980).

The principle that ideas are not patentable, however, does not extend to "the application of [a] law of nature to a new and useful end." *Funk Bros.*, 333 U.S. at 130; see also *Mackay Radio & Tel. Co.* v. *Radio Corp. of Am.*, 306 U.S. 86, 94 (1939) ("While a scientific truth, or the mathematical expression of it, is not a patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be."). In drawing this critical distinction between abstract ideas and their applications, this Court has looked to whether "the patent would wholly pre-empt" the underlying idea, such that it "in practical effect would be a patent on the [idea] itself." *Benson*, 409 U.S. at 72; accord *Diehr*, 450 U.S. at 187. Thus, the critical question is whether other inventors may make use of the fundamental principle in their own specific applications thereof—or, instead, whether the patent claims all such uses.

The non-preemption standard has long formed the foundation of this Court's Section 101 jurisprudence.[3] In *Tilghman* v. *Proctor*, 102 U.S. 707 (1881), the Court examined a patent claiming a novel

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[3] A similar non-preemption principle applies to copyrights. Whereas an "idea" itself is not copyrightable, the particular expression of an idea is. *Harper & Row Publishers, Inc.* v. *Nation Enters.*, 471 U.S. 539, 556–557 (1985); see 17 U.S.C. § 102(b).

method for decomposing fats that applied the chemical principle that "the elements of neutral fat [are] require[d] to be severally united with an atomic equivalent of water in order to separate from each other and become free." *Id.* at 729. Tilghman's method involved heating a mixture of fat and water in a vessel strong enough to resist the escape of steam. This Court determined that this process constituted patentable subject matter for two reasons: Tilghman did not claim the chemical principle itself; and the principle was not preempted, because his claim did not cover the other known methods for employing the chemical fact—lime-saponification, sulphuric-acid distillation, and steam distillation. *Ibid.*

Conversely, in *O'Reilly* v. *Morse*, 56 U.S. (15 How.) 62 (1854), the Court examined Samuel Morse's eight claims relating to his electromagnetic telegraph and concluded that the eighth claim was unpatentable. Morse explained that he sought to protect not merely the specific application of direct current that he employed in his telegraph, but any use of electromagnetism for distance transmission "however developed." *Id.* at 86. The Court rejected the eighth claim because Morse had not—and could not have—invented every possible implementation of electromagnetism. *Id.* at 112–113. As the Federal Circuit's predecessor court has explained, "claim 8 was held improper because by disclaiming all apparatus limitations, Morse was attempting to define the limit of his invention in terms of the natural phenomenon of electromagnetism and would, therefore, preempt the use of this phenomenon." *In re Bergy*, 596 F.2d 952, 990 (C.C.P.A. 1979), aff'd sub nom. *Diamond* v. *Chakrabarty*, 447 U.S. 303 (1980).

Recently, in dissenting from the dismissal of certiorari in *Laboratory Corp. of America Holdings* v. *Metabolite Laboratories, Inc.*, 548 U.S. 124 (2006), Justice Breyer (joined by Justices Stevens and Souter) recognized that patents are unavailable for laws of nature, natural phenomena, and abstract ideas. *Id.* at 126–128. In expressing his view of the merits of that case, Justice Breyer applied the non-preemption test to determine that a process for detecting vitamin deficiencies by measuring the level of a correlated amino acid fell outside Section 101. See *id.* at 137–138 ("[O]ne can reduce *any* process to a series of steps. The question is what those steps embody. And here, aside from the unpatented test, they embody only the correlation," which is "an unpatentable 'natural phenomenon.'").

2. Preemption analysis can be used successfully to screen out non-patentable subject matter.

Properly applied, the non-preemption standard is an important means for determining whether an inventor claims an abstract idea or an implementation thereof—and therefore whether the subject matter is patentable under Section 101. The Federal Circuit and its predecessor court have employed this standard frequently to disqualify patent claims whose preemptive effect would be equivalent to patenting a natural law.

In *In re Warmerdam*, 33 F.3d 1354 (Fed. Cir. 1994), for example, the court reviewed an application for a method to control the motion of objects to avoid collision with other (fixed or moving) objects. It assessed the interaction between Warmerdam's claim 1 and the Hilditch Skeletonization method for creating a bubble hierarchy on an object's medial axis. See *id.*

at 1359–1360. After concluding that "the only practical[] embodiment of the claimed method" was a replication of the Hilditch Skeletonization method itself, the court correctly determined that Warmerdam's claim 1 "describe[d] nothing more than the manipulation of basic mathematical constructs, the paradigmatic 'abstract idea.'" *Id.* at 1360.

