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March 2008 Meeting Announcement:

Almost Anything Under The Sun Made By Man?

In 2006 the Supreme Court granted, then withdrew, *certiorari* in *Laboratory Corporation of America v. Metabolite Laboratories*, in which the Court would have resolved an issue of patentable subject matter. The Federal Circuit appears to have gotten the Supreme Court's hint that work is needed in this area, judging from two appeals from the PTO in 2007 in which the Federal Circuit took a narrow view of what constitutes patentable subject matter. On February 15, 2008 the Federal Circuit *sua sponte* granted an *en banc* hearing in a third appeal from the PTO, *In re Bilski*, to consider five questions regarding patentable subject matter in the context of a claimed method for managing risk. The March program will feature a mock *en banc* argument in *In re Bilski*.

Panelists:	Teresa Corbin	<i>Howrey</i>
	Anne Marie Dinius	<i>DLA Piper</i>
	Jeffrey M. Fisher	<i>Farella Braun & Martel</i>
	Annette L. Hurst	<i>Heller Ehrman</i>
	Ted Joe	<i>Dergosits & Noah</i>
	Robert B. Morrill	<i>Sidley Austin</i>
	Huong T. Nguyen	<i>Impax Laboratories</i>
	Gene Paige	<i>Keker & Van Nest</i>
	Thomas Plunkett	<i>Fliesler Meyer</i>
	W. Paul Schuck	<i>Schiff Hardin</i>
	Keith Weed	<i>Applied Materials</i>

Time and Location: March 19, 2008 at 6:00pm
Heller Ehrman
333 Bush Street, 30th Floor, San Francisco
415.772.6000

Dinner to Follow at: Brindisi Cucina di Mare
88 Belden Place, San Francisco
415.593.8000

Almost Anything Under The Sun Made By Man?

In 2006 the Supreme Court granted, then withdrew, certiorari in *Laboratory Corporation of America v. Metabolite Laboratories* to resolve an issue of patentable subject matter. The Federal Circuit appears to have gotten the hint that work is needed in this area, deciding two appeals from the PTO in 2007, both taking a narrow view of what constitutes patentable subject matter.

In re Nuijten, decided on September 20, 2007, held that a signal not embodied in any physical media did not fall within any of the four statutory classes of patentable subject matter.

In re Comiskey, also decided on September 20, 2007, held that claims to a method of mandatory arbitration resolution were not patentable subject matter because they claimed a "mental process," albeit with a practical application. The *Comiskey* Court stated:

The Supreme Court has held that a claim reciting an algorithm or abstract idea can state statutory subject matter only if, as employed in the process, it is embodied in, operates on, transforms, or otherwise involves another class of statutory subject matter, i.e., a machine, manufacture, or composition of matter. Slip opinion at 17.

In re Bilski was argued about a week after *In re Comiskey* and *In re Nuijten* came down. the Bilski application claims a method of hedging risk in commodities transactions. Exemplary claim 1 reads:

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 consumer;
- (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.

The *Bilski* oral argument revolved around whether *In re Comiskey* was correctly decided and how it applied to the claims presented in *In re Bilski*. On February 15, 2008 the Federal Circuit *sua sponte* granted an *en banc* hearing in a third appeal from the PTO, *In re Bilski*, to consider five questions regarding patentable subject matter in the context of a process patent.

- (1) Whether claim 1 of the 08/833,892 patent application claims patent-eligible subject matter under 35 U.S.C. § 101?

(2) What standard should govern in determining whether a process is patent-eligible subject matter under section 101?

(3) Whether the claimed subject matter is not patent-eligible because it constitutes an abstract idea or mental process; when does a claim that contains both mental and physical steps create patent-eligible subject matter?

(4) Whether a method or process must result in a physical transformation of an article or be tied to a machine to be patent-eligible subject matter under section 101?

(5) Whether it is appropriate to reconsider *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998), and *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352 (Fed. Cir. 1999), in this case and, if so, whether those cases should be overruled in any respect?.

NOTE: This order is nonprecedential.

United States Court of Appeals for the Federal Circuit

2007-1130
(Serial No. 08/833,892)

IN RE BERNARD L. BILSKI
and RAND A. WARSAW

Appeal from the United States Patent and Trademark Office, Board of Patent Appeals and Interferences.

Before MICHEL, Chief Judge, NEWMAN, MAYER, LOURIE, RADER, SCHALL, BRYSON, GAJARSA, LINN, DYK, PROST, and MOORE, Circuit Judges.

PER CURIAM.

ORDER

This case was argued before a panel of this court on October 1, 2007. Thereafter, a poll of the judges in regular active service was conducted to determine whether the appeal should be heard en banc.

Upon consideration thereof, IT IS ORDERED THAT:

The court by its own action grants a hearing en banc. The parties are requested to file supplemental briefs that should address the following questions:

- (1) Whether claim 1 of the 08/833,892 patent application claims patent-eligible subject matter under 35 U.S.C. § 101?
- (2) What standard should govern in determining whether a process is patent-eligible subject matter under section 101?
- (3) Whether the claimed subject matter is not patent-eligible because it constitutes an abstract idea or mental process; when does a claim that

contains both mental and physical steps create patent-eligible subject matter?

- (4) Whether a method or process must result in a physical transformation of an article or be tied to a machine to be patent-eligible subject matter under section 101?
- (5) Whether it is appropriate to reconsider State Street Bank & Trust Co. v. Signature Financial Group, Inc., 149 F.3d 1368 (Fed. Cir. 1998), and AT&T Corp. v. Excel Communications, Inc., 172 F.3d 1352 (Fed. Cir. 1999), in this case and, if so, whether those cases should be overruled in any respect?

This appeal will be heard en banc on the basis of the original briefs and supplemental briefs addressing, inter alia, the issues set forth above. An original and thirty copies of all briefs shall be filed, and two copies served on opposing counsel. The parties shall file simultaneous supplemental briefs which are due in the court within 20 days from the date of filing of this order, i.e., on March 6, 2008. No further briefing will be entertained. Supplemental briefs shall adhere to the type-volume limitations for principal briefs set forth in Federal Rule of Appellate Procedure 32 and Federal Circuit Rule 32.

Any amicus briefs will be due 30 days thereafter. Any such briefs may be filed without leave of court but otherwise must comply with Federal Rule of Appellate Procedure 29 and Federal Circuit Rule 29. Oral argument will be held on Thursday, May 8 at 2:00 p.m. in Courtroom 201.

FOR THE COURT

February 15, 2008
Date

/s/ Jan Horbaly
Jan Horbaly
Clerk

cc: David C. Hanson, Esq.
Stephen Walsh, Esq.

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

2007-1130
(Serial No. 08/833,892)

IN RE BERNARD L. BILSKI and RAND A. WARSAW,
Appellants.

Appeal From The United States Patent And Trademark Office,
Board Of Patent Appeals And Interferences.

BRIEF FOR *AMICUS CURIAE*
AMERICAN INTELLECTUAL PROPERTY LAW ASSOCIATION
IN SUPPORT OF APPELLANTS

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Dated: April 30, 2007

Counsel for Amicus Curiae

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

IN RE BILSKI

No. 2007-1130

CERTIFICATE OF INTEREST

Counsel for amicus curiae, the American Intellectual Property Law Association, certifies the following:

1. The full name of every party or amicus represented by me is:

American Intellectual Property Law Association

2. The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by me is:

Not applicable.

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

None.

4. The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:

Foley Hoag LLP: Denise W. DeFranco, Barbara A. Fiacco,
James M. Flaherty, and Miriam Pogach.

American Intellectual Property Law Association:
Judith M. Saffer

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Denise W. DeFranco

Date: March 19, 2007

TABLE OF CONTENTS

STATEMENT OF INTEREST OF <i>AMICUS CURIAE</i>	1
QUESTION PRESENTED	1
SUMMARY OF ARGUMENT	3
ARGUMENT	5
I. Congress Intended 35 U.S.C. § 101 to be Construed Broadly.	5
II. The Supreme Court’s Decision in <i>Diamond v. Diehr</i> Reflects a Broad Construction of § 101.	8
III. The Federal Circuit Has Properly Applied the <i>Diehr</i> Test.....	13
IV. The Strict Patentability Requirements of §§ 102, 103, and 112 Counterbalance the Broad Standard of § 101.....	15
V. The Board Erred in its § 101 Analysis of the <i>Bilski et al.</i> claims.	19
CONCLUSION	23

TABLE OF AUTHORITIES

CASES

<i>AT&T Corp. v. Excel Commc'ns, Inc.</i> , 172 F.3d 1352 (Fed. Cir. 1999)	11-12, 13, 14, 15, 23
<i>In re Alappat</i> , 33 F.3d 1526 (Fed. Cir. 1994)	13, 15
<i>Alco Standard Corp. v. Tennessee Valley Auth.</i> , 808 F.2d 1490 (Fed. Cir. 1987).....	11
<i>Arrhythmia Research Tech., Inc. v. Corazonix Corp.</i> , 958 F.2d 1053, 1061 (Fed. Cir. 1992).....	8
<i>In re Bergy</i> , 596 F.2d 952 (C.C.P.A. 1979), <i>aff'd</i> , <i>Diamond v. Chakrabarty</i> , 447 U.S. 303 (1980).....	16
<i>Ex parte Bilski</i> , No. 2002-2257 (Bd. Pat. App. & Int. Sept. 26, 2006)	<i>passim</i>
<i>Corning v. Burden</i> , 56 U.S. 252 (1853).....	10
<i>Diamond v. Chakrabarty</i> , 447 U.S. 303 (1980).....	5, 6, 7
<i>Diamond v. Diehr</i> , 450 U.S. 175 (1981).....	<i>passim</i>
<i>In re Fisher</i> , 421 F.3d 1365 (Fed. Cir. 2005)	10
<i>In re Foster</i> , 438 F.2d 1011 (C.C.P.A. 1971).....	17
<i>Gottschalk v. Benson</i> , 409 U.S. 63 (1972).....	11, 12, 13, 23
<i>J.E.M. AG Supply, Inc. d/b/a Farm Advantage, Inc. v. Pioneer Hi-Bred Int'l, Inc.</i> , 534 U.S. 124 (2001).....	7
<i>Ex parte Lundgren</i> , 76 U.S.P.Q. 2d 1385 (Bd. Pat. App. & Int. 2005).....	2
<i>In re Margolis</i> , 785 F.2d 1029 (Fed. Cir. 1986)	20
<i>In re Musgrave</i> , 431 F.2d 882 (C.C.P.A. 1970).....	11

<i>O'Reilly v. Morse</i> , 56 U.S. (15 How.) 62 (1853)	18
<i>Parker v. Flook</i> , 437 U.S. 584 (1978).....	9, 12
<i>In re Prater</i> , 415 F.2d 1393 (C.C.P.A. 1969)	17
<i>State Street Bank & Trust Co. v. Signature Fin. Group, Inc.</i> , 149 F.3d 1368 (Fed. Cir. 1998).....	<i>passim</i>
<i>In re Swartz</i> , 232 F.3d 862 (Fed. Cir. 2000)	10

CONSTITUTION

U.S. Const. art. I, § 8, cl. 8	5
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FEDERAL STATUTES

35 U.S.C. § 100(b)	6
35 U.S.C. § 101	<i>passim</i>
35 U.S.C. § 102.....	5, 6, 9, 16, 19
35 U.S.C. § 103	5, 16, 19
35 U.S.C. § 112	5, 16, 18, 19

OTHER SOURCES

Federal Rule of Appellate Procedure 29(a).....	1
S. Rep. No. 82-1979 (1952), <i>as reprinted in</i> 1952 U.S.C.C.A.N. 2394.....	6, 9, 16
Transcript of Oral Argument at 43:16-44:4, <i>Lab. Corp. of Am. Holdings</i> <i>d/b/a LabCorp v. Metabolite Labs., Inc.</i> , No. 04-607 (S. Ct. Mar. 21, 2006)	6
Robert M. Kunststadt, <i>Sneak Attack on U.S. Inventiveness</i> , Nat'l L.J., Nov. 9, 1998	15

USPTO White Paper, Automated Financial or Management Data Processing Methods (Business Methods) (2000)	20, 21
U.S. Patent No. 853,852.....	21

STATEMENT OF INTEREST OF *AMICUS CURIAE*

The American Intellectual Property Law Association (“AIPLA”) is a national bar association of more than 17,000 members engaged in private and corporate practice, in government service, and in the academic community.

AIPLA represents a wide and diverse spectrum of individuals, companies, and institutions involved directly and indirectly in the practice of patent, trademark, copyright, and unfair competition law, as well as other fields of law affecting intellectual property. AIPLA members represent both owners and users of intellectual property.

In accordance with Federal Rule of Appellate Procedure 29(a), AIPLA has obtained the consent of both parties to file this amicus brief.

QUESTION PRESENTED

The patent application at issue involves a method for managing or “hedging” the consumption risk costs associated with a commodity sold at a fixed price.¹ The method may be performed with the assistance of a computer but is not limited to the use of a computer. Claim 1 is exemplary. It reads:

A method for managing the consumption risk costs of a commodity sold by a commodity provider at a fixed price comprising the steps of:

¹ AIPLA does not have access to the full *Bilski et al.* application (including the patent specification), so descriptions of the *Bilski et al.* claims herein are based solely on the information available in *Ex parte Bilski*, No. 2002-2257 (Bd. Pat. App. & Int. Sept. 26, 2006) and Appellants’ brief.

(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 consumer;

(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.

The Board of Patent Appeals and Interferences (the “Board”) affirmed the examiner’s rejection of the claims on the ground that the claimed process is outside of the scope of § 101. In its 66-page decision addressing whether the *Bilski et al.* claims are directed to a statutory “process,” the Board expressed considerable uncertainty as to “what test(s) should be applied in determining statutory subject matter” under 35 U.S.C. § 101. Slip. op. at 5.

Relying on cases that narrowly interpreted the Supreme Court’s *Diamond v. Diehr* decision, 450 U.S. 175 (1981), including *Ex parte Lundgren*, 76 U.S.P.Q.2d 1385 (Bd. Pat. App. & Int. 2005), the Board identified and applied three possible “tests” in its analysis of the *Bilski et al.* claims: (1) whether the process *transforms physical subject matter* to a different state or thing, slip op. at 42-46; (2) whether the process falls outside the abstract idea exclusion by being “*instantiated in some physical way*” and by not claiming or “preempting” any and

every way of performing the abstract idea, *id.* at 46-49 (emphasis added); and (3) whether the process yields a “useful, ***concrete, and tangible*** result” as set forth in *State Street Bank & Trust Co. v. Signature Fin. Group, Inc.*, 149 F.3d 1368, 1373 (Fed. Cir. 1998). Slip op. at 49-50 (emphasis added). The Board’s analysis under each of these tests focused on the extent of physical transformation in the claimed processes, leading to the conclusion that the claims fail each of these tests.

The question for review is what test should be used to determine statutory subject matter under § 101, consistent with Supreme Court precedent and Congressional intent.

SUMMARY OF ARGUMENT

The proper test for determining what constitutes statutory subject matter under 35 U.S.C. § 101 is set forth in *Diamond v. Diehr*. Specifically, whether a process claim incorporating an abstract idea is statutory subject matter depends on whether the claimed process, when viewed as a whole, recites a practical application with a useful result. *Diehr*, 450 U.S. at 187 (“an ***application*** of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection”) (emphasis in original); *id.* at 188 n.11 (noting that the difference between an unpatentable abstract idea, scientific truth, or phenomenon of nature and a patentable invention is the application of that idea,

truth or phenomenon “to a new and useful end”) (quoting *Funk Bros. Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948)).

Further, while a transformation of physical subject matter from one state to another may be relevant in determining whether a claim that includes an abstract idea recites statutory subject matter, such a transformation is not required under § 101. AIPLA urges this Court to reject any requirement that claims incorporating abstract ideas include a strictly physical transformation in order to fall within the scope of § 101.

Congress employed expansive terms (i.e., “process, machine, manufacture, or composition of matter”) to describe the scope of patentable subject matter. With the broad categorical language of § 101, Congress was fulfilling its Constitutional mandate to foster innovation and public disclosure over a wide variety of useful arts. However, Congress balanced this broad standard for patentable subject matter with stricter requirements set forth in other provisions of the patent statute, including novelty, non-obviousness, written description, definiteness, and enablement, which determine whether the § 101 patentable subject matter is entitled to patent protection.

In connection with its review of the *Bilski et al.* claims, this Court should consider whether each claim, taken as a whole, describes a practical application of a process with a useful result. If so, then the claims cover statutory subject matter

and are eligible for patent protection, provided that they also meet the conditions of patentability set forth in §§ 102, 103, and 112. Applying the *Diehr* test, the *Bilski et al.* claims fall within the bounds of statutory subject matter because they achieve a practical and useful result: allowing commodity suppliers and consumers to engage in commodities transactions while minimizing the risks associated with fluctuations in demand for such commodities and providing investment opportunities for market participants.

ARGUMENT

I. Congress Intended 35 U.S.C. § 101 to be Construed Broadly.

In accordance with its Constitutional mandate “to promote the progress of . . . useful arts,” U.S. Const. art. I, § 8, cl. 8, Congress established a broad scope for patentable inventions in § 101, eschewing exclusions or limiting language. Section 101 provides:

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.