Similarly, in *In re Schrader*, 22 F.3d 290 (Fed. Cir. 1994), the court rejected a claim for a supposedly novel method for conducting auctions, because the patent claimed "two obvious and familiar modes of human behavior: that potential buyers naturally may submit bids on one, some, or all of the items available for sale, and that sellers may naturally choose that combination of bids that maximize their profits." *Id.* at 293 n.8. Exclusive control over modes of human behavior could not be awarded to an enterprising patent applicant.[4]

Consistent with this Court's guidance in *Benson*, the exclusion from Section 101's scope of claims that would preempt a law of nature, natural phenomenon, or abstract idea imposes substantial and important

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[4] The court has reached the same conclusion with respect to other claims. See *In re Grams*, 888 F.2d 835, 840 (Fed. Cir. 1989) (affirming denial of a patent for a method of testing a complex system, because the only difference between the process and the underlying scientific principle was the gathering of data); *In re Meyer*, 688 F.2d 789, 796 (C.C.P.A. 1982) (affirming denial of a patent for a process to identify locations of malfunction in a complex system, because the process was merely a mathematical algorithm to be employed through mental steps); *In re Maucorps*, 609 F.2d 481, 486 (C.C.P.A. 1979) (affirming denial of a patent for a model sales organization, because the "claimed invention as a whole comprises each and every means for carrying out a solution technique for a set of equations wherein one number is computed from a set of numbers").

limits on the scope of patentability, guaranteeing that the elemental tools of innovation will not be denied public use.

3. The Bilski patent fails preemption analysis.

Petitioners' application was correctly denied as an attempt to patent an abstract principle.

Claim 1 is directed toward:

> A method for managing the consumption risk costs of a commodity sold by a commodity provider at a fixed price comprising the steps of:
>
> (a) initiating a series of transactions between said commodity provider and consumers of said commodity wherein said consumers purchase said commodity at a fixed rate based upon historical averages, said fixed rate corresponding to a risk position of said consumers;
>
> (b) identifying market participants for said commodity having a counter-risk position to said consumers, and
>
> (c) initiating a series of transactions between said commodity provider and said market participants at a second fixed rate such that said series of market participant transactions balances the risk position of said series of consumer transactions.

JA 19–20.

Although Bilski developed this method with energy hedging in mind, Claim 1 does not require a link to energy hedging and Bilski specifically dis-

claims any limitation on the embodiment of the invention. See JA 19 ("[I]t is distinctly understood that the invention is not limited [to the preferred embodiments] * * *."). Claim 1 does not specify a particular method for determining how to "identify[]" persons or entities with a counter-risk position or how to "balance[]" the risk position of the consumer transaction; it seeks to cover any possible method with these characteristics. See *In re Morris*, 127 F.3d 1048, 1055 (Fed. Cir. 1997).

Claim 1 therefore does not satisfy Section 101, because it is a general claim on the concept of hedging and thus an attempt to patent an abstract idea. Its vague steps preempt "every possible way of performing the steps of the plan, by human or by any kind of machine or by any combination thereof." Pet. App. 184a. As a result, "the claim is so broad that it is directed to the 'abstract idea' itself, rather than a practical implementation of the concept." *Ibid.*

Claim 1 suffers from a defect similar to that of Morse's eighth claim—by trying to cover all possible uses of an idea (including those the claimant has not invented), the claim degenerates into a disembodied concept without a particular application. The distinction between Bilski's claim and a related claim that might satisfy the non-preemption criterion parallels the distinction between Morse's failed eighth claim on telegraphy and Alexander Graham Bell's successful patent for telephony. As this Court explained in *Benson*, whereas Morse claimed an entire field of science (electromagnetism), Bell claimed only a particular method and not "all telephonic use of electricity." 409 U.S. at 68–69; compare *Morse*, 56 U.S. (15 How.) at 111–113, with *The Telephone Cases*, 126 U.S. 1, 534–538 (1888). As far as Section

101 is concerned, Claim 1 here is indistinguishable from Morse's eighth claim.