35 U.S.C. § 101 (emphasis added). The use of the word “any” in § 101 underscores Congress’ intent not to place restrictions on the subject matter eligible for patent protection. *See Diamond v. Chakrabarty*, 447 U.S. 303, 315 (1980); *State Street*, 149 F.3d at 1373. The 1952 legislation enacting this provision replaced the word “art” with “process,” noting that “art” had been “interpreted by

courts to be practically synonymous with process or method.” S. Rep. No. 82-1979 (1952), *as reprinted in* 1952 U.S.C.C.A.N. 2394, 2398, 2409-10. Congress also added a definition of “process” to make clear that the term embraces a “method.” 35 U.S.C. § 100(b) (defining “process” to mean “process, art or method, [including] a new use of a known process, machine, manufacture, composition of matter, or material”).

As the Supreme Court has recognized, Congress employed expansive terms to define the scope of patentable subject matter under § 101 in order to encompass “anything under the sun made by man.” *Chakrabarty*, 447 U.S. at 309 (citations omitted).² The Supreme Court has further recognized that, in choosing expansive

² The phrase “anything under the sun made by man” is taken from the following sentence in the legislative history: “A person may have ‘invented’ a machine or manufacture, which may include anything under the sun that is made by man, but it is not necessarily patentable under section 101 unless the conditions of the title are fulfilled.” S. Rep. No. 82-1979, *as reprinted in* 1952 U.S.C.C.A.N. 2394, 2399.

Some have argued that the phrase applies only to inventions in the “machine” or “manufacture” categories. *See, e.g.*, Transcript of Oral Argument at 43:16-44:4, *Lab. Corp. of Am. Holdings d/b/a LabCorp v. Metabolite Labs., Inc.*, No. 04-607 (S. Ct. Mar. 21, 2006), *available at* http://www.supremecourtus.gov/oral_arguments/argument_transcripts/04-607.pdf. The sentence, however, must be read in the context of the entire legislative history of which it is a part. It reflects an attempt to distinguish between the breadth of § 101 (which “sets forth the subject matter that can be patented”) and the stringent standards of other parts of the statute, such as § 102 (which set forth the “conditions under which a patent may be obtained”). S. Rep. No. 82-1979, *as reprinted in* 1952 U.S.C.C.A.N. 2394, 2399. The suggestion that the phrase applies to some categories of statutory subject matter but not others is therefore an unsupportable dissection of a general statement concerning the overall balance established by the patent laws.

words “modified by the comprehensive ‘any,’ Congress plainly contemplated that the patent laws would be given wide scope.” *Id.* at 308. Indeed, “Congress employed broad general language in drafting § 101 precisely because [ground-breaking] inventions are often unforeseeable.” *Id.* at 316. For this reason, the Supreme Court has been reluctant to identify limitations on the scope of statutory subject matter set forth in § 101. *See, e.g., J.E.M. AG Supply, Inc. d/b/a Farm Advantage, Inc. v. Pioneer Hi-Bred Int’l, Inc.*, 534 U.S. 124, 145-46 (2001) (“[W]e decline to narrow the reach of § 101 where Congress has given us no indication that it intends this result.”).³

In *Diehr*, the Supreme Court invoked this phrase to construe § 101’s use of “process” as broadly as it has construed other categories of statutory subject matter:

Not until the patent laws were recodified in 1952 did Congress replace the word “art” with the word “process.” It is that latter word which we confront today, and in order to determine its meaning we may not be unmindful of the Committee Reports accompanying the 1952 Act which inform us that Congress intended statutory subject matter to “include anything under the sun that is made by man.”

Diehr, 450 U.S. at 182 (citations omitted).

³ It would be improper for courts to substitute their judgment for well-informed policy decisions better left to Congress concerning the scope of § 101. *See Chakrabarty*, 447 U.S. at 317. The Supreme Court has repeatedly admonished that “courts should not read into the patent laws limitations and conditions which the legislature has not expressed.” *Diehr*, 450 U.S. at 182 (citation and internal quotations omitted). “If Congress wishes to remove some processes from patent protection, it can enact such an exclusion.” *Arrhythmia Research Tech., Inc. v. Corazonix Corp.*, 958 F.2d 1053, 1064 (Fed. Cir. 1992) (Rader, J. concurring).

II. The Supreme Court's Decision in *Diamond v. Diehr* Reflects a Broad Construction of § 101.

The Supreme Court in *Diamond v. Diehr* articulated a test for determining statutory subject matter that is appropriately broad, flexible, and adaptable in order to encompass new and evolving technologies. Specifically, the *Diehr* Court held that although laws of nature, natural phenomena, and abstract ideas alone are not patentable, 450 U.S. at 185, “an *application* of a law of nature or mathematical formula to a known structure or process may well be deserving of patent protection.” *Diehr*, 450 U.S. at 187 (emphasis in original).

The patent application at issue in *Diehr* claimed an industrial process that incorporated an abstract idea in the form of a mathematical formula. In affirming the lower court's holding that the claims covered statutory subject matter, the Court explained that “we do not view respondents' claims as an attempt to patent a mathematical formula, but rather to be drawn to an industrial process for the molding of rubber products.” *Id.* at 192-93. The *Diehr* Court held that although an abstract idea in isolation is not patentable, a practical application of the same abstract idea may be. *Id.* at 187.

According to the *Diehr* Court, what separates an abstract idea, scientific truth, or phenomenon of nature from an invention is the application of that idea, truth or phenomenon to “a new and useful end.” *Id.* at 188 n.11 (quoting *Funk*

Bros., 333 U.S. at 130).⁴ The Court distinguished its earlier decision in *Parker v. Flook* as relating to claims that merely recited a mathematical formula without providing sufficient details in the patent application for practical use beyond the formula itself:

The application, however, did not purport to explain how these other variables were to be determined, nor did it purport “to contain any disclosure relating to the chemical processes at work, the monitoring of the process variables, or the means of setting off an alarm or adjusting an alarm system. All that it provides is a formula for computing an updated alarm limit.”

Diehr, 450 U.S. at 186-87 (quoting *Parker v. Flook*, 437 U.S. 584, 586 (1978))
(footnote omitted).

A reproducible, useful result is evidence of the practical application of an abstract idea that would fall within the scope of statutory subject matter defined by § 101. This usefulness inquiry is reinforced by the text of § 101, which expressly includes the term “useful.” 35 U.S.C. § 101 (“Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter . . .”). The utility requirement is therefore relevant to the question of what constitutes statutory subject matter under § 101. *See In re Swartz*, 232 F.3d 862, 863 (Fed.

⁴ The word “new” in § 101 refers to the novelty requirement as articulated in § 102. S. Rep. No. 82-1979, *as reprinted in* 1952 U.S.C.C.A.N. 2394, 2399 (“Section 102, in general, may be said to describe the statutory novelty required for patentability, and includes, in effect, an amplification and definition of ‘new’ in section 101.”).

Cir. 2000) (“The utility requirement of § 101 mandates that the invention be operable to achieve useful results.”); *Diehr*, 450 U.S. at 187; *State Street*, 149 F.3d at 1374.⁵ Thus, this Court has required “a claimed invention to have a specific and substantial utility to satisfy § 101.” *In re Fisher*, 421 F.3d 1365, 1371 (Fed. Cir. 2005). In particular, a claimed method must have an asserted use that provides a well-defined and particular benefit to the public that is both significant and immediate. *Id.* “[I]nsignificant post-solution activity will not transform an unpatentable principle into a patentable process.” *Diehr*, 450 U.S. at 191-92.

Under the *Diehr* test, a claim also must be considered *as a whole* when determining whether it is directed to a useful and practical application. *Id.* at 188. The Court noted that this approach is particularly important for “a process claim because 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

⁵ In *Corning v. Burden*, 56 U.S. 252 (1853), the Supreme Court explained that “[i]t is for the discovery or invention of some practicable method or means of producing a beneficial result or effect, that a patent is granted, and not for the result or effect itself. It is when the term process is used to represent the means or method of producing a result that it is patentable, and it will include all methods or means which are not effected by mechanism or mechanical connations.” *Id.* at 268. As the *Diehr* Court noted in citing this passage from *Corning v. Burden*, “[a]lthough the term ‘process’ was not added to 35 U.S.C. § 101 until 1952[,] a process has historically enjoyed patent protection because it was considered a form of ‘art’ as that term was used in the 1793 Act.” *Diehr*, 450 U.S. at 182.

the combination was made.”⁶ *Id.* Considering the entire claim ensures that patents may be issued only when abstract ideas are paired with useful, practical applications in “the other steps in [the] claimed process.” *Id.* at 187.

The *Diehr* Court further identified “[t]ransformation and reduction of an article ‘to a different state or thing’” as a clue to the patentability of a process, but did not make transformation a requirement. *Diehr*, 450 U.S. at 184 (quoting *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972)); *see also id.* at 192 (“[W]hen a claim containing a mathematical formula implements or applies that formula in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect (*e.g.*, transforming or reducing an article to a different state or thing), then the claim satisfies the requirements of § 101.”) (emphasis added).⁷

⁶ Any purely mental steps included in a claimed process do not themselves render the claim unpatentable, but should be evaluated as part of the claim as a whole. *See Alco Standard Corp. v. Tennessee Valley Auth.*, 808 F.2d 1490, 1496 (Fed. Cir. 1987); *In re Musgrave*, 431 F.2d 882, 893 (C.C.P.A. 1970). Nor is the inclusion of a process capable of being performed by a human “fatal to patentability” of an application claiming an otherwise patentable process. *Alco Standard Corp.*, 808 F.2d at 1496.

⁷ This Court has also observed that “physical transformation . . . is not an invariable requirement, but merely one example of how a mathematical algorithm [i.e., an abstract idea] may bring about a useful application.” *AT&T Corp. v. Excel Commc’ns, Inc.*, 172 F.3d 1352, 1358 (Fed. Cir. 1999). Indeed, the *AT&T* panel recognized that the *Diehr* Court used “[t]he ‘e.g.’ signal [to] denote[] an example, not an exclusive requirement” when identifying the transformation test as a tool to

The Court's reasoning is consistent with its prior statements in the *Benson* case that transformation of physical subject matter is not required under § 101. *See Benson*, 409 U.S. at 71 (refusing to accept the argument that “a process patent must either be tied to a particular machine or apparatus or must operate to change articles or materials to ‘a different state or thing’” in order to satisfy § 101); *see also Flook*, 437 U.S. at 588 n.9. While transformation may in some cases demonstrate patentability, the *Diehr* Court reaffirmed that it is only exemplary. In other words, transformation may be a sufficient condition, but it is not a necessary one.

Imposition of a strict “physical transformation” requirement would unduly limit the broad scope of § 101, undermining settled expectations about the patentability of financial methods. Such a requirement would also impede the new economy in which commerce is based on and driven by computers, software, and business methods to manage information and conduct transactions. The patent system must be available to foster this new economy in the same way it has fostered the economy and technological innovations underlying it for generations.

Finally, the *Diehr* Court noted that the abstract idea exclusion prevents patent protection preempting *all* practical applications of an abstract idea, but it

determine whether a process is performing a function which the patent laws were designed to protect. *Id.* at 1359.

emphasized that patentees should be able to preclude others from using abstract ideas as applied in a process with a particular useful and practical result. *Diehr*, 450 U.S. at 187-88. In contrast to the claims in *Diehr*, the claims at issue in the prior *Benson* case, which were directed to a method of converting signals from binary coded decimal form into pure binary form, failed for this reason. The Supreme Court concluded that because “[t]he mathematical formula involved here has no substantial practical application except in conjunction with a digital computer . . . the patent would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself.” *Benson*, 409 U.S. at 71-72.

III. The Federal Circuit Has Properly Applied the *Diehr* Test.

In its leading cases addressing statutory subject matter under § 101, this Court has recognized the importance of usefulness and practicality as articulated in *Diehr*. See, e.g., *AT&T*, 172 F.3d at 1356-57; *State Street*, 149 F.3d at 1373-74; *In re Alappat*, 33 F.3d 1526, 1543-45 (Fed. Cir. 1994). In *State Street*, this Court reasoned that “[u]npatentable mathematical algorithms are identifiable by showing they are merely abstract ideas constituting disembodied concepts or truths that are not ‘useful.’ From a practical standpoint, this means that to be patentable an algorithm must be applied in a ‘useful’ way.” *State Street*, 149 F.3d at 1373.

Consistent with *Diehr*, this Court in *State Street* set forth the appropriate inquiry: “[t]he question of *whether a claim encompasses statutory subject matter should . . . focus on . . . the essential characteristics of the subject matter, in particular, its practical utility.*” *Id.* at 1375 (emphases added). The Court then held that a data processing system that performs a series of mathematical calculations to determine the final price of a mutual fund share, which is relied upon by regulatory authorities and in trading activities, constitutes statutory subject matter because it is a practical application of an abstract idea with a useful result “expressed in numbers, such as price, profit, percentage, cost, or loss.” *Id.* at 1373, 1375.

In *AT&T*, this Court likewise noted that the patentability evaluation of abstract ideas requires consideration of whether the idea “has been reduced to some practical application rendering it ‘useful.’” *AT&T*, 172 F.3d at 1357. Consistent with the *Diehr* decision, this Court further observed that “physical transformation . . . is not an invariable requirement, but merely one example of how a mathematical algorithm [i.e., an abstract idea] may bring about a useful application.” *Id.* at 1358.

Similarly, in *Alappat*, this Court held that a claim directed to a machine that performed mathematical calculations to transform waveform data samples into a smooth waveform satisfied § 101 because it was “not a disembodied mathematical

concept which may be characterized as an ‘abstract idea,’ but rather a specific machine to produce a useful, concrete, and tangible result.” *In re Alappat*, 33 F.3d at 1544. Thus, the established Federal Circuit precedent incorporates the useful and practical application test set forth in *Diehr*.⁸

IV. The Strict Patentability Requirements of §§ 102, 103, and 112 Counterbalance the Broad Standard of § 101.

Those who favor placing judicially imposed limits on the scope of patentable subject matter often express concern that the Patent Office will issue overbroad patents that impede, rather than promote, technology and innovation. *See, e.g.*, Robert M. Kunststadt, *Sneak Attack on U.S. Inventiveness*, Nat’l L.J., Nov. 9, 1998, at A21 (complaining that in the wake of the *State Street* decision “[i]t will be impossible to operate such businesses [as advertising agencies and marketing consultancies] without advice from patent counsel”). These arguments

⁸ In each of *Alappat*, *State Street*, and *AT&T*, this Court employed a “useful, concrete and tangible result” inquiry to apply the *Diehr* test. *See Alappat*, 33 F.3d at 1544; *State Street*, 149 F.3d at 1373; *AT&T*, 172 F.3d at 1358. This Court’s use of the terms “concrete” and “tangible,” however, should not be read as requiring a physical transformation. As this Court stated in *AT&T*, “physical transformation . . . is not an invariable requirement, but merely one example of how a mathematical algorithm [i.e., an abstract idea] may bring about a useful application.” *AT&T*, 172 F.3d at 1358. Moreover, in keeping with *Diehr*, the holdings in these cases that the claims covered statutory subject matter turned on the practical utility of the claimed subject matter. *See Alappat*, 33 F.3d at 1544-45; *State Street*, 149 F.3d at 1373; *AT&T*, 172 F.3d at 1357.

unreasonably isolate § 101, overlooking that it is only the first of multiple hurdles an applicant must overcome to obtain a patent.

Section 101 expressly affirms patentability only if the claimed subject matter *also* satisfies the multiple “conditions and requirements” of Title 35. 35 U.S.C. § 101. This neatly reflects the balance that Congress struck in the patent statute, juxtaposing the broad scope of § 101 with the limiting standards of §§ 102, 103, and 112, pertaining to novelty and non-obviousness, as well as patent disclosure and claiming requirements.⁹ See S. Rep. No. 82-1979, *as reprinted in* 1952 U.S.C.C.A.N. 2394, 2399 (“Section 101 sets forth the subject matter that can be patented, ‘subject to the conditions and requirements of this title.’ The conditions under which a patent may be obtained follow. . . .”). The Supreme Court recognized this balance in *Diehr*: “[W]hen a process for curing rubber is devised which incorporates . . . a more efficient solution of [an unpatentable] equation, that process is *at the very least not barred at the threshold by § 101.*” *Diehr*, 450 U.S. at 188 (emphasis added).

⁹ As this Court’s predecessor has explained, “[a]chieving the ultimate goal of a patent . . . involves . . . having the separate keys to open in succession the three doors of sections 101, 102, and 103, the last two guarding the public interest by assuring that patents are not granted which would take from the public that which it already enjoys (matters already within its knowledge whether in actual use or not) or potentially enjoys by reason of obviousness from knowledge which it already has.” *In re Bergy*, 596 F.2d 952, 960 (C.C.P.A. 1979) (emphasis omitted), *aff’d*, *Diamond v. Chakrabarty*, 447 U.S. 303 (1980).

Within this statutory landscape, applications claiming patentable subject matter frequently fail to meet one of these additional, limiting requirements. *See id.* at 191 (“[I]t may later be determined that the respondents’ process is not deserving of patent protection because it fails to satisfy the statutory conditions of novelty under § 102 or nonobviousness under § 103.”). For example, *In re Foster*, 438 F.2d 1011 (C.C.P.A. 1971), dealt with an application directed to a process for clarifying the reading of seismograms and a related apparatus. This Court’s predecessor first concluded that the claims encompassed statutory subject matter. Nevertheless, the court affirmed a § 112 rejection:

Since these claims are not commensurate with appellants’ own definition of what they are seeking to cover and thus go beyond that which “applicant regards as his invention,” we feel that [the claims] fail to comply with the second paragraph of 35 U.S.C. § 112. This is despite the fact that we have already found that the claims involve statutory subject matter.

Id. at 1016; *see also In re Prater*, 415 F.2d 1393, 1403-04 (C.C.P.A. 1969) (claimed process for minimizing error in spectral analysis using certain equations to select optimum peaks constituted statutory subject matter, but was not patentable because the claims were overbroad under § 112).

A close reading of early Supreme Court precedent similarly illustrates that principles currently embodied in § 112, as opposed to § 101, have traditionally been used to prevent inappropriately sweeping claims of the sort decried by critics

of § 101. The Supreme Court’s analysis in the *O’Reilly v. Morse* case, 56 U.S. (15 How.) 62 (1853), often cited as an early statutory subject matter case, employs language that would, under current patent law, form the basis of a § 112 rejection pursuant to the written description and/or enablement requirements.

In that case, the Court allowed certain claims to Morse’s telegraph invention but rejected a claim directed to an abstraction of that invention—the use of “electromagnetism, however developed for marking or printing intelligible characters, signs or letters, at any distances”—as attempting to claim any and all future methods of printing at a distance by means of current. *Id.* at 112, 119. In particular, the Court concluded that Morse invented the first seven of eight claims (those claims specifically pertaining to the telegraph and related applications of electromagnetism), but rejected the eighth because it claimed “an exclusive right to use a manner and process which [Morse] has not described and indeed had not invented, and therefore could not describe when he obtained his patent. The court is of the opinion that the claim is too broad, and not warranted by law.” *Id.* at 113. Therefore, to the extent that modern day critics are concerned with the breadth of issued claims and whether those broad claims reflect what the applicants actually invented, § 112 is a more appropriate “check” against perceived overly broad claims than § 101.

Sections 102, 103, and 112 thus serve to limit what is patentable from what is statutory subject matter under § 101. *See State Street*, 149 F.3d at 1377 (whether a patent's claims are "too broad to be patentable is not to be judged under § 101, but rather under §§ 102, 103, and 112"). Consequently, applying § 101 as broadly as Congress intended has not and will not open the floodgates to overreaching patents, but simply effectuates an integrated and well-balanced patent system.

V. The Board Erred in its § 101 Analysis of the *Bilski et al.* claims.

The Board's decision that the *Bilski et al.* claims are directed to non-statutory subject matter is the result of an erroneously cramped analysis. Instead of directly applying the *Diehr* test of whether the claimed process includes a practical application with a useful result, the Board analyzed the *Bilski et al.* claims under three narrower "tests": (i) a transformation inquiry, (ii) an abstract idea test, and (iii) a shrunken version of the useful, concrete, and tangible result test. The Board's application of each of these tests improperly focused on physical transformation, leading to a result inconsistent with *Diehr*.

Proper application of *Diehr* to the *Bilski et al.* claims reveals patentable subject matter under § 101.¹⁰ Even assuming that the claimed process incorporates

¹⁰ The question of whether the *Bilski et al.* claims meet the requirements of 35 U.S.C. §§ 102, 103, and 112 is not before the Court in this appeal, and AIPLA takes no position on this question. *See In re Margolis*, 785 F.2d 1029, 1032 (Fed. Cir. 1986) ("In the interest of an orderly and fair administrative process, it is

abstract ideas, each of the claims, when viewed in its entirety, is directed to a practical application with a useful result, namely managing or hedging commodity consumption risk costs. This utility is both specific and substantial in that it provides benefits for commodity consumers (in the form of cost predictability and potential cost savings), commodity providers (in the form of demand predictability and potential increased profits), and market participants (in the form of possible investment profits based on their counter-risk position to the commodity consumers). *See State Street*, 149 F.2d at 1374 (the practical utility of the claims held to satisfy § 101 was the “transformation of data, representing discrete dollar amounts, by a machine through a series of mathematical calculations into a final share price . . . momentarily fixed for recording and reporting purposes and . . . accepted and relied upon by regulatory authorities and in subsequent trades.”).¹¹

inappropriate for this court to consider rejections that had not been considered by or relied upon by the Board.”).

¹¹ Patents applying abstract ideas to financial transactions and methods date back at least to the early nineteenth century. According to a USPTO White Paper, “[f]inancial patents in the paper-based technologies have been granted continuously for over two hundred years.” USPTO White Paper, Automated Financial or Management Data Processing Methods (Business Methods), at 2 (2000), available at <http://www.uspto.gov/web/menu/busmethp/whitepaper.pdf>. One early example of such a patent is U.S. Patent No. 853,852, entitled “Insurance System,” which issued on May 14, 1907. That patent claimed a two-part insurance policy consisting of a travel insurance contract combined with a post card, bearing the contract identification number, to be mailed to the beneficiary to mark the beginning of the insurance term. The claim in this nearly 100-year-old patent, like the *Bilski et al.* claims, is directed to facilitating financial transactions.

Further, the claims do not preempt *all* uses of an abstract idea. *See Diehr*, 450 U.S. at 187. The *Bilski et al.* claims are specifically directed to managing the consumption risks associated with commodities, as distinct from the risks associated with other purchases, such as insurance. Therefore, the claims do not extend to every use of the abstract ideas upon which they may be based. The Board's conclusion to the contrary is illogical and conflicts with *Diehr*. The Board held that the claims cover both non-statutory and possibly statutory subject matter, and they therefore "cover ('preempt') any and every possible way of performing the steps," and thus are so broad that they are "directed to the 'abstract idea' itself, rather than a practical implementation of the concept." Slip op. at 46. This circular reasoning cannot be reconciled with *Diehr*, in which the Court emphasized that patentees should be able to claim abstract ideas incorporated within useful, practical applications in the context of a claimed process. *See Diehr*, 450 U.S. at 187-88.

The *Bilski et al.* claimed process also includes post-solution activity that rises above the level of unpatentable insignificance identified in *Diehr*. *See Diehr*, 450 U.S. at 191-92 ("insignificant post-solution activity will not transform an unpatentable principle into a patentable process."). In *Diehr*, the claimed process used the result of a mathematical formula to develop a more efficient manufacturing process. *Id.* at 188 ("[W]hen a process for curing rubber is devised

which incorporates in it a more efficient solution of the [unpatentable] equation, that process is at the very least not barred at the threshold by § 101.”). In this case, the claimed process uses an analysis of a specific commodity in a defined time period to identify and initiate a set of risk-managed transactions, including appropriate participants (suppliers, consumers, and market participants) as well as specific terms (including fixed prices) and the number of commodity sales transactions necessary to balance the risks associated with a commodity market.

The Board inexplicably implied that the physical acts necessary to implement the claimed process fall into the category of “insignificant post-solution activity” of the type proscribed by *Diehr*. Slip. op. at 46-47. However, this implication is unsustainable on a simple reading of the claims: consummation of risk-managed transactions to purchase and sell commodities and commodity investment opportunities at fixed prices is substantial activity beyond merely conceptualizing what constitutes a set of risk-balanced transactions.

The Board’s application of the “useful, concrete, and tangible result” test was also improperly narrow. The Board concluded that the *Bilski et al.* claims failed this test because a concrete and tangible result is “the opposite of an ‘abstract idea’ and requires some sort of physical instantiation.” *Id.* at 49. The Board further stated that “a ‘concrete and tangible result’ requires a transformation of physical subject matter and/or evidence that the subject matter is more than an

‘abstract idea.’” *Id.* at 61-62. But as set forth in detail above, transformation of physical subject matter is not required under § 101. *See, e.g., Diehr*, 480 U.S. at 192; *Benson*, 409 U.S. at 71; *AT&T*, 172 F.3d at 1357-58.¹²

In sum, by applying three narrow “tests” and ignoring the broad statutory mandate as interpreted in *Diehr*, the Board reached the wrong conclusion about the *Bilski et al.* claims. Although the claimed process may incorporate abstract ideas, the claims at issue, when viewed in their entirety, are directed to a useful process with a specific and substantial practical application. Accordingly, the *Bilski et al.* claims satisfy § 101, and this Court should reverse the Board’s finding to the contrary.

CONCLUSION

AIPLA urges the Court not to disturb the settled expectations that financial method patents fall squarely within the broad scope of 35 U.S.C. § 101. The appropriate analysis for determining statutory subject matter under § 101 was set forth in *Diamond v. Diehr* and subsequently applied by this Court without a strict

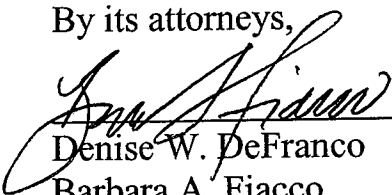
¹² The Board noted that the *Bilski et al.* claims involve a “non-machine-implemented” process, and held that *State Street* and *AT&T* are not controlling because those cases involved the “special case” of transformation of data by a machine, i.e., machine-implemented processes. Slip op. at 6. This distinction is unsupported by the holdings and reasoning of those cases, and represents exactly the sort of artificial line-drawing soundly rejected by the Supreme Court in *Diehr*. Section 101 is not limited to machines, but expressly embraces any “process” or “method” that has a practical application as long as the other statutory requirements are met.

physical transformation requirement. For the reasons set forth herein, AIPLA respectfully requests that the Court reaffirm the useful and practical application test and reverse the Board's rejection of the *Bilski et al.* claims.

Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

I hereby certify under Federal Rule of Appellate Procedure 32(a)(7)(c)(i) that this brief contains 6,127 words as counted by the word processing program used to prepare the brief and therefore complies with Federal Rule of Appellate Procedure 29(d) and the type-volume limitation of Federal Rule of Appellate Procedure 32(a)(7)(B)(i).


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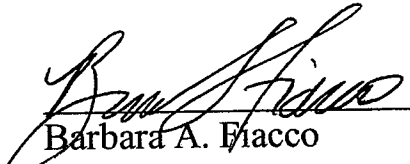
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I hereby certify that on April 30, 2007, through Wilson-Epes Printing, I caused one original and eleven copies of the Brief for *Amicus Curiae* American Intellectual Property Law Association in Support of Appellants to be filed with the clerk for the United States Court of Appeals for the Federal Circuit by hand.

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In The
United States Court of Appeals
For The Federal Circuit

IN RE BERNARD L. BILSKI and RAND A. WARSAW,

**APPEAL FROM THE UNITED STATES PATENT AND TRADEMARK OFFICE,
BOARD OF PATENT APPEALS AND INTERFERENCES.**

APPELLANTS' SUPPLEMENTAL BRIEF
(PURSUANT TO THE COURT'S ORDER OF FEBRUARY 15, 2008)

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TABLE OF CONTENTS

Page(s)

TABLE OF AUTHORITIES	ii
I. INTRODUCTION	1
II. FEDERAL CIRCUIT QUESTION 1	
Whether claim 1 of the 08/833,892 patent application claims patent-eligible subject matter under 35 U.S.C. § 101	1
III. FEDERAL CIRCUIT QUESTION 2	
What standard should govern in determining whether a process is patent-eligible subject matter under section 101?	4
IV. FEDERAL CIRCUIT QUESTION 3	
Whether the claimed subject matter is not patent-eligible because it constitutes an abstract idea or mental process; when does a claim that contains both mental and physical steps create patent-eligible subject matter?	11
V. FEDERAL CIRCUIT QUESTION 4	
Whether a method or process must result in a physical transformation of an article or be tied to a machine to be patent- eligible subject matter under section 101?	13
VI. FEDERAL CIRCUIT QUESTION 5	
Whether it is appropriate to reconsider State Street Bank & Trust Co. v. Signature Financial Group, Inc., 149 F.3d 1368 (Fed. Cir. 1998), and AT&T Corp. v. Excel Communications, Inc., 172 F.3d 1352 (Fed. Cir. 1999), in this case and, if so, whether those cases should be overruled in any respect?	15
VII. CONCLUSION	17

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TABLE OF AUTHORITIES

	<u>Page(s)</u>
 Cases	
<i>AT&T Corp. v. Excel Communications, Inc.</i> , 172 F.3d 1352 (Fed. Cir. 1999)	1, 15, 16
<i>Cochrane v. Deener</i> , 94 U.S. 780, 24 L. Ed. 139 (1877).....	14
<i>Diamond v. Chakrabarty</i> , 447 U.S. 303, 100 S. Ct. 2204, 65 L. Ed. 2d 144 (1980)	6, 7
<i>Diamond v. Diehr</i> , 450 U.S. 175, 101 S. Ct. 1048, 67 L. Ed. 2d 155 (1981)	<i>passim</i>
<i>Ex parte Lundgren</i> , 76 USPQ.2d 1385 (BPAI 2005)	12
<i>Gottschalk v. Benson</i> , 409 U.S. 63 (1972).....	<i>passim</i>
<i>In re Alappat</i> , 33 F.3d 1526 (Fed. Cir. 1994)	1, 7
<i>In re Chatfield</i> , 545 F.2d 152 (CCPA 1976), <i>cert. denied</i> , 434 U.S. 875 (1977).....	10, 12
<i>In re Comiskey</i> , 499 F.3d 1365 (Fed. Cir. 2007)	12
<i>In re Musgrave</i> , 431 F.2d 882 (C.C.P.A. 1970).....	11, 12
<i>Laboratory Corporation of America Holdings v. Metabolite Laboratories, Inc.</i> , 548 U.S. 975 (2006).....	7, 13

<i>LeRoy v. Tatham</i> , 14 How. (55 U.S.) 156 (1853)	6
<i>O'Reilly v. Morse</i> , 15 How. (56 U.S.) 62 (1854)	9
<i>Parker v. Flook</i> , 437 U.S. 584 (1978)	<i>passim</i>
<i>State Street Bank & Trust Co. v. Signature Financial Group, Inc.</i> , 149 F.3d 1368 (Fed. Cir. 1998)	1, 6, 15, 16
<i>The Telephone Cases</i> , 126 U.S. 1 (1898)	9
<i>Warner-Jenkinson Co. v. Hilton Davis Chem. Co.</i> , 520 U.S. 17 (1997)	16

Constitutional Provision

U.S. CONST. art. I, § 8, Clause 8	4, 11
---	-------

Statutes

35 U.S.C. § 100(b)	5
35 U.S.C. § 101	<i>passim</i>
35 U.S.C. § 102	6
35 U.S.C. § 103	6
35 U.S.C. § 112	6
35 U.S.C. § 273(a)(3)	5, 14

Treatise

<i>1 Chisum on Patents</i> § 1.03[6][c]	12
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I. INTRODUCTION

Bilski's claim sets forth patentable subject matter because it does not claim an idea itself and is directed to a practical end use consistent with the requirements of the *Benson*, *Flook* and *Diehr* decisions of the Supreme Court. Moreover, it provides a "useful, concrete, and tangible result" consistent with the *Alappat*, *State Street* and *AT&T* decisions of this Court. Following, we address the Court's specific questions in order under separate headings.

II. FEDERAL CIRCUIT QUESTION 1

Whether claim 1 of the 08/833,892 patent application claims patent-eligible subject matter under 35 U.S.C. § 101?

The Bilski invention, as described in this patent application (A79-A92), relates to a method of managing the consumption risk costs associated with a commodity sold at a fixed price for a given period. The method is directed, for example, to energy commodities (such as natural gas) and includes ways for compensating for weather-related risks associated with buying and providing energy. Accordingly, the method claimed by Bilski is a financial or transactional process that includes physical and tangible process steps.

The method is practiced by a commodity provider. First, the commodity provider initiates a series of transactions with consumers of the commodity wherein the consumers purchase their requirements for the commodity at a fixed

rate for a given period. The fixed rate corresponds to the consumers' risk position, i.e., their aversion to an unusual spike in the demand for the commodity. For example, with respect to energy, the fixed rate locked in by a consumer may be higher or lower than the expected energy costs in an average year. Next, the commodity provider identifies market participants (suppliers) for the commodity which have a risk position counter to that of the consumers, i.e., an aversion to a precipitous drop in consumer demand. The commodity provider initiates a series of transactions with the market participants at a second fixed rate. The risks assumed in the series of transactions with the market participants at the second fixed rate balance the risk position of the series of consumer transactions at the previously fixed rate.

Independent claims 1 reads as follows:

1. 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 consumer;
 - (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. (A 198)

Nothing in 35 U.S.C. § 101, in the Supreme Court cases interpreting the statute, or in the controlling decisions of this Court requires or supports the rejection of the Bilski application claim 1 as non-statutory subject matter.

The claimed method is unambiguously a statutory “process” and does not fall within any of the judicially-created exceptions; namely, “laws of nature, natural phenomena, and abstract ideas.”

This Court has set forth a test for distinguishing abstract ideas and the Bilski claimed method passes the test. The Bilski claimed method produces “a useful, concrete, and tangible result.” This test addresses the underlying concerns of the Supreme Court: (1) the process does not claim an idea itself; and (2) the process is directed to a particular end use. (See next section of this brief.) The Bilski method enables commodity suppliers and consumers of commodities to conduct business with reduced concern for fluctuations in demand over a given time period. For example, if the commodity is natural gas for heating and the consumer is a school district having a fixed tax base (and therefore required to carefully budget expenditures), practice of this method solves the problems resulting from annual fluctuations in the weather. On the other hand, it also protects the suppliers from the opposite effect of such fluctuations.