B. This Court Has Rejected Artificial Limits On What Constitutes A "Process."

This Court has had several opportunities to address the meaning of Section 101. On each occasion, the Court has been mindful that technologies evolve and that the patent system was designed to be flexible and to accommodate new paths for innovation. Nonetheless, in affirming the rejection of the patent application here, the Federal Circuit asserted that this Court

> has enunciated a definitive test to determine whether a process claim is tailored narrowly enough to encompass only a particular application of a fundamental principle rather than to pre-empt the principle itself. A claimed process is surely patent-eligible under § 101 if: (1) it is tied to a particular machine or apparatus, or (2) it transforms a particular article into a different state or thing.

Pet. App. 12a. This Court has never required such a "definitive" test, and with good reason: such a test would undermine the objectives of the patent system.

1. This Court has never required a "process" to be tied to an apparatus or to be transformative to be patentable.

The machine-or-transformation formulation originated in *Cochrane* v. *Deener*, 94 U.S. 780 (1877), where this Court stated that Section 101's reference to "process" includes methods (a) that are tied to an apparatus or (b) that, when "performed upon the subject-matter," result in its being "transformed and reduced to a different state or thing." *Id.* at 788.

Cochrane considered whether an improved process for manufacturing flour constituted patentable subject matter. The applicant did not invent the machinery used in the individual steps of his process, *id.* at 785–786, but instead invented a series of steps that, when considered as a whole, "produced a revolution in the manufacture of flour," *id.* at 787. The Court provided the two examples of a patentable "process" only after emphasizing that "it cannot be disputed" that the patentability of a process does not depend on "the particular form of the instrumentalities used." *Id.* at 787–788.

Consistent with that observation, this Court has never held that *Cochrane*'s two examples—machine-based and transformative methods—were intended to be exhaustive. Nonetheless, the Federal Circuit held that the machine-or-transformation standard is "the sole test governing § 101 analyses," Pet. App. 15a, relying upon this Court's decisions in *Benson*, *Flook*, and *Diehr*, *id.* at 12a–15a. None of those cases supports the Federal Circuit's conclusion.

To the contrary, in both *Benson* and *Flook*, the Court was careful to point out that the *Cochrane* categories were not intended to be exhaustive. See *Benson*, 409 U.S. at 71 ("[w]e do not hold that no process patent could ever qualify" if it was not "tied to a particular machine or apparatus" and did not "operate to change articles or materials to a 'different state or thing'"); *Flook*, 437 U.S. at 588 n.9 ("we assume that a valid process patent may issue even if it does not meet one of these qualifications"). *Diehr* concluded that the machine-or-transformation standard was satisfied, quoting *Benson*; there was thus no occasion to discuss the breadth of the definition of "process" in Section 101. Nothing in *Diehr* suggests

that the Court was abandoning what it made clear in *Benson* and *Flook*.

2. The statutory term "process" should be interpreted broadly.

In contrast to the Federal Circuit, which *narrowed* Section 101, this Court has emphasized that "the language of § 101 is extremely broad" and that "Congress plainly contemplated that [it] would be given wide scope." *J.E.M. Ag Supply, Inc.* v. *Pioneer Hi-Bred Int'l, Inc.*, 534 U.S. 124, 130 (2001) (quoting *Chakrabarty*, 447 U.S. at 308). Beyond the historical limitations just discussed (the exclusion of laws of nature, natural phenomena, and abstract ideas), this Court has "more than once cautioned" that courts "should not read into the patent laws limitations and conditions which the legislature has not expressed." *Diehr*, 450 U.S. at 182 (quoting *Chakrabarty*, 447 U.S. at 308, in turn quoting *United States* v. *Dubilier Condenser Corp.*, 289 U.S. 178, 199 (1933)). Applying that principle, the Court has held that "anything under the sun that is made by man" presumptively constitutes patentable subject matter under Section 101. *Diehr*, 450 U.S. at 182 (quoting S. REP. NO. 82-1979, at 5 (1952), and H.R. REP. NO. 82-1923, at 6 (1952)); accord *Bonito Boats, Inc.* v. *Thunder Craft Boats, Inc.*, 489 U.S. 141, 154 (1989); *Chakrabarty*, 447 U.S. at 308.

In interpreting "process," the Court has applied the general principle that an undefined statutory term should be given its "ordinary, contemporary, common meaning." *Diehr*, 450 U.S. at 182. The ordinary meaning of "process" is broad: "an artificial or voluntary progressively continuing operation that consists of a series of controlled actions or movements systematically directed toward a particular

result or end." WEBSTER'S NEW INTERNATIONAL DICTIONARY 1808 (3d ed. 1986); see also WEBSTER'S NEW INTERNATIONAL DICTIONARY 1972 (2d ed. 1950) ("A series of actions, motions, or operations definitely conducing to an end, whether voluntary or involuntary."). Giving the term its broad, ordinary meaning leaves the door open to the granting of patents with respect to new technologies. A construction that is not technology-neutral would threaten to arbitrarily short-circuit entire fields of development.