The Bilski claim sets forth a practical business method that only can be practiced by a series of physical acts: a step of initiating a first series of transactions, a step of identifying market participants and a step of initiating a second series of transactions. These are not steps that are totally or substantially practiced in the mind but clearly require physical activity which have a tangible result. The Bilski method steps do not simply set forth an idea, let alone an abstract idea. These specific steps are directed to a particular end use – making possible the sale, purchase, and supply of commodities for a give period of time at a fixed price. The claim is specific and does not foreclose other methods to achieve a similar objective.

The Bilski claim sets forth a patentable process that includes physical steps including a series of transactions yielding a useful, real world result.

III. FEDERAL CIRCUIT QUESTION 2

What standard should govern in determining whether a process is patent-eligible subject matter under section 101?

Article I, Section 8, Clause 8 of the Constitution provides for the promotion of “progress” in the “useful arts.” “Useful arts” is a broad term not limited to manufacturing alone.

The Patent Statute specifically provides for the protection of “any new and useful process” (35 U.S.C. § 101). “The term ‘process’ means process, art or

method..." 35 U.S.C. § 100(b). Business method patents are specifically contemplated by the Patent Statute. "[T]he term method means a method of doing or conducting business." 35 U.S.C. § 273(a)(3) (1999).

In *Gottschalk v. Benson*, 409 U.S. 63 (1972), the Supreme Court was careful not to limit the definition of process:

It is argued that a process patent must either be tied to a particular machine or apparatus or must operate to change articles or materials to a 'different state or thing.' We do not hold that no process patent could ever qualify if it did not meet the requirements of our prior precedents. *Benson*, 409 U.S. at 71.

In *Parker v. Flook*, 437 U.S. 584, 589 (1978), the Supreme Court was careful not to limit the definition of process: "As in *Benson*, we assume that a valid process patent may issue even if it does not meet one of these qualifications of our earlier precedents." *Flook*, footnote 9.

In *Diamond v. Diehr*, 450 U.S. 175 at 182 (1981), the Supreme Court noted:

In cases of statutory construction, we begin with the language of the statute. Unless otherwise defined, "words will be interpreted as taking their ordinary, contemporary, common meaning," *Perrin v. United States*, 444 U.S. 37, 42, 100 S. Ct. 311, 314, 62 L. Ed. 2d 199 (1979), and, in dealing with the patent laws, we have more than once cautioned that "courts 'should not read into the patent laws limitations and conditions which the legislature has not expressed.'" [Cites omitted.] *Diamond v. Diehr*, 450 U.S. 175 at 182 (1981).

There are several judicially made exceptions: "A principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right." *LeRoy v. Tatham*, 14 How. (55 U.S.) 156, 175. "Here the 'process' claim is so abstract and sweeping as to cover both known and unknown uses of the BCD to pure binary conversion." *Gottschalk v. Benson*, 409 U.S. 63, 68 (1972). "This Court has undoubtedly recognized limits to § 101 and every discovery is not embraced within the statutory terms. Excluded from such patent protection are laws of nature, natural phenomena, and abstract ideas." [Cites omitted.] *Diehr*, 450 U.S. at 185, 101 S. Ct. 1048.

This Court has followed carefully these Supreme Court precedents. As explained in *State Street*, which dealt with system claims reciting "computer processor means":

The plain and unambiguous meaning of § 101 is that any invention falling within one of the four stated categories of statutory subject matter may be patented, provided it meets the other requirements for patentability set forth in Title 35, i.e., those found in §§ 102, 103, and 112, ¶2. [Footnote omitted.]

The repetitive use of the expansive term "any" in § 101 shows Congress's intent not to place any restrictions on the subject matter for which a patent may be obtained beyond those specifically recited in § 101. Indeed, the Supreme Court has acknowledged that Congress intended § 101 to extend to "anything under the sun that is made by man." *Diamond v. Chakrabarty*, 447 U.S. 303, 309,

100 S. Ct. 2204, 65 L. Ed. 2d 144 (1980); see also *Diamond v. Diehr*, 450 U.S. 175, 182, 101 S. Ct. 1048, 67 L. Ed. 2d 155 (1981). Thus, it is improper to read limitations into § 101 on the subject matter that may be patented where the legislative history indicates that Congress clearly did not intend such limitations. See *Chakrabarty*, 447 U.S. at 308 (“We have also cautioned that Courts ‘should not read into the patent laws limitations and conditions which the legislature has not expressed.’” (citations omitted)). [Footnote omitted.]

* * *

The Supreme Court has identified three categories of subject matter that are unpatentable, namely “laws of nature, natural phenomena, and abstract ideas.” *Diehr*, 450 U.S. at 185, 101 S. Ct. 1048.

This Court has developed a test for whether process claims merely set forth an abstract idea. Does the claimed process produce “a useful, concrete, and tangible result”? *In re Alappat*, 33 F.3d 1526 (Fed. Cir. 1994). If so, the claim does not merely set forth an abstract idea.

It has been suggested that the “useful, concrete, and tangible result” test used by this Court is not adequate to distinguish the facts in prior Supreme Court cases, such as *Benson*, *Flook*, and *Diehr*. See *Laboratory Corporation of America Holdings v. Metabolite Laboratories, Inc.*, 548 U.S. 975 (2006) (dissent from denial of certiorari). When properly considered, the “useful, concrete, and tangible result” test is more than adequate and follows directly from analysis of the Supreme Court precedents. The requirement that the process be “useful” is merely

a restatement of statutory language set forth in § 101. The further requirements that the results be “concrete, and tangible” clearly address the underlying concerns of the Supreme Court (1) that the process not claim an idea itself and (2) that it be directed to a particular end use.

The Supreme Court’s major premise throughout the *Benson* opinion is that an “idea itself” is not patentable. Since most patentable inventions originate with an idea (the patent laws recognize inventions as made in two steps, “conception” and “reduction to practice”), what then must be done with a naked idea to alter its substance and character to bring it within the realm of statutory subject matter? Clearly, the Supreme Court believes that it must be adapted and applied to a particular end use and claimed in that particular context.

Note the Supreme Court’s characterization of the *Benson* claims in three separate portions of the opinion:

The *claims* were not limited to any particular art or technology, to any particular apparatus or machinery, or to *any particular end use*. They purported to cover any use of the claimed method in a general-purpose digital computer of any type. *Benson* (409 U.S. at 64).

The patent sought is on a method of programming a general-purpose digital computer to convert signals from binary-coded decimal form into pure binary form. A procedure for solving a given type of mathematical problem is known as an ‘algorithm.’ The procedures set forth in the present *claims* are of that kind; that is to say, they are a *generalized formulation* for programs to solve mathematical problems of converting one form of

numerical representation to another. From the generic formulation, programs may be developed as specific applications. *Benson* (409 U.S. at 65).

Here the 'process' *claim* is so abstract and *sweeping* as to cover both known and unknown uses of the BCD to pure binary conversion. The end use may (1) vary from the operation of a train to verification of driver's licenses to researching the law books for precedents and (2) be performed through any existing machinery or future-devised machinery or without any apparatus." *Benson* (409 U.S. at 68). [Emphasis added.]

The Court in *Benson* further delved into the distinction between Morse's eighth claim and Bell's fifth claim. *O'Reilly v. Morse*, 15 How. (56 U.S.) 62 (1854) (any use of electric current to transmit characters at a distance) and *The Telephone Cases*, 126 U.S. 1 at 531 (1898) (modulating an electric current to form vibrations similar to the sound vibrations in air to transfer vocal sounds). The *Benson* claims were considered the same type of overweening claim struck down in *Morse*. They were not directed to "any particular end use."

As is apparent from the above *Benson* quotations, the Court considered that the claims must be directed to a particular end use and cannot be so generalized and sweeping as to claim the idea itself.

The predecessor to this Court early recognized this as the "fundamental rationale" of *Benson*.

The Supreme Court having expressly refused to extend its *Benson* holding to computer programs generally, 409 U.S. at 71, 93 S. Ct. 253, 175 USPQ at 676, we find no

warrant for our doing so. In view of the Supreme Court's expression in *Benson* that the involved mathematical formula had "no substantial practical application except in connection with a digital computer," 409 U.S. at 71, 93 S. Ct. at 257, 175 USPQ at 676, the fundamental rationale we glean from *Benson* is that a patent containing *Benson's* claims would have preempted all practical use of both the underlying mathematical formula and the involved algorithm. [Footnote omitted.] *In re Chatfield*, 545 F.2d 152 at 155-156 (CCPA 1976), *cert. denied*, 434 U.S. 875 (1977).

The particular end use must not be trivial. In *Flook*, the Court viewed the patent claims as simply providing a new and presumably better method of calculating alarm limit values. The Court stated:

The notion that post-solution activity, no matter how conventional or obvious in itself, can transform an unpatentable principle into a patentable process exalts form over substance. A competent draftsman could attach some form of post-solution activity to almost any mathematical formula; the Pythagorean Theorem would not have been patentable, or partially patentable, because a patent application contained a final step indicating that the formula, when solved, could be usefully applied to existing surveying techniques. *Flook* at 590.

In *Diehr*, the Court viewed the patent claims as directed to a process of molding rubber products and not as an attempt to patent a mathematical formula.

The Court stated:

On the other hand, when a claim containing a mathematical formula implements or applies that formula in a structure or process which, when considered as a whole, is performing a function which the patent laws were designed to protect (e.g., transforming or reducing

an article to a different state or thing), then the claim satisfies the requirements of § 101. *Diehr*, 450 U.S. at 192.

Thus, the “concrete, and tangible” requirements adopted by this Court clearly track the Supreme Court precedents that establish that a process patent claim cannot claim an idea itself but must be adapted and applied to a particular end use and the process must be claimed in that particular context.

IV. FEDERAL CIRCUIT QUESTION 3

Whether the claimed subject matter is not patent-eligible because it constitutes an abstract idea or mental process; when does a claim that contains both mental and physical steps create patent-eligible subject matter?

A claim that recites a “mental step” may set forth patentable subject matter if the result is specific and practical; that is, if the result is “useful, concrete, and tangible.” The mental steps doctrine was buried by the predecessor of this Court in *In re Musgrave*, 431 F.2d 882 (C.C.P.A. 1970). Finding claims to a seismograph exploration method containing only old or no physical steps, Judge Rich stated:

All that is necessary, in our view, to make a sequence of operational steps a statutory ‘process’ of 35 U.S.C. § 101 is that it be in the technological arts so as to be in consonance with the Constitutional purpose to promote the progress of the ‘useful arts.’ Const. Art. 1, sec. 8. *Musgrave*, 893.

The “technological arts” requirement is simply another way of finding that the process has a “useful, concrete, and tangible result” or in the reasoning of *Benson*, *Flook* and *Diehr*, finding that the process is not claimed as a naked idea and is directed to a particular end use. The Patent Office itself has rejected a “technological arts” test as an exclusive test. *Ex parte Lundgren*, 76 USPQ.2d 1385 at 1388 (BPAI 2005).

While *Musgrave* was a pre-*Benson* decision, this Court’s predecessor in a post-*Benson* decision similarly held: “We have thus specifically rejected the broad notion that if a portion of a claim be non-statutory the whole claim is ipso facto non-statutory. The requirement is that the invention set forth in a claim be construed as a whole.” *Chatfield*, 545 F.2d at 158.

Footnote 15 of *In re Comiskey*, 499 F.3d 1365 (Fed. Cir. 2007) reads: “To the extent that language in the [Musgrave] opinion might suggest that mental processes standing alone are patentable, the broad language of the opinion was significantly cabined by *Benson*. See 1 *Chisum on Patents* § 1.03[6][c].”

Whether mental processes standing alone are patentable is not properly an issue with *Bilski* claim 1. The *Bilski* process steps that require entering transactions cannot be performed simply in thought. These steps require communication and negotiation with third parties, to wit, consumers and market participants.

V. FEDERAL CIRCUIT QUESTION 4

Whether a method or process must result in a physical transformation of an article or be tied to a machine to be patent-eligible subject matter under section 101?

Physical transformation or machine implementation are neither necessary nor sufficient requirements for patent-eligible subject matter. They may inform the determination whether the claimed subject matter skirts the prohibited categories of “laws of nature, natural phenomena, and abstract ideas” by demonstrating that a “useful, concrete, and tangible result” is derived from the process. In a claim implicating an “abstract idea,” if the physical transformation or machine implementation expressed in claim limitations is not trivial, the idea itself is not being claimed. In *Benson* and *Flook*, machine implementation could not save the claims which, notwithstanding other limitations, were considered to claim the recited mathematical algorithms. Similarly, the assay step (clearly implicating physical transformation) in the *Laboratory Corporation* case was not considered by the minority sufficient to save the claim. However, in *Diehr*, the curing of a molded rubber article sufficed.

No court has foreclosed from patent-eligible subject matter processes or methods that do not include a physical transformation or a machine implementation.

In *Benson*, the Court stated: "It is argued that a process patent must either be tied to a particular machine or apparatus or must operate to change articles or materials to a 'different state or thing.' We do not hold that no process patent could ever qualify if it did not meet the requirements of our prior precedents." 409 U.S. at 71.

The language of footnote 9 in *Flook* could not be clearer:

The statutory definition of 'process' is broad. See n. 8, *supra*. An argument can be made, however, that this Court has only recognized a process as within the statutory definition when it either was tied to a particular apparatus or operated to change materials to a 'different state or thing.' See *Cochrane v. Deener*, 94 U.S. 780, 787-788, 24 L. Ed. 139. As in *Benson*, we assume that a valid process patent may issue even if it does not meet one of these qualifications of our earlier precedents. 409 U.S. at 71.

However, *Benson* sets forth a test that will apply to all process claims: Is the process "so abstract and sweeping as to cover both known and unknown uses"? 409 U.S. 68. Stated another way, is it "concrete" in the sense that it is not totally general but has a specific and particular application or is the scope of the claim so overweening as to set forth only the idea itself? While physical transformation or machine implementation may help to satisfy this test, these are clearly not the only ways.

Business methods are recognized in the Patent Statute. "[T]he term method means a method of doing or conducting business." 35 U.S.C. § 273(a)(3) (1999).

Business methods are patentable subject matter if not so abstract and sweeping as to cover all known and unknown uses of the underlying ideas. Business methods that contain non-trivial claim provisions limiting the scope of a method to specific and particular applications are patent-eligible under section 101.

VI. FEDERAL CIRCUIT QUESTION 5

Whether it is appropriate to reconsider *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998), and *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352 (Fed. Cir. 1999), in this case and, if so, whether those cases should be overruled in any respect?

The holdings in both *State Street* and *AT&T* support the patentability of the Bilski claim. Both cases are based on the Statute as properly interpreted in light of legislative history and the Supreme Court precedent. They should not be modified in any respect.

Moreover, they need not be modified to reverse the decision of the Patent Office Board of Appeals and Interferences in this case. No reasonable interpretation of those decisions would support the Board's view that the "useful, concrete, and tangible result" test is limited to claims to machines and machine implemented processes. (See Bilski's main brief, pages 10-11.)

Since this Court decided *State Street* almost 10 years ago, the Patent and Trademark Office has generally followed that decision issuing many patents. To

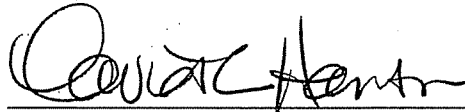
modify the holdings of *State Street* and *AT&T* would throw into question the validity of many unexpired patents on which patentees have relied in establishing business plans. cf. *Warner-Jenkinson Co. v. Hilton Davis Chem. Co.*, 520 U.S. 17, 32 n. 6 (1997). ("To change so substantially the rules of the game now could very well subvert the various balances the PTO sought to strike when issuing the numerous patents which have not yet expired and which would be affected by our decision.")

Congress has the constitutional authority to define statutory subject matter. Among all the issues presently under consideration for revision of the Patent Statutes, none is directed to elimination of business method patents generally. (The elimination of tax avoidance methods is under consideration.) It is said that the Patent and Trademark Office seeks to narrow the scope of statutory subject matter to reduce its workload. If this is a proper public policy objective, it should only be dealt with by the legislature and not by the executive branch or the courts.

VII. CONCLUSION

For the reasons set forth, it is respectfully requested that this Court reverse the Board's rejection of the Bilski claims.

Respectfully submitted,

A handwritten signature in dark ink, appearing to read "David C. Hanson", written over a horizontal line.

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CERTIFICATE OF FILING AND SERVICE

I hereby certify that on this 6th day of March, 2008, I hand-filed the original and thirty copies of the foregoing APPELLANTS' SUPPLEMENTAL BRIEF PURSUANT TO THE COURT'S ORDER OF FEBRUARY 15, 2008 with the Clerk's Office of the United States Court of Appeals for the Federal Circuit, and further certify that I served, via U.S. Mail, two copies of said brief to the following:

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**SUPPLEMENTAL BRIEF OF APPELLEE DIRECTOR OF THE
UNITED STATES PATENT AND TRADEMARK OFFICE
FOR HEARING *EN BANC***

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

FILED
U.S. COURT OF APPEALS FOR
THE FEDERAL CIRCUIT

MAR 06 2008

JAN HORBALY
CLERK

Appeal No. 2007-1130
(Serial No. 08/833,892)

IN RE BERNARD L. BILSKI and RAND A. WARSAW

Appeal from the United States Patent and Trademark Office,
Board of Patent Appeals and Interferences.

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Representative Claim

1. 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 consumer;

(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.

A198.

TABLE OF CONTENTS

ISSUES PRESENTED	1
ARGUMENT	2
A. INTRODUCTION	2
B. The Board Correctly Rejected Bilski’s Claim 1 for Failing to Claim Patent-Eligible Subject Matter Under 35 U.S.C. § 101 (Question 1)	4
C. <i>Diamond v. Diehr</i> Provides the Governing Standard for Determining Whether a “Process” Is Patent-Eligible Under Section 101 (Question 2)	6
1. A Section 101 “Process” Must Either Be Tied to a Particular Apparatus or Transform an Article to a Different State or Thing	6
2. A Patent-Eligibility Inquiry Also Requires Evaluating Whether the Claim Impermissibly Seeks to Patent an Abstract Idea, Law of Nature, or Natural Phenomenon	14
D. Bilski’s Claim 1 Constitutes a Disembodied Abstract Idea (Question 3)	17
E. A Section 101 “Process” Must Result in a Physical Transformation of an Article OR Be Tied to a Particular Machine; However, the Definition for “Process” Should Remain Flexible to Accommodate Future Technologies (Question 4)	25

F.	This Court Should Clarify <i>State Street</i> and <i>AT&T</i> to the Extent They Have Been Read Inconsistently with Supreme Court Precedents (Question 5)	25
CONCLUSION		33

TABLE OF AUTHORITIES

<u>CASES</u>	<u>PAGE</u>
<i>Alappat, In re</i> , 33 F.3d 1526 (Fed. Cir. 1994) (en banc)	12, 15, 16
<i>Arrhythmia Research Tech., Inc., v. Corazonix Corp.</i> , 958 F.2d 1053 (Fed. Cir. 1992)	19
<i>Astoria Federal Sav. and Loan Ass'n v. Solimino</i> , 501 U.S. 104 (1991)	8
<i>AT&T Corp. v. Excel Communications, Inc.</i> , 172 F.3d 1352 (Fed. Cir. 1999)	<i>passim</i>
<i>Bergy, In re</i> , 596 F.2d 952 (CCPA 1979)	10
<i>Cochrane v. Deener</i> , 94 U.S. 780 (1876)	3, 7, 13, 30
<i>Comiskey, In re</i> , 499 F.3d 1365 (Fed. Cir. 2007)	<i>passim</i>
<i>Corning v. Burden</i> , 56 U.S. (15 How.) 252 (1853)	7, 13, 19
<i>Diamond v. Chakrabarty</i> , 447 U.S. 303 (1980)	10
<i>Diamond v. Diehr</i> , 450 U.S. 175 (1981)	<i>passim</i>
<i>Expanded Metal Co. v. Bradford</i> , 214 U.S. 366 (1909)	13
<i>Funk Brothers Seed Co. v. Kalo Inoculant Co.</i> , 333 U.S. 127 (1948)	20

<i>Gottschalk v. Benson</i> , 409 U.S. 63 (1972)	<i>passim</i>
<i>Grams, In re</i> , 888 F.2d 835 (Fed. Cir. 1989)	12, 14, 31
<i>Hotel Security Checking Co. v. Lorraine Co.</i> , 160 F. 467 (2d Cir. 1908)	23
<i>KSR Int'l Co. v. Teleflex Inc.</i> , 127 S.Ct. 1727 (2007)	10
<i>Laboratory Corp. of Am. Holdings v. Metabolite Labs., Inc.</i> , 26 S. Ct. 2921 (2006)	15, 31
<i>Lizard Tech. Inc. v. Earth Resource Mapping, Inc.</i> , 424 F.3d 1336 (Fed. Cir. 2005)	19
<i>Maucorps, In re</i> , 609 F.2d 481 (CCPA 1979)	12
<i>Meyer, In re</i> , 688 F.2d 789 (CCPA 1982)	12
<i>Musgrave, In re</i> , 431 F.2d 882 (CCPA 1970)	10
<i>Nuijten, In re</i> , 500 F.3d 1346 (Fed. Cir. 2007)	16, 27
<i>O'Reilly v. Morse</i> , 56 U.S. (15 How.) 62 (1854)	<i>passim</i>
<i>Parker v. Flook</i> , 437 U.S. 584 (1978)	<i>passim</i>
<i>Patton, In re</i> , 127 F.2d 324 (CCPA 1942)	23
<i>Rubber-Tip Pencil Co. v. Howard</i> , 87 U.S. (20 Wall.) 498 (1874)	17

<i>Schrader, In re</i> , 22 F.3d 290 (Fed. Cir. 1994)	8, 12, 26, 29
<i>State Street Bank & Trust Co. v. Signature Financial Group, Inc.</i> , 149 F.3d 1368 (Fed. Cir. 1998)	<i>passim</i>
<i>The Telephone Cases</i> , 126 U.S. 1 (1888)	13, 20
<i>Tilghman v. Proctor</i> , 102 U.S. 707 (1880)	13, 18, 19
<i>Toma, In re</i> , 575 F.2d 872 (CCPA 1978)	10
<i>University of Rochester v. G.D. Searle & Co., Inc.</i> , 358 F.3d 916 (Fed. Cir. 2004)	19

STATUTES

35 U.S.C. § 101	<i>passim</i>
35 U.S.C. § 100(b)	29

OTHER AUTHORITIES

Daniel Defoe, <i>A General History of Discoveries and Improvements in Useful Arts</i> (1727)	11
George Logan, M.D., <i>A Letter to the Citizens of Pennsylvania, on the Necessity of Promoting Agriculture, Manufactures, and the Useful Arts</i> (1800)	11
Karl B. Lutz, <i>Patents and Science</i> , 18 Geo. Wash. L. Rev. 50, 54 (1949)	11

Tench Coxe, *An Address to an Assembly of the Friends of American
Manufactures, in Calling for More Domestic Manufacturing* (1787) 11

W. Kenrick, *An Address to the Artists and Manufacturers of Great
Britain* (1774) 11

**SUPPLEMENTAL BRIEF OF APPELLEE DIRECTOR OF THE
UNITED STATES PATENT AND TRADEMARK OFFICE
FOR HEARING *EN BANC***

UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

Appeal No. 2007-1130
(Serial No. 08/833,892)

IN RE BERNARD L. BILSKI and RAND A. WARSAW

Appeal from the United States Patent and Trademark Office,
Board of Patent Appeals and Interferences.

ISSUES PRESENTED

The Court's February 15, 2008, Order requests the parties to address the following five questions:

1. Whether claim 1 of the 08/833,892 patent application claims patent-eligible subject matter under 35 U.S.C. § 101?
2. What standard should govern in determining whether a process is patent-eligible subject matter under section 101?

3. Whether the claimed subject matter is not patent-eligible because it constitutes an abstract idea or mental process; when does a claim that contains both mental and physical steps create patent-eligible subject matter?
4. Whether a method or process must result in a physical transformation of an article or be tied to a machine to be patent-eligible subject matter under section 101?
5. Whether it is appropriate to reconsider *State Street Bank & Trust Co. v. Signature Financial Group, Inc.*, 149 F.3d 1368 (Fed. Cir. 1998), and *AT&T Corp. v. Excel Communications, Inc.*, 172 F.3d 1352 (Fed. Cir. 1999), in this case and, if so, whether those cases should be overruled in any respect?

Consistent with our principal brief, the USPTO maintains that Bilski's claim 1 fails to recite patent-eligible subject matter. Moreover, this supplemental brief explains how *State Street* and *AT&T* should be clarified to be consistent with Supreme Court precedents.

ARGUMENT

A. INTRODUCTION

The scope of patent-eligible subject matter is generally quite broad. *See* 35 U.S.C. § 101 (listing "process, machine, manufacture, or composition of matter" as categories eligible for patent protection). Over the course of this country's history, the USPTO has witnessed first-hand how that broad understanding of

patent-eligibility has been critical to helping numerous new technologies flourish, including telecommunications, biotechnology, as well as the computer/electronics area. In turn, patent law should continue accommodating new technological products and processes in the future. But at the same time, the Supreme Court's case law is very clear that the statutory category "process" does not encompass any and all human activities. Rather, the Supreme Court has recognized only two instances in which a method may qualify as a section 101 process: when the process "either was tied to a particular apparatus or operated to change materials to a 'different state or thing.'" *Parker v. Flook*, 437 U.S. 584, 588 n.9 (1978) (quoting *Cochrane v. Deener*, 94 U.S. 780, 787-88 (1876)).

This Court should clarify the meaning of *State Street* and *AT&T*, as they have been too often misunderstood to mean that any innovation with a beneficial effect is automatically patent-eligible. Such an analytical rubric eviscerates long-standing principles of subject matter eligibility, and collapses the eligibility inquiry into nothing more than a question of utility. To clarify the law, the Supreme Court's principles on eligibility should be reaffirmed.

B. The Board Correctly Rejected Bilski's Claim 1 for Failing to Claim Patent-Eligible Subject Matter Under 35 U.S.C. § 101 (Question 1)

Bilski's claim 1 calls for a commodity provider to enter into two sets of commodity transactions in which the second set of transactions "balances," *i.e.*, hedges, the risk position taken by the commodity provider in the first set of transactions:

1. 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 consumer;

(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.

A198¹.

¹ References to the Joint Appendix are designated "A __", references to Bilski's Brief are designated "Bilski Br. at __", references to AIPLA's brief

As we explained in our principal brief, Bilski's method claim is not a section 101 "process," because it is not machine-implemented, nor does it transform any article to a different state or thing. USPTO Br. at 33-35. A statutory "process" must meet one of those two requirements. *See infra*. While Bilski's claim is broad enough to encompass a computer-driven embodiment to determine the proper fixed rates for the recited transactions, the claim is not limited to such an embodiment. Instead, the claim is so broad as to include a non-machine implemented method in which human beings negotiate and enter into commodity contracts. Moreover, the creation of intangible legal obligations is far different from the transformation of articles contemplated by the Supreme Court cases.

Alternatively, the Board also determined that Bilski's claim constitutes the disembodied abstract concept of hedging the consumption risk cost of a commodity. In other words, the claim fails to recite a practical application of that concept, as further explained below. While Bilski's claim may yield a beneficial result to the parties participating in the transactions, a proper section 101 analysis is not driven solely by usefulness.

are designated "AIPLA Br. at ____", and references to the Director's Brief are designated "USPTO Br. at ____".

C. *Diamond v. Diehr* Provides the Governing Standard for Determining Whether a “Process” Is Patent-Eligible Under Section 101 (Question 2)

For a process to be deemed patent-eligible under section 101, *Diamond v. Diehr*, 450 U.S. 175 (1981) requires that two *separate* inquiries must take place. First, the claim must qualify as a “process,” as that term has been interpreted by the courts. *Id.* at 181-84. Second, even if the claim satisfies the Supreme Court’s definition for “process,” the claim must then be evaluated for whether it is for an abstract idea, natural phenomenon, or law of nature. *Id.* at 185-93.

1. A Section 101 “Process” Must Either Be Tied to a Particular Apparatus or Transform an Article to a Different State or Thing

Contrary to Bilski’s and AIPLA’s assertions that a section 101 process can simply be “a plurality of steps” (Bilski Br. at 9) or any “method” (AIPLA Br. at 6), the courts have rejected such an interpretation. In fact, the Supreme Court has pointed out that its decisions have foreclosed an ordinary, dictionary reading of “process.” *See Flook*, 437 U.S. at 589 (“The holding that the discovery of that [Benson’s] method could not be patented as a ‘process’ forecloses a purely literal reading of § 101.”).

In *Diehr* the Supreme Court performed a lengthy statutory construction treatment of the term “process” in section 101. *Diehr*, 450 U.S. at 181-84. The

Supreme Court noted that the term “process” was not formally a category of statutory subject matter until 1952 when Congress inserted that term in section 101 in exchange for the word “art.” *Id.* at 182. Nevertheless, a number of Supreme Court cases, dating back to the 19th century, recognized that processes were patent-eligible because they were considered a form of “art” as that term was used in the 1793 Patent Act. *See id.* at 182. After quoting passages from those earlier cases² expounding on the long-standing meaning of “process,” the *Diehr* Court concluded that the 1952 Patent Act essentially codified the Court’s pre-existing definition of that term: “Analysis of the eligibility of a claim of patent protection for a ‘process’ did not change with the addition of that term to § 101.” *Id.* at 184. And the Court repeated the definition of “process” it had recently given in *Gottschalk v. Benson*, 409 U.S. 63 (1972): “Transformation and reduction of an article ‘to a different state or thing’ is the clue to the patentability of a process claim that does not include particular machines.” *Diehr*, 450 U.S. at 184 (quoting *Benson*, 409 U.S. at 70).³

² *Corning v. Burden*, 56 U.S. (15 How.) 252 (1853), and *Cochrane*, 94 U.S. at 788.

³ *See also Flook*, 437 U.S. at 588 n.9 (“this Court has only recognized a process as within the statutory definition when it either was tied to a particular apparatus or operated to change materials to a ‘different state or thing.’”) (citing *Cochrane*, 94 U.S. at 787-88).

This Court recently quoted with approval this test from *Diehr* as the standard for a statutory process. *See In re Comiskey*, 499 F.3d 1365, 1377 (Fed. Cir. 2007) (request for rehearing *en banc* pending) (quoting same test from *Diehr*). In addition, in *In re Schrader*, 22 F.3d 290 (Fed. Cir. 1994), this Court had previously embraced the *Diehr* Court's interpretation of "process," coming to the independent conclusion that Congress incorporated the Supreme Court's already established meaning of "process" into the 1952 Patent Act. *Id.* at 295-96 (citing *Astoria Federal Sav. and Loan Ass'n v. Solimino*, 501 U.S. 104, 106-08 (1991) as standing for the "presumption that well-established common law principles are left unchanged by statutory enactment."); *see also id.* at 295 n.11. Accordingly, this Court and the Supreme Court have the same requirements for a method claim to qualify as a statutory "process."

The Supreme Court has also indicated, however, that its current test for a section 101 process is not necessarily forever fixed or permanent:

It is argued that a process patent must either be tied to a particular machine or apparatus or must operate to change articles or materials to a 'different state or thing.' We do not hold that no process patent could ever qualify if it did not meet the requirements of our prior precedents.

Benson, 409 U.S. at 71. Rather, the Court made clear that it could be open to revisiting the standard if a new, unforeseen technology warranted an exception to its test. *Id.* (explaining that it did not wish to “freeze process patents to old technologies, leaving no room for the revelations of new, onrushing technology.”). The long-standing *Diehr* test for processes, however, has provided a reliable, workable set of legal principles, and nothing in *Bilski*’s claimed commodity transactions suggests that this case would be the time to depart from the *Diehr* test to make room for methods of creating legal obligations.

Moreover, as we suggested in our principal brief (USPTO Br. at 27-28), the Supreme Court’s construction of “process” appropriately keeps the scope of that statutory category *in pari materia* with the other three categories of inventions – manufacture, machine, and composition of matter. Indeed, *Comiskey* expressly recognized a direct relationship between “process” and the other categories, observing that a method claim recites statutory subject matter only if “it is embodied in, operates on, transforms, or otherwise involves another class of statutory subject matter, *i.e.*, a machine, manufacture, or composition of matter.” *Comiskey*, 499 F.3d at 1376 (restating the Supreme Court’s transformation or tied to a particular apparatus test for “process”).

As the *Comiskey* court observed, such an interpretation advances the Congressional and Constitutional intention that the patent system be directed to protecting technological innovations. *See id.* at 1375, 1378-79. Although this Court's predecessor held that the question whether an invention is in the "technological arts" does not by itself constitute the test for patent-eligibility under section 101 (*see In re Toma*, 575 F.2d 872 (CCPA 1978)), the technological focus of the Patent Act and the Patent Clause informs the outer limits of subject matter eligibility under section 101. *See In re Bergy*, 596 F.2d 952, 959 (CCPA 1979) ("[T]he present day equivalent of the term 'useful arts' employed by the Founding Fathers is 'technological arts'" (citing *In re Musgrave*, 431 F.2d 882, 893 (CCPA 1970)), *vacated*, 444 U.S. 1028 (1980), *aff'd sub nom.*, *Diamond v. Chakrabarty*, 447 U.S. 303 (1980).

The Supreme Court recently reaffirmed that patents may issue only for those innovations that promote "the progress of useful arts." *KSR Int'l Co. v. Teleflex Inc.*, 127 S.Ct. 1727, 1746 (2007). In this regard, usages of the term "useful arts" contemporaneous with the framing of the Constitution uniformly tie "useful arts" to manufactures and manufacturing processes, thereby providing strong support

for the notion that “process” must be interpreted in parity with the other statutory categories.⁴

Against this background, it is unlikely that Congress intended the boundaries of “process” to be so expansive as to accommodate all methods that have a use. Rather, this Court should adhere to the rule that, at least absent the development of some hitherto unknown type of technology, “[t]ransformation and reduction of an article ‘to a different state or thing’ is the clue to the patentability of a process claim that does not include particular machines.” *Diehr*, 450 U.S. at 184 (quoting *Benson*, 409 U.S. at 70). Just as with *Comiskey*’s disembodied arbitration method, therefore, *Bilski*’s method of initiating commodities contracts should likewise be rejected for failing to recite a statutory process. *See Comiskey*,

⁴ *See generally* Daniel Defoe, *A General History of Discoveries and Improvements in Useful Arts* (1727) (providing a history of technological developments from biblical times); W. Kenrick, *An Address to the Artists and Manufacturers of Great Britain* (1774) (contrasting the “useful arts” with the “polite arts”); Tench Coxe, *An Address to an Assembly of the Friends of American Manufactures, in Calling for More Domestic Manufacturing* (1787), at 17 (tying “useful arts” to manufactures); *id.* at 18 (describing progress in the useful arts as having produced improvements in numerous kinds of manufactures, from ships to whips to watches); George Logan, M.D., *A Letter to the Citizens of Pennsylvania, on the Necessity of Promoting Agriculture, Manufactures, and the Useful Arts* (1800) 12-13 (tying “useful arts” to manufacturing processes, and observing the connection between a country’s prosperity and the progress in the useful arts); Karl B. Lutz, *Patents and Science*, 18 Geo. Wash. L. Rev. 50, 54 (1949) (“The term ‘useful arts,’ as used in the Constitution . . . is best represented in modern language by the word ‘technology.’”).

499 F.3d at 1378 (discussing *In re Meyer*, 688 F.2d 789, 796 (CCPA 1982), and *In re Maucorps*, 609 F.2d 481 (CCPA 1979)); *see also In re Alappat*, 33 F.3d 1526, 1541 (Fed. Cir. 1994) (en banc) (“*Maucorps* dealt with a business method for deciding how salesmen should best handle respective customers and *Meyer* involved a ‘system’ for aiding a neurologist in diagnosing patients. Clearly, neither of the alleged ‘inventions’ in those cases falls within any § 101 category.”); *Schrader*, 22 F.3d at 293-95 (holding a non-machine implemented method for bidding on items not a patent-eligible process under section 101).

Whether a method is appropriately “tied to a particular apparatus” to qualify as a section 101 process may not always be a straightforward inquiry. As *Comiskey* recognized, “the mere use of the machine to collect data necessary for application of the mental process may not make the claim patentable subject matter.” *Comiskey*, 499 F.3d at 1380 (citing *In re Grams*, 888 F.2d 835, 839-40 (Fed. Cir. 1989)); *see also* A25-26 (“Incidental physical limitations, such as data gathering, field of use limitations, and post-solution activity are not enough to convert an ‘abstract idea’ into a statutory ‘process.’”). In other words, nominal or token recitations of structure in a method claim should not convert an otherwise ineligible claim into an eligible one. For the same reason, claims reciting incidental physical transformations also may not pass muster under section 101.

To permit such a practice would exalt form over substance and permit claim drafters to file the sort of process claims not contemplated by the case law.

In *Benson*, the Court reviewed the facts of several of its precedents dealing with process patents before drawing the conclusion that “transformation” is the clue to patent-eligibility “of a process claim that does not include *particular machines*.” *Benson*, 409 U.S. at 68-71 (emphasis added). Of the cases discussed, *Corning* (tanning and dyeing), *Cochrane* (manufacturing flour), *Tilghman v. Proctor*, 102 U.S. 707 (1880) (manufacturing fat acids), and *Expanded Metal Co. v. Bradford*, 214 U.S. 366 (1909) (expanding metal), can all fairly be read to involve transformation of some article or material to a different state or thing. *Id.* at 69-70. *Benson* also compared *O’Reilly v. Morse*, 56 U.S. (15 How.) 62 (1854), to *The Telephone Cases*, 126 U.S. 1 (1888), reasoning that Morse’s eighth claim was disallowed because it failed to recite any machinery for carrying out the printing of characters at a distance, instead simply claiming the use of “electromagnetism, however developed” for that purpose. In contrast, Bell’s claim in *The Telephone Cases* recited certain specified conditions for using a particular circuit for the transmission of sounds. *Benson*, 409 U.S. at 68-69.

These cases illustrate process claims where the recited machines played a central role in generating a useful result. In direct contrast, human-driven methods

that merely recite a device that is insignificant to accomplishing the method (like the claim in *Grams*) and do not transform any article should not be recognized as a “process” claim similar to the above-cited cases. *See Diehr*, 450 U.S. at 191-92 (“insignificant post-solution activity will not transform an unpatentable principle into a patentable process. To hold otherwise would allow a competent draftsman to evade the recognized limitations on the type of subject matter eligible for patent protection.”)

We acknowledge that it will not always be simple to draw the line between a statutory process appropriately “tied to a particular apparatus” and a nonstatutory method with nominal recitations of structure, but such an inquiry is necessary to prevent clever claim drafting from circumventing the principles underlying the Supreme Court’s interpretation for “process.”

2. A Patent-Eligibility Inquiry Also Requires Evaluating Whether the Claim Impermissibly Seeks to Patent an Abstract Idea, Law of Nature, or Natural Phenomenon

Diehr also makes clear that determining that a method meets the test for a statutory “process” is only the end of the first part of the section 101 inquiry. A second, separate inquiry must take place to ensure that the claim is not merely for an abstract idea, law of nature, or natural phenomenon. *Diehr*, 450 U.S. at 185;

see also *Laboratory Corp. of Am. Holdings v. Metabolite Labs., Inc.*, 126 S. Ct. 2921, 2927-2928 (2006) (Breyer, J., dissenting). That is, the claim must be for a practical application of that abstract idea, law of nature, or natural phenomenon in a structure or process. *See Diehr*, 450 U.S. at 192. Importantly, in making this second, separate assessment, the “claims must be considered as a whole. It is inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements in the analysis.” *Id.* at 188.

Applying this two-step inquiry to the facts of *Diehr*, the Supreme Court first determined that the claimed invention satisfied the test for a statutory “process” because it “involve[d] the transformation of an article, in this case raw, uncured synthetic rubber, into a different state or thing.” *Id.* at 184. Second, the Court still had to determine whether the patent owner impermissibly sought to patent a mathematical formula recited in the process claim. *Id.* at 187. Rather than “pre-empt that equation,” the Court reasoned that the claim recited a practical application of that equation because it sought only to foreclose the use of that equation in conjunction with a series of steps for curing rubber. *Id.*

In addition, this Court has followed this two-step inquiry for section 101 eligibility in both *Alappat* and *State Street*, in each case first determining that the claimed subject matter fell within the “machine” category, and then concluding

that neither machine claim sought to impermissibly patent an abstract idea. *See Alappat*, 33 F.3d at 1541-45, and *State Street*, 149 F.3d at 1371-75. Accordingly, Bilski is mistaken in believing that the only relevant question to a section 101 analysis is whether his claim is for an abstract idea. *See, e.g., In re Nuijten*, 500 F.3d 1346, 1354 (Fed. Cir. 2007) (“The claim must be within at least one category, so the court can proceed to *other aspects* of the § 101 analysis.”) (Emphasis added).⁵

As explained below in answering Question 3 of this Court’s Order, Bilski’s claim not only fails to meet the test for “process,” it also recites nothing more than an abstract idea.

⁵ In some cases, potentially arising under either section 101 or section 103, it may also be necessary to examine whether the claimed invention, although described in formal terms as a machine application of an abstract idea, falls outside the category of technological innovations susceptible of patent protection, for example when the advance over the prior art on which the applicant relies involves only an advance in a field of endeavor such as law (as in *Comiskey*), marketing, or other liberal (as opposed to “useful”) arts. *Cf. Comiskey*, 499 F.3d at 1380 (“The routine addition of modern electronics to an otherwise unpatentable invention typically creates a prima facie case of obviousness.”). There is no need to address that question in this case, because Bilski does not limit his claims to a machine application of his abstract idea.

D. Bilski's Claim 1 Constitutes a Disembodied Abstract Idea (Question 3)

For the reasons given in our principal brief (USPTO Br. at 36-42), Bilski's claim 1 is not patent-eligible for the alternative reason that it runs afoul of the abstract idea exception. The claimed method impermissibly encompasses the abstract principle of having one set of commodity transactions "balance[] the risk position" taken in a second set of commodity transactions, giving no indication of how that result would be accomplished. In other words, the claim covers *any* means, however developed, for initiating the two sets of transactions that are said to "balance" each other. Because a type of contract is an abstract concept, a claim merely calling for the formation of such a contract, should not be patent-eligible, simply by being re-styled as a "process" claim.

"Excluded from . . . patent protection are laws of nature, natural phenomena, and abstract ideas." *Diehr*, 450 U.S. at 185. "An idea of itself is not patentable." *Diehr*, 450 U.S. at 185 (quoting *Rubber-Tip Pencil Co. v. Howard*, 87 U.S. (20 Wall.) 498, 507 (1874)); *Benson*, 409 U.S. at 67 ("[M]ental processes, and abstract intellectual concepts are not patentable."); *see also id.* at 71 ("It is conceded that one may not patent an idea."). In the case where a claim is for a process, as opposed to a product, "[t]he line between a patentable 'process' and an unpatentable 'principle' is not always clear. Both are 'conception[s] of the mind,

seen only by [their] effects when being executed or performed.” *Flook*, 437 U.S. at 589 (quoting *Tilghman*, 102 U.S. at 728).

In *Morse*, the Supreme Court concluded that Morse’s eighth claim impermissibly crossed “the line” between a patent-eligible process and an ineligible abstract principle. Morse’s eighth claim recites:

I do not propose to limit myself to the specific machinery or parts of machinery described in the foregoing specification and claims; *the essence of my invention being the use of motive power of the electric or galvanic current, which I call electro-magnetism, however developed for marking or printing intelligible characters, signs, or letters, at any distances*, being a new application of that power of which I claim to be the first inventor or discoverer.

Id. at 112 (emphasis added). Morse’s eighth claim thus sought to patent the concept of using electro-magnetism, not confined to any means, to produce the useful result of printing intelligible marks at a distance. The Supreme Court disallowed that claim, concluding that it would pre-empt all possible means of accomplishing the intended result:

If this claim can be maintained, *it matters not by what process or machinery the result is accomplished*. For aught that we now know some future inventor, in the onward march of science, may discover a mode of writing or printing at a distance by means of the electric or galvanic current, without using any part of the process or combination set forth in the plaintiff’s specification. . . . But yet if it is covered by this patent the inventor could not use it, nor the public have the benefit of it without the permission of this patentee.

Id. at 113. As the Court later explained in *Tilghman*, “[t]he eighth claim of Morse’s patent was held to be invalid, because it was regarded by the court as being *not for a process, but for a mere principle.*” *Tilghman*, 102 U.S. at 726 (emphasis added). By failing to recite any particular means for producing the resulting printed marks, Morse’s eighth claim was for an ineligible abstract principle rather than a patent-eligible process.⁶ See also *Diehr*, 450 U.S. at 182 n.7 (“It is for the discovery or invention of some practical method or means of producing a beneficial result or effect, that a patent is granted, and not for the result or effect itself.”) (quoting *Corning*, 56 U.S. at 268).

Moreover, in *Benson*, the Supreme Court explained that the lesson from *Morse* was that “the use of magnetism as a motive power, without regard to the particular process with which it was connected in the patent, could not be claimed, but that its use in that connection could.” *Benson*, 409 U.S. at 68 (quoting *The Telephone Cases*, 126 U.S. at 534). In contrast, Bell’s claimed method “was not

⁶ *Morse* has been regarded in case law as a forerunner of the written description requirement in 35 U.S.C. § 112, as well as a patent-eligibility case. Compare *Lizard Tech. Inc. v. Earth Resource Mapping, Inc.*, 424 F.3d 1336, 1345 (Fed. Cir. 2005) (§ 112); *University of Rochester v. G.D. Searle & Co., Inc.*, 358 F.3d 916, 929 (Fed. Cir. 2004) (§ 112), with *Benson*, 409 U.S. at 68 (§ 101); *Tilghman*, 102 U.S. at 726 (§ 101) and *Arrhythmia Research Tech., Inc. v. Corazonix Corp.*, 958 F.2d 1053, 1059 (Fed. Cir. 1992) (§ 101).

one for all telephonic use of electricity,” but instead recited certain specified conditions for a particular circuit to produce the desired result of transmitting sounds. *Benson*, 409 U.S. at 69. Thus, Bell’s invention was for a process – a particular application of the abstract principle of using electricity for telephones. Morse’s eighth claim, on the other hand, was impermissibly for the principle itself of using electro-magnetism for printing intelligible marks.

Accordingly, “[i]t is now commonplace that an *application* of a law of nature or [abstract idea] to a known structure or process may well be deserving of patent protection.” *Diehr*, 450 U.S. at 187 (italics in original). “If there is to be an invention from such a discovery, it must come from the application of the law of nature to a new and useful end.” *Benson*, 409 U.S. at 67 (quoting *Funk Brothers Seed Co. v. Kalo Inoculant Co.*, 333 U.S. 127, 130 (1948)). This judicial exception doctrine highlights that patent-eligible inventions should harness a law of nature or abstract idea for a particular application rather than seek to patent the law of nature or idea itself.

In *Benson*, the Court found that the claimed “method for converting binary-coded decimal (BCD) numerals into pure binary numerals” pre-empted an abstract idea, in that case, a mathematical algorithm. *Id.* at 64. The Court’s concern was

rooted in the expansive nature of the claim, which was not limited to any particular apparatus or end use:

Here, the “process” claim is so abstract and sweeping as to cover both known and unknown uses of the BCD to pure binary conversion. The end use may (1) vary from the operation of a train to verification of drivers’ licenses to researching the law books for precedents and (2) be performed through any existing machinery or future-devised machinery or without any apparatus.

Id. at 68. Much as “one may not patent an idea,” the Court concluded that Benson could not patent the formula for converting BCD numerals to pure binary form.

Id. at 71. While the claim did not merely recite a theoretical formula, but rather recited a series of steps using that formula, the Court nevertheless ruled that the claim “would wholly pre-empt the mathematical formula and in practical effect would be a patent on the algorithm itself.” *Id.* at 72.

The term “abstract idea” has been used in different ways depending on the context in a given case. For example, in *Benson*, the Court regarded the claim as for an abstract idea because it sought to patent a mathematical formula (409 U.S. at 71-72), even though one of the claims at issue used a machine to conduct the calculation. This Court in *State Street* faced a similar abstract idea question, where it had to address whether an algorithm performed by a machine was nothing more than an abstract idea without any particular useful application. The *Benson*

court also noted, as was true of another claim at issue, that it was “so abstract and sweeping” as to cover any use of BCD to pure binary conversion, *by any means*. *Id.* at 68. This appears to be another use of abstraction that is not fully answered by whether the result reached is practical. Similarly, the *Flook* court concluded that the claim (1) merely recited the steps for solving a formula, but also saw the claim as (2) reserving a formula in a field with no integration into the claim of any particular machine or transformation. *Flook*, 437 U.S. at 586; *see also Morse*, 56 U.S. at 113. While *Bilski*’s claim does not recite a formula, it nonetheless suffers from the latter problem described above regarding *Flook* and *Benson*, in that the claimed hedge scheme likewise seeks to appropriate the concept of hedging in a certain field, however it is implemented. Regardless of the changing reference point for how “abstract idea” has been used, the analysis for eligibility remains the same in that one may not patent the abstract idea itself, or pre-empt substantially every application of that abstract idea.

Given that *Bilski*’s claim is untethered from any means for carrying out his hedging concept of balancing two sets of transactions, his claim in practical effect would be a patent on the idea itself, rather than an application of that idea.

Longstanding case law suggests that a business method is directed to an abstract idea when there is no substantive means for carrying out the method. For

example, in *In re Patton*, 127 F.2d 324 (CCPA 1942), this Court's predecessor observed that "it is sufficient to say that a system of transacting business, *apart from the means for carrying out such system*, is not within the purview of [the predecessor to section 101], nor is an abstract idea or theory, regardless of its importance or the ingenuity with which it was conceived, apart from the means for carrying such idea or theory into effect, patentable subject matter." *Id.* at 327-28 (emphasis added). One hundred years ago, the Second Circuit reached the same conclusion: "In the sense of patent law, an art [process] is not a mere abstraction. A system of transacting business disconnected from the means for carrying out the system is not, within the most liberal interpretation of the term, an art [process]." *Hotel Security Checking Co. v. Lorraine Co.*, 160 F. 467, 469 (2d Cir. 1908). And in *State Street*, this Court recognized this limiting principle on patent-eligibility, while also noting that it should not be read to exclude *all* business methods. *Id.*, 149 F.3d at 1376 n.15

In the Court's Order, the Court specifically raises the question of patent-eligibility for a method claim comprising mental and physical steps. In our view, such a claim may be ineligible, not necessarily because it recites mental and physical steps, but if it fails to transform an article nor is it implemented by a machine. In other words, if such a method claim recited steps causing the

transformation of an article or is tied to an apparatus (and not in an insignificant way), then the presence of a mental step in the claim by itself should not defeat eligibility. Rather, the claim must be considered as a whole when evaluating its eligibility. *Diehr*, 450 U.S. at 188. Furthermore, pre-emption must also be considered to ensure that a claim, even one that recites an apparatus, is not written so broadly as to preempt an abstract idea. *See, e.g., Benson*, 409 U.S. at 71-72.

Thus, regarding *Bilski*'s claims as improperly abstract is an alternative basis for the USPTO's position that the claims do not fall into any statutory category. Generally, claims that qualify as a statutory process will in all likelihood also be for a practical application of an abstract idea because the claimed method will be limited to a step(s) for transforming matter or an operation(s) performed by a particular apparatus. In such instances, the question of abstractness will be generally answered according to some test for practical effect such as articulated by this Court in *State Street*. Here, however, even if the result is regarded as practical, the claim recites merely an idea, seeks simply to reserve that idea in a particular field of endeavor regardless of the means, technological or not, of implementing it, and is, under the applicable precedents, abstract.

We recognize the challenge that will often arise in identifying when a claim is merely an abstract idea and not a practical application of the idea. Some cases

will be inevitably more difficult than others. Concluding that a claim impermissibly pre-empts an abstract idea also can be a esoteric endeavor. Yet these inquiries continue to be a necessary part of the recognized limitations on patent-eligible subject matter.

E. A Section 101 "Process" Must Result in a Physical Transformation of an Article OR Be Tied to a Particular Machine; However, the Definition for "Process" Should Remain Flexible to Accommodate Future Technologies (Question 4)

The USPTO's answer to Question 4 has already been fully briefed above in response to Question 2. As mentioned above, *Diehr*'s interpretation of a section 101 "process" controls. On the other hand, the Supreme Court has also indicated that its test does not necessarily bar the eligibility of future unforeseen technologies that may not fit within the current rubric.

F. This Court Should Clarify *State Street* and *AT&T* to the Extent They Have Been Read Inconsistently with Supreme Court Precedents (Question 5)

Over the past several years, the USPTO has witnessed many applicants, including Bilski, take the position that *State Street* and *AT&T* effectively reduced the section 101 condition of patentability to nothing more than a question of "usefulness." In other words, if a claim recites any series of steps and yields some sort of benefit, then it allegedly meets the "useful, concrete, and tangible result"

requirement enunciated in *State Street*. And because the meaning of “concrete and tangible” in that context has never been explained, those terms have simply added further confusion to the patent-eligibility inquiry, leading some to believe they do not add anything to the test.

Viewed out of context, some of the statements in *State Street* and *AT&T* can be read as repudiating the well-established requirements in Supreme Court case law and such Federal Circuit precedents as *In re Schrader* concerning what is necessary to qualify as a patent-eligible “process.” As a result, applicants are seeking patents on purely human-driven claims covering “useful” business concepts, teaching concepts, financial instruments, and other broad claims untied to any machine implementation or transformation of an article to a different state or thing. We believe, however, that those readings of *State Street* and *AT&T* reflect a misunderstanding of the factual postures of the two cases. This Court sitting *en banc* can and should clarify the holdings of those decisions but need not overrule them.

It is in our view incorrect to read either *State Street* or *AT&T* as repudiating the inquiry into whether a process to be eligible under section 101 should be tied to a machine or a transformation. The claim in *State Street* was to a specific “machine,” and the claim in *AT&T* was a machine-based process (*AT&T*, 172 F.3d

at 1358 (“switching and recording mechanisms”)). Thus, the Court in both cases could treat that aspect of the patent subject-matter eligibility requirement as having been met. The *Comiskey* court made this very point, explaining that the inventions in both *State Street* and *AT&T* were patent-eligible “because they claimed practical applications and were tied to specific machines.” *Comiskey*, 499 F.3d at 1377. Thus, *State Street* and *AT&T* are properly read as analyzing only the relevant, disputed portion of the § 101 validity question at issue in those cases. Due to the confusion over the meaning of *State Street* and *AT&T*, this Court should take the opportunity now to clarify that the usefulness of a claimed invention, as discussed in those cases, is one part, *but not the only part*, of the section 101 analytical inquiry. This Court recently suggested such a clarification when in *Nuijten*, 500 F.3d at 1354, it rejected the notion that *State Street* held that “the four statutory categories are rendered irrelevant, non-limiting, or subsumed into an overarching question about patentable utility.”

Besides producing a useful result, a “process” claim must also meet additional criteria in order to satisfy section 101, as discussed above in answer to question 2. In particular, a process claim must either transform an article to a different state or thing, or be tied to a particular apparatus, in a manner that is not merely incidental or insignificant. *See also supra* p. 16 n.5. Furthermore, the

process claim must avoid pre-empting any abstract idea, law of nature, or natural phenomenon, but rather must be for a specific, tangible application. Assuming that the foregoing criteria are met, and the claim also produces a useful result, then it is generally eligible for patent protection.

In hindsight, it is perhaps not surprising that misunderstandings have arisen regarding the scope of section 101. The holding from *State Street* reads as follows:

Today, we hold that the transformation of data . . . by a machine through a series of mathematical calculations into a final share price, constitutes a practical application of a mathematical algorithm, formula, or calculation, because it produces "a useful, concrete and tangible result."

Id. at 1373. Read in isolation, that passage appears to incorrectly call for focusing only on the result of the claim for determining a practical application, rather than also focusing on the parts of the claim that achieve the purported result. As explained above, a practical application of an abstract idea requires a process claim to specify in the claim the means of accomplishing the useful result rather than simply determining whether the claim yields a useful result. And that means can be in the form of a series of steps undertaken to transform an article, or it can be a series of steps performed by a particular apparatus to produce a result.

However, before the *State Street* court reached that conclusion, it correctly first determined that the claimed data processing system in that case fell into a statutory category (“machine”) before proceeding to inquire whether it impermissibly sought to patent a mathematical algorithm. See *State Street*, 149 F.3d at 1372. The holding in *State Street* was thus in fact more than what it summarized as its holding.

The *AT&T* court did not address whether the claimed method qualified as a statutory “process,” as defined by *Diehr*. *AT&T*, 172 F.3d at 1355. That court declared in conclusory fashion that “the method claims at issue fall within the ‘process’ category,” and quoted the definition of “process” from 35 U.S.C. § 100(b), which defines “process” as simply “[a] process, art, or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.” See *id.* at n.1. Since the claimed process in *AT&T* in fact involved electronic switches, that discussion cannot be seen as repudiating this Court’s prior reliance in *Schrader* on *Diehr* and *Benson* as providing the controlling standard for a statutory “process” (*id.*, 22 F.3d at 295). Indeed, it is apparent that this was the context in which the *AT&T* court made its observation, since it specifically cited *State Street* to the effect that “any step-by-step process, be it electronic, chemical or mechanical, involves an ‘algorithm’ in the broad

sense of the term.” *Id.* at 1356, citing *State Street*, 149 F.3d at 1374-75 (Fed. Cir. 1998), *cert. denied* 525 U.S. 1093 (1999) (emphasis added). *AT&T*, however, has frequently been misunderstood as ignoring the qualifiers emphasized in this quotation.

Another issue with *AT&T* is its statement “a structural inquiry is unnecessary” for claims directed to a process. *AT&T*, 172 F.3d at 1359. It is often true that process claims are not necessarily required to recite the means or structure for performing the recited steps for transforming an article to a different state or thing. *See, e.g., Cochrane*, 94 U.S. at 788 (“The process requires that certain things should be done with certain substances, and in a certain order; but the tools to be used in doing this may be of secondary consequence.”). This is not the same, however, as saying that process claims that do not transform an article may fail to recite any apparatus to qualify as a statutory process, as well as avoid the abstract idea exception. It would be helpful for this Court to clarify the scope of that statement from *AT&T*.

The “useful, concrete and tangible” formulation in *State Street* would also be troublesome if it equated reaching a “a useful, concrete, and tangible result” with accomplishing a practical application that in itself avoided the bar on patenting abstractions. The dissenting Justices in *LabCorp* voiced this same

concern when they observed, citing *Morse*, that the Supreme Court “invalidated a claim to the use of electromagnetic current for transmitting messages over long distances even though it produces a result that seems ‘useful, concrete, and tangible.’” *LabCorp*, 126 S.Ct. at 2928 (Breyer, J., dissenting). Just as analyzing the means by which a process reaches its result is integral to analyzing whether it fits within the meaning of the statutory understanding of ‘process,’ it is also integral to assuring that the claimed process is a “practical application of an abstract idea.” Neither inquiry is satisfied simply by an appreciation of the practicality of the result; pre-emption is still a necessary part of the inquiry, and that should be reaffirmed. We do not understand this Court to have foregone this principle. It is indeed explicitly acknowledged in *AT&T* (172 F.3d at 1358). As *State Street* failed to mention it as a necessary consideration for a § 101 analysis, it would be useful for the Court to reiterate it.⁷

Finally, this Court should also clarify that *State Street*’s repudiation of a *per se* business method exception to eligibility should not be read to suggest that *all* business method claims are automatically patent-eligible. Rather, just like every

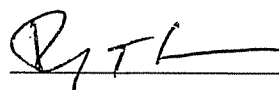
⁷ Likewise, the Court may wish to reiterate that mere combination of an abstract idea with a transformative or machine-implemented step does not automatically satisfy section 101, because incidental physical limitations will not suffice to transform an abstract idea into patent-eligible subject matter. *Diehr*, 450 U.S. at 191-92; *Comiskey*, 499 F.3d at 1380; *Grams*, 888 F.2d at 839-40.

other type of process claim, business methods must satisfy all aspects of the § 101 analysis. *See Comiskey*, 499 F.3d at 1374. The USPTO agrees that there is no such thing as a categorical business method exception to the patent system. We have seen that technology has a role in many arenas, and we do not believe that a class of technological innovations should go unprotected simply because they operate in the commercial environment. As reflected in the claims at issue in the current appeal, however, the *State Street* decision has been widely misread as giving *imprimatur* for the patentability of all methods of doing business regardless of whether they satisfy traditional section 101 eligibility requirements. We do not believe the Court intended to go so far, and appreciate the Court's willingness to revisit its case law in order to clarify the matter.

CONCLUSION

For the reasons given above and in our principal brief, the Board's conclusion that Bilski's claims 1-11 are not directed to patent-eligible subject matter should be affirmed.

Respectfully submitted,



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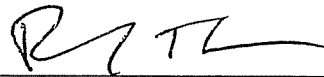
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RULE 32(a)(7)(c) CERTIFICATE OF COMPLIANCE

I certify pursuant to FRAP 32(a)(7) that the foregoing brief complies with the type-volume limitation. The total number of words in the foregoing brief, excluding the table of contents and table of authorities, is 7303, as calculated by the WordPerfect 9 program.

A handwritten signature in black ink, appearing to read 'RTL', is written over a horizontal line.

Raymond T. Chen

Associate Solicitor

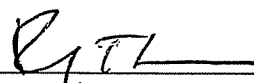
CERTIFICATE OF SERVICE

I hereby certify that on March 6, 2008, I caused two copies of the foregoing
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U.S. PATENT AND TRADEMARK OFFICE
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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte BERNARD L. BILSKI
and RAND A. WARSAW

Appeal No. 2002-2257
Application 08/833,892¹

HEARD: March 8, 2006²

Before FRANKFORT, McQUADE, BARRETT, BAHR, and NAGUMO,
Administrative Patent Judges.

BARRETT, Administrative Patent Judge.

DECISION ON APPEAL

This is a decision on appeal under 35 U.S.C. § 134(a) from
the final rejection of claims 1-11.

We affirm.

¹ Application for patent filed April 10, 1997, entitled
"Energy Risk Management Method," which claims the priority
benefit under 35 U.S.C. § 119(e) of Provisional Application
60/015,756, filed April 16, 1996.

² The case was previously heard on April 3, 2003, by
Administrative Patent Judges Barrett, Fleming, and Nagumo, but no
decision was entered.

BACKGROUND

The invention relates to a method practiced by a commodity provider for managing (i.e., hedging) the consumption risks associated with a commodity sold at a fixed price. It is disclosed that energy consumers face two kinds of risk: price risk and consumption risk (specification, p. 1). The proliferation of price risk management tools over the last 5 years before the filing date allows easy management of price risk (specification, p. 2). However, consumption risk (e.g., the need to use more or less energy than planned due to the weather) is said to be not currently managed in energy markets, which is the problem addressed by the invention (specification, p. 2).

Claim 1 is reproduced below.

1. 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 consumer;
- (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.

THE REJECTION

No references are applied in the rejection.

Claims 1-11 stand rejected under 35 U.S.C. § 101 as being directed to nonstatutory subject matter.

Pages of the final rejection (Paper No. 15) are referred to as "FR__." Pages of the examiner's answer (Paper No. 18) are referred to as "EA__." Pages of the appeal brief (Paper No. 17) are referred to as "Br__." Pages of the reply brief (Paper No. 19) are referred to as "RBr__."

The examiner's position is summarized in the statement that, "[r]egarding [] claims 1-11, the invention is not implemented on a specific apparatus and merely manipulates [an] abstract idea and solves a purely mathematical problem without any limitation to a practical application, therefore, the invention is not directed to the technological arts" (FR4). That is, the examiner states that the invention is an "abstract idea," and apparently a "mathematical algorithm," and does not fall within the "technological arts" according to In re Musgrave, 431 F.2d 882, 893, 167 USPQ 280, 289-90 (CCPA 1970), where the examiner states (FR4): "The definition of 'technology' is the 'application of science and engineering to the development of machines and procedures in order to enhance or improve human conditions, or at least improve human efficiency in some respect.'" (Computer Dictionary 384 (Microsoft Press, 2d ed. 1994))." The examiner

finds that no specific apparatus is disclosed to perform the steps, so "claims 1-11 are intended to be directed to the abstract method apart from the apparatus for performing the method" (FR4) and "[t]herefore, the claims are non-statutory, because they are directed solely to an abstract idea and solve[] a purely mathematical problem without practical application in the technological arts" (FR4). Therefore, the final rejection relies on both the "abstract idea" exclusion and a "technological arts" test for statutory subject matter.

In the examiner's answer, it is stated that "Applicant['s admission] that the steps of the method need not be performed on a computer (Appeal Brief at page 6) coupled with no disclosure of a computer or any other means to carry out the invention, make it clear that the invention is not in the technological arts" (EA4). The examiner states that the disclosure does not describe an implementation in the technological arts. The examiner states that the only way to perform the steps without a computer is by human means, and, therefore, the method is not technological because it does not "improve human efficiency" as required by the definition of "technology" (EA5-6). Thus, the examiner's answer relies primarily on a "technological arts" test.

DISCUSSION

The issue

The issue is whether the subject matter of claims 1-11 is directed to a statutory "process" under 35 U.S.C. § 101. We conclude that it is not.

Equally important is what test(s) should be applied in determining statutory subject matter.

Non-machine-implemented methods

The "useful arts" in the Constitution are implemented by Congress in the statutory categories of eligible subject matter in 35 U.S.C. § 101: "process, machine, manufacture, or composition of matter, or any new and useful improvements thereof." Machines, manufactures, and man-made compositions of matter represent tangible physical things invented by man and seldom raise a § 101 issue, except for the "special case" of claims to general purpose machines (usually computers) that merely perform abstract ideas (e.g., mathematical algorithms), where the fact that the claim is nominally directed to a "machine" under § 101 does not preclude it from being held nonstatutory. Machine-implemented methods also seldom have a problem being considered a process under § 101 because a "process" includes a new use for a known machine, § 100(b), again except for the "special case" of machine-implemented abstract

Appeal No. 2002-2257
Application 08/833,892

ideas. However, "non-machine-implemented" methods, because of their abstract nature, present § 101 issues.

This appeal involves "non-machine-implemented" method claims, i.e., the claims do not recite how the steps are implemented and are broad enough to read on performing the steps without any machine or apparatus (although performing the steps on a machine would, of course, infringe). The steps of claim 1: do not recite any specific way of implementing the steps; do not expressly or impliedly recite any physical transformation of physical subject matter, tangible or intangible, from one state into another; do not recite any electrical, chemical, or mechanical acts or results; do not directly or indirectly recite transforming data by a mathematical or non-mathematical algorithm; are not required to be performed on a machine, such as a computer, either as claimed or disclosed; could be performed entirely by human beings; and do not involve making or using a machine, manufacture, or composition of matter. We do not believe the outcome in this case is controlled by the Federal Circuit decisions in State St. Bank & Trust Co. v. Signature Fin. Group, Inc., 149 F.3d 1368, 47 USPQ2d 1596 (Fed. Cir. 1998) and AT&T Corp. v. Excel Communications, Inc., 172 F.3d 1352, 50 USPQ2d 1447 (Fed. Cir. 1999) because we interpret those cases to involve the "special case" of transformation of data by a machine.

Appeal No. 2002-2257
Application 08/833,892

The question of whether this type of non-machine-implemented subject matter is patentable is a common and important one to the U.S. Patent and Trademark Office (USPTO), as the bounds of patentable subject matter are increasingly being tested. In recent years, the USPTO has been flooded with claims to "processes," many of which bear scant resemblance to classical processes of manipulating or transforming compositions of matter or forms of energy from one state to another. Many of these applications are referred to as so-called "business methods," but claims to methods of meditation, dating, physical sports moves, etc., are also presented. "Business methods" have long been considered statutory subject matter when performed by a machine. Technology Center 3600, Workgroup 3620, in the USPTO is entirely dedicated to "Electronic Commerce (Business Methods)" in Class 705, "Data Processing: Financial, Business Practice, Management, or Cost/Price Determination"; see <http://www.uspto.gov/web/menu/pbmethod>. The USPTO no longer rejects claims because the claimed subject matter does "business" instead of something else. See State Street, 149 F.3d at 1377, 47 USPQ2d at 1600 (referring to Examination Guidelines, 61 Fed. Reg. 7478, 7479 (1996)). Nevertheless, many questions remain about statutory subject matter and what the tests are for determining statutory subject matter. State Street and AT&T, often called "revolutionary," involved patented machines or

machine-implemented processes that examiners have for sometime regarded as nonexceptional. Perhaps encouraged by certain general language in these cases, however, a wide range of ever more general claims to "processes" come before the Office (although the present case predates both State Street and AT&T). Many, like the claimed process in the present case, are not limited to implementation via any particular technology or machine. Are such "processes" patentable because they are "useful"? Other "process claims" involve what seem to be insubstantial or incidental manipulations of physical subject matter--e.g., the mere recording of a datum: are these patentable processes? Still other process claims involve human physical activity--methods of throwing a ball or causing a fumble. Do these process claims cover patentable subject matter? Must the examiners analyze such claims for compliance with the written description and enablement requirements, and search the prior art for evidence of novelty and nonobviousness?

Given the difficulty for examiners to make § 101 rejections, and the clear disfavor for such rejections in the opinions of our reviewing court, the U.S. Court of Appeals for the Federal Circuit, and in the view of many patent practitioners, it would be much more administratively convenient if the USPTO did not have to examine claims for statutory subject matter under § 101. Nevertheless, it is the USPTO's duty to examine claims for

compliance with § 101 as well as the other statutory requirements of patentability. See Graham v. John Deere Co., 383 U.S. 1, 18, 148 USPQ 459, 467 (1966) ("[T]he 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."). The USPTO rejects cases based on its understanding of § 101, not because it may be difficult to find prior art or to examine the claims for novelty and unobviousness. Cf. In re Fisher, 421 F.3d 1365, 1378, 76 USPQ2d 1225, 1235 (Fed. Cir. 2005) ("The concerns of the government and amici [that allowing EST patents would discourage research, delay scientific discovery, and thwart progress in the 'useful Arts'], which may or may not be valid, are not ones that should be considered in deciding whether the application for the claimed ESTs meets the utility requirement of § 101. The same may be said for the resource and managerial problems that the PTO potentially would face if applicants present the PTO with an onslaught of patent applications directed to particular ESTs. Congress did not intend for these practical implications to affect the determination of whether an invention satisfies the requirements set forth in 35 U.S.C. §§ 101, 102, 103, and 112."). In questionable cases, we feel that the public interest is best served by making a rejection. The Federal Circuit cannot address rejections that it does not see. See Enzo Biochem, Inc. v.

Appeal No. 2002-2257
Application 08/833,892

Gen-Probe Inc., 323 F.3d 956, 972, 63 USPQ2d 1609, 1619 (Fed. Cir. 2002) (Lourie, J., concurring in decision not to hear the case en banc) ("As for the lack of earlier cases on this issue, it regularly happens in adjudication that issues do not arise until counsel raise them, and, when that occurs, courts are then required to decide them.").

Only a very small fraction of the cases examined by the Examining Corps are ever appealed to the Board of Patent Appeals and Interferences (Board), and only a very small fraction of the rejections affirmed by the Board will ever be appealed to the Federal Circuit. The fact that not many § 101 cases get appealed should not be interpreted to mean that these are an insignificant problem to the USPTO and the public. As indicated by Justice Breyer dissenting from the dismissal of certiorari in Laboratory Corp. of America Holdings v. Metabolite Labs., Inc., 126 S. Ct. 2921, 79 USPQ2d 1065 (2006) (Labcorp), there are still unresolved issues under § 101.

Appeal No. 2002-2257
Application 08/833,892

Legal analysis of statutory subject matter

Several major analyses of statutory subject matter have been published recently. We review two in detail in the following summary.

Ex parte Lundgren

To avoid repetition, this opinion expressly incorporates by reference the legal analysis of statutory subject matter in the concurring-in-part/dissenting-in-part opinion of Administrative Patent Judge Barrett in Ex parte Lundgren, 76 USPQ2d 1385, 1393-1429 (Bd. Pat. App. & Int. 2005) (precedential). That discussion tries to identify the questions that have not been answered in the analysis of patentable subject matter under § 101 and to identify existing tests for statutory subject matter, rather than create some new test. The USPTO is struggling to identify some way to objectively analyze the statutory subject matter issue instead of just saying "We know it when we see it."

The main points of Lundgren are summarized as follows:³

(1) The Constitution authorizes Congress "To promote the Progress of ... useful Arts, by securing for limited Times to ... Inventors the exclusive Right to their ... Discoveries."

U.S. Const., art. I, § 8, cl. 8. There is little evidence in the historical record about what is meant by the "useful arts," but it appears intended to refer to "arts" used in industry and the production of goods. See Alan L. Durham, "Useful Arts" in the Information Age, 1999 BYU L. Rev. 1419 (1999).

(2) "Technological arts" is the modern equivalent of "useful arts" in the Constitution. Lundgren, 76 USPQ2d at 1393-94.

(3) "Technology" is defined as the totality of means employed to provide objects necessary for human sustenance and comfort. *Id.* at 1394. The definition of "engineering" as "the application of science and mathematics by which the properties of matter and the sources of energy in nature are made useful to man in structures, machines, products, systems, and processes" (emphasis added) is considered a good description of "technology" and the "useful arts." *Id.*

(4) The "useful arts" provision in the Constitution is implemented by Congress in the statutory categories of eligible subject matter in 35 U.S.C. § 101: "process, machine,

³ It should be understood that the citations to Lundgren are to the discussion and cases cited: the remarks of the concurrence/dissent have only persuasive value.

manufacture, or composition of matter, or any new and useful improvements thereof." Id. at 1396-97. The "utility" requirement of § 101 is separate from the eligible subject matter requirement. Id. at 1396.⁴

(5) The terms "invents" and "discovers" in § 101 are interpreted to require "invention," which is the conception and production of something that did not before exist, as opposed to "discovery," which is to bring to light that which existed before, but which was not known. Id. Of course, the practical application of a discovery of a law of nature may be patentable.

(6) The oft-quoted statement that "Congress intended statutory subject matter to 'include anything under the sun that is made by man,'" Diamond v. Diehr, 450 U.S. 175, 182,

⁴ The Constitution authorizes Congress "To promote the Progress of ... useful Arts." This provision can be mapped onto the statutory provisions as follows: "Arts" corresponds to the eligible statutory subject matter classes of "process, machine, manufacture, or composition of matter" in § 101 ("art" in the statute before 1952 had a different meaning than "useful arts" in the Constitution and was interpreted as practically synonymous with process or method, S. Rep. No. 1979, reprinted in 1952 U.S. Code Cong. & Admin. News at 2398); "useful" in the Constitution corresponds to the "useful" (utility) requirement in § 101; "progress" in the Constitution corresponds to the "new" requirement in § 101 which is defined in the conditions of novelty under § 102 and nonobviousness under § 103. The utility requirement is separate from the eligible subject matter requirement in § 101. See, e.g., Fisher, 421 F.3d at 1378, 76 USPQ2d at 1236 (expressed sequence tag (EST) is a composition of matter that does not meet utility requirement of § 101).

209 USPQ 1, 6 (1981), quotes from S. Rep. No. 1979, reprinted in
1952 U.S. Code Cong. & Admin. News at 2399:

A person may have "invented" a machine or manufacture,
which may include anything under the sun made by man, but it
is not necessarily patentable under section 101 unless the
conditions of the title are fulfilled.

This sentence does not mention a "process" or a "composition of
matter."⁵ A "manufacture" has long been defined to be "anything
made 'by hands of man' from raw materials, whether literally by
hand or by machinery or by art." In re Hruby, 373 F.2d 997,
1000, 153 USPQ 61, 65 (CCPA 1967), discussing Riter-Conley Mfg.
Co. v. Aiken, 203 F. 699 (3d Cir. 1913). We have no doubt that
Congress intended statutory subject matter to include any
tangible thing made by man, including man-made compositions of
matter and man-made living organisms. However, there is a
fundamental difference in nature between "machines, manufactures,

⁵ As discussed by Justice Breyer at the oral argument in
Labcorp (transcript on "[http://www.supremecourtus.gov/
oral_arguments/argument_transcripts.html](http://www.supremecourtus.gov/oral_arguments/argument_transcripts.html)," Argument 04-607,
argued 3/21/06, p. 43, line 16, to p. 44, line 4):

JUSTICE BREYER: Does that fall within it? I mean, I
can't resist pointing, as one of these briefs did, the
phrase anything under the sun that is made by man comes from
a committee report that said something different. It said a
person may have invented a machine or a manufacture, which
may include anything under the sun that is made by man.

So referring to that doesn't help solve the problem
where we're not talking about a machine or a manufacture.
Rather we are talking about what has to be done in order to
make an abstract idea fall within the patent act. Now,
sometimes you can make that happen by connecting it with
some physical things in the world and sometimes you can't.

or compositions of matter," which are things, and a "process," which refers to acts. Lundgren, 76 USPQ2d at 1397. It is not clear that "anything under the sun made by man" was intended to include every series of acts conceived by man.

(7) "Machines, manufactures, and compositions of matter," as defined by the Supreme Court, refer to physical things having physical structure or substance. Id. at 1397. Machines, manufactures, and man-made compositions of matter broadly cover every possible "thing made by man." Id.

A statutory subject matter problem in these categories arises only in the "special case" of transformation of data by a general purpose machine (e.g., a general purpose computer) claimed as a machine or a machine-implemented process, or a manufacture (a computer program embodied in a tangible medium which is capable of performing certain functions when executed by a machine).⁶ Where the transformation of data represents an

⁶ The "special case" arises where the claim recites a programmed general purpose "machine" (e.g., a "computer" or "system"), instead of a new structure; i.e., where what applicant claims is the method to be performed on a known machine. The CCPA and the Federal Circuit have held that a general purpose computer in effect becomes a special purpose computer once it is programmed to perform particular functions. See In re Alappat, 33 F.3d 1526, 1554, 31 USPQ2d 1545, 1558 (Fed. Cir. 1994) (en banc). Nevertheless, a programmed general purpose machine which merely performs an abstract idea, such as a mathematical algorithm, has been held nonstatutory as an attempt to patent the abstract idea itself, see Gottschalk v. Benson, 409 U.S. 63, 71-72, 175 USPQ 673, 676 (1972) ("nutshell" holding) and In re de Castelet, 562 F.2d 1236, 1243, 195 USPQ 439, 445 (CCPA 1977) (discussing "nutshell" language), whereas a claim

"abstract idea" (e.g., a mathematical algorithm), the fact that the claimed subject matter would otherwise be considered statutory because it nominally recites a "machine" or machine-implemented "process" or "manufacture" storing information to be read by a machine, will not prevent the claim from being held unpatentable. Id. at 1407-08 (citing cases where machine claims for performing mathematical algorithms were held nonstatutory).

(8) A "process" is the most difficult category of § 101 to define. Id. at 1398. Not every process in the dictionary sense

directed to a new machine structure is clearly a patentable "machine" under § 101.

Although a case has not yet been presented, we believe that a similar "special case" exists for "manufactures" which store programs that cause a machine to perform an abstract idea, e.g., a computer program to perform a mathematical algorithm stored on a tangible medium: the nominal recitation of a "manufacture" does not preclude the claim from being nonstatutory subject matter, just as the nominal recitation of a "machine" does not preclude a claim from being nonstatutory subject matter. Normally, "functional descriptive material," such as data structures and computer programs, on a tangible medium qualifies as statutory subject matter and the nature of the recorded material may not be ignored under the "printed matter" doctrine. See Examination Guidelines for Computer-Related Inventions, 61 Fed. Reg. 7478, 7481-82 (February 28, 1996), 1184 Off. Gaz. Patent and Trademark Office (O.G.) 87, 89 (March 26, 1996) (defining "functional" and "nonfunctional descriptive material"); In re Lowry, 32 F.3d 1579, 32 USPQ2d 1031 (Fed. Cir. 1994). However, applicants should not be able to evade § 101 by a nominal claim to structure. Computer programs are distinguished from passive non-functional descriptive material stored on a medium (e.g., music or information stored on a compact disc), which is usually addressed as "printed matter" under § 103. But see Alappat, 33 F.3d at 1554, 31 USPQ2d at 1566 (Archer, C.J., concurring in part and dissenting in part) ("The discovery of music does not become patentable subject matter simply because there is an arbitrary claim to some structure.").

constitutes a "process" under § 101. Id. When Congress approved changing "art" to "process" in the 1952 Patent Act, it incorporated the definition of "process" that had evolved in the courts. Id. "Art" in the pre-1952 statute is not the same as the "useful arts" in the Constitution. See footnote 4. The Supreme Court has arguably defined a "process" as "an act, or series of acts, performed on the subject matter to be transformed and reduced to a different state or thing." See Lundgren, 76 USPQ2d at 1398. The subject matter transformed may be tangible (matter) or intangible (some form of energy, such as the conversion of electrical signals or the conversion of heat into other forms of energy (thermodynamics)), but it must be physical. Id. at 1398-99. The transformation test also conforms to many individuals' expectations that they only have to worry about patent infringement when dealing with methods associated with industry and the production of goods. The transformation definition of a "process" provides an objective test to analyze claims for statutory subject matter because one can identify, analyze, and discuss what and how subject matter is transformed.

The transformation test is not without problems as evidenced by the dissent in Labcorp, where the question was whether a "test" step that required a physical transformation of a blood sample made the claim statutory. Justice Breyer stated that "the process described in claim 13 is not a process for transforming

blood or any other matter," Labcorp, 126 S. Ct. at 2927, 79 USPQ2d at 1070, which can be interpreted to mean that while the test step might require a transformation, no physical transformation steps are recited, and/or that the claim as a whole is not directed to a transformation (it is not to a method of performing a test). The CCPA and the Federal Circuit have addressed such limitations as "data gathering" steps. Lundgren, 76 USPQ2d at 1427-28.

(9) A generally recited "process" claim is not limited to the means disclosed for performing it. Id. at 1400-01. Methods tied to a machine generally qualify as a "process" under § 101 because machines inherently act on and transform physical subject matter, id. at 1400, and new uses for known machines are a "process" under 35 U.S.C. § 100(b). The principal exception is the "special case" of general purpose machine-implemented processes that merely perform an "abstract idea" (the best known example of which is a mathematical algorithm); see id. at 1407-08 (cases where machine-implemented process claims for performing mathematical algorithms were held nonstatutory). Statutory processes are evidenced by physical transformation steps, such as chemical, electrical, and mechanical steps. Id. at 1401. A statutory "process" involving a transformation of physical subject matter can be performed by a human. Id. at 1400-01. Not every step requiring a physical action results in a patentable

physical transformation, e.g., "negotiating a contract,"
"convening a meeting, etc." Id.

(10) Some subject matter, although invented by man, does not fall within any of the four categories of § 101, e.g., data structures, computer programs, documents, music, art, and literature, etc. Id. at 1401-02.

(11) The judicially recognized exclusions are limited to "laws of nature, natural phenomena, and abstract ideas." Id. at 1402-03. There are no separate "mathematical algorithm" or "business method" exclusions. Id. Of course, this does not mean that "mathematical algorithms" and "business methods" are necessarily statutory, but only that claims cannot be rejected just because they contain mathematical steps or business concepts: the analysis must be framed in terms of the three recognized exclusions.

(12) "Laws of nature" and "natural phenomena" exclusions can be explained by the fact that the "discovery" of a preexisting law of nature, a principle of physical science, or a natural phenomenon does not meet the "invents" requirement of § 101: they are not inventions "made by man," but are manifestations of nature, free to all. Id. at 1403.

(13) "Abstract ideas" refer to disembodied plans, schemes, or theoretical methods. Id. at 1404. "Abstract ideas" can represent a discovery of a "law of nature" or a "physical phenomenon" or a man-made invention.⁷ Id. Mathematical algorithms are the most well known example of an abstract idea, but there is no reason why the abstract idea exception should be

⁷ Judge Rader states:

In determining what qualifies as patentable subject matter, the Supreme Court has drawn the distinction between inventions and mere discoveries. On the unpatentable discovery side fall "laws of nature, natural phenomena, and abstract ideas." On the patentable invention side fall anything that is "not nature's handiwork, but [the inventor's] own." [Citations omitted.]

Alappat, 33 F.3d at 1582, 31 USPQ2d at 1590 (Rader, J., concurring). There is no question that any "machine, manufacture, or [man-made] composition of matter" is a man-made physical thing, not a law of nature, natural phenomenon, or abstract idea, and is patentable eligible subject matter under § 101 (subject to the "special case" of general purpose machines and manufactures that merely perform "abstract ideas"). However, we disagree with Judge Rader's statement to the extent it implies that everything conceived by man and claimed as a method is a patentable invention. Unpatentable "abstract ideas" can represent "inventions" made by man as well as "discoveries" of things that existed in nature, and are easily claimed as a series of steps so as to appear to be a "process" under § 101. For example, mathematical algorithms (the best known example of an abstract idea) can be "abstract ideas" that do not represent a discovery of something that existed in nature. See In re Meyer, 688 F.2d 789, 794-95, 215 USPQ 193, 197 (CCPA 1982) ("However, some mathematical algorithms and formulae do not represent scientific principles or laws of nature; they represent ideas or mental processes and are simply logical vehicles for communicating possible solutions to complex problems."). A claim to a method of government would appear to be an unpatentable abstract political idea even though it is a creation of human thinking that can be claimed as a method. Not every claim to a series of steps "invented by man" is a "process" under § 101.

limited to mathematical algorithms. Id. Abstract ideas are usually associated with method claims