When Congress wishes to exclude a particular subject matter from the patent laws, it knows how to do so. For example, Congress has instructed the PTO to issue no patents for inventions "useful solely in the utilization of special nuclear material or atomic energy in an atomic weapon." 42 U.S.C. § 2181(a); cf. 17 U.S.C. § 102(b) (exclusions from copyrightable subject matter). But Congress has made no similar exception for certain types of processes, and the courts are not free to introduce a new exception in its stead.

Reinterpreting Section 101 to impose restrictions on the scope of patentable processes not found in the statutory text also would be inconsistent with this Court's decision in *KSR International Co.* v. *Teleflex Inc.*, 550 U.S. 398 (2007). There, in assessing the evaluation of nonobviousness under Section 103, the Court rejected replacement of the "expansive and flexible approach" mandated by the statute with a "rigid approach" that added criteria not found in the text. *Id.* at 415. So too here, the Federal Circuit erred by inserting into Section 101 restrictions not found in the statutory text.

Finally, this Court has made clear that "process" claims must be "considered as a whole." *Diehr*, 450

U.S. at 188. Thus, "a new combination of steps in a process may be patentable even though all the constituents of the combination were well known and in common use before the combination was made." *Ibid.* By refusing to compartmentalize process claims, the Court has provided further confirmation that Section 101 should not be construed to embody restrictive standards not reflected in the statutory text and that the "process" standard should be applied in light of all the facts and circumstances in a particular case.

C. The Federal Circuit's Narrow Standard Creates Needless Uncertainty About Patentable Subject Matter.

The Federal Circuit's machine-or-transformation standard for patentable subject matter is not only inconsistent with this Court's precedents; it will also lead to needless confusion about what constitutes patentable subject matter as technology evolves. The Federal Circuit in effect acknowledged as much, when it said that "future developments in technology or the sciences may present difficult challenges to the machine-or-transformation test," such that "the Supreme Court may ultimately decide to alter or perhaps even set aside this test to accommodate emerging technologies." Pet. App. 17a.

It is unwise in any circumstance to adopt a test that is acknowledged to be under-inclusive. These concerns are even greater in the context of the patent system, which is designed to be forward-looking and to promote the development of new fields of innovation. As Judge Rader aptly put it, the Federal Circuit's test "links patent eligibility to the age of iron

and steel at a time of subatomic particles and terabytes." Pet. App. 134a (dissenting opinion).[5]

In the modern age, the Federal Circuit's test apparently contemplates that innovators will pursue new avenues even if they may not satisfy the machine-or-transformation test, somehow expecting that their cause will lead the Federal Circuit or this Court to craft a new standard. That is not a reasonable expectation. "Uncertainty is the enemy of innovation," Pet. App. 61a (Newman, J., dissenting), and an under-inclusive test will have an obvious chilling effect. To avoid this counterproductive outcome—which is compelled neither by the text of Section 101 nor by this Court's precedent—the standard for Section 101 must be sufficiently flexible to account for new fields of innovation.

Software provides a case study for the predicament that arises from the Federal Circuit's test. From a technical perspective, "software" is typically a series of commands that reside on a storage medium and are performed on a general purpose computer to accomplish a desired task. The physical counterpart of software is "hardware." Virtually any task that is performed by programming a general purpose computer with software could also be achieved by hard-coding those same instructions into a hardware device. To advance innovation, it would

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[5] Even during the age of iron, the machine-or-transformation test was understood to present a sufficient—but not necessary—criterion for patentable subject matter. The *Cochrane* formulation was designed "not to limit process patentability but to point out that a process is not limited to the means used in performing it." *In re Prater*, 415 F.2d 1378, 1387–1388 (C.C.P.A. 1968), aff'd in part and rev'd in part on reh'g, 415 F.2d 1393 (C.C.P.A. 1969).

make little sense to differentiate between tasks performed by hardware and those performed by software. Recognizing this, the Federal Circuit has held that "[computer] programming creates a new machine, because a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions pursuant to instructions from program software." *In re Alappat*, 33 F.3d 1526, 1545 (Fed. Cir. 1994) (en banc).

Accordingly, even under the court of appeals' restrictive machine-or-transformation test, software-implemented inventions are patentable subject matter—so long as they do not preempt a law of nature, a natural phenomenon, or an abstract idea. Notwithstanding this framework, the *Bilski* decision has resulted in an increased level of uncertainty within the Board of Patent Appeals and Interferences. Some panels have concluded that *Bilski* requires the rejection of methods that "could be implemented on a software system." *Ex parte Motoyama*, 2009 WL 524946, at *5 (B.P.A.I. Feb. 27, 2009); *Ex parte Scholl*, 2009 WL 288204, at *7 (B.P.A.I. Feb. 4, 2009). Another panel has concluded that software, to be patentable, requires a "structural tie to an article of manufacture, machine, process or composition of matter." *Ex parte Petculescu*, 2009 WL 1718896, at *8 (B.P.A.I. June 4, 2009). Although these decisions fail to comport with established precedent, see, *e.g.*, *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 under these categories, at least as processes."), they underscore the need for this Court to develop an appropriately flexible standard for Section 101 compliance and to reaffirm that software-implemented inventions are eligible for patent pro-

tection. They also underscore the need for clarity in this Court's opinion.

Although the Federal Circuit sought to provide clarity through the opinion below, the early response from the Patent Office suggests that, not only was the decision based on faulty reasoning, but confusion reigns. Accordingly, even if the Court decides to affirm the Federal Circuit's adoption of the machine-or-transformation test, it is critical that the Court make clear that software-implemented inventions are protected by that framework.

Further difficulty arises in contemplating *future* developments in software and other fields. Just as there is neither a statutory basis nor a practical reason to award patents to hard-wired appliances but not to software-programmed general computers that perform the same process, there is no reason to distinguish between software that runs on personal computers and software that operates on the Internet. But at least one district court has concluded that *Bilski* mandates such a distinction. See *CyberSource Corp.* v. *Retail Decisions, Inc.*, 620 F. Supp. 2d 1068 (N.D. Cal. 2009).

Dissenters on the Federal Circuit recognized the limitations of the majority's standard. Already, inventions that employ "today's electronic and photonic technology" may be excluded by the machine-or-transformation limitation, even though they "contribute to the vigor and variety of today's Information Age" in the manner that the Patent Act is designed to promote. Pet. App. 60a (Newman, J., dissenting). As new fields of innovation develop, those limitations will become even more pronounced and even more damaging to innovation.

D. The Proper Standard Should Acknowledge The Role Of Section 101 Patentability As A Threshold Determination.

This Court's precedent establishes that mere ideas are not patentable but that methods satisfying *Cochrane* are. The remaining question is how to assess the Section 101 eligibility of methods that neither claim an abstract idea, as determined by the non-preemption test, nor are encompassed by the *Cochrane* categories. For this task, the ordinary tools of statutory construction are all that is required. The appropriate standard should reflect the text of the patent laws and carry out their underlying policy: that inventors should be rewarded for contributions to knowledge but not for those basic scientific principles over which no person should be allowed exclusive rights.

Toward this end, Section 101 acts as an important—if only partial—restraint. Section 101 precludes patent protection for abstract principles or natural laws—or their equivalents—that claim too much and would impede technological advancement if they could be controlled by one person. But Section 101 is not the sole filter. Read in context, its purpose must be to set a threshold requirement for patentability that, while meaningful, does not bear the full burden of ensuring that only meritorious inventions receive the benefits of a patent. That burden is shared by Sections 102, 103, and 112, which impose additional requirements of novelty, nonobviousness, and enablement.

The threshold set by Section 101 must not be rigid, lest it fail to recognize the dynamic nature of scientific progress and inventorship. As this Court

has previously mentioned, the Patent Act was designed to reach "anything under the sun that is made by man." *Chakrabarty*, 447 U.S. at 308. In this spirit, the Court should adopt a standard that prevents patents on the building blocks of innovation—principally through the non-preemption doctrine—while staying true to the broad ordinary meaning of "process." This can be achieved by continuing to employ the preemption analysis. The cost of an under-inclusive test is serious, because inventions not pursued cannot be quantified. The cost of an over-inclusive approach is decidedly less pronounced, because borderline claims still will be required to satisfy the other stringent criteria for patentability. Consistent with this Court's teachings, therefore, the standard under Section 101 should err on the side of finding processes to be patentable subject matter.

CONCLUSION

The judgment of the court of appeals should be affirmed.

Respectfully submitted.

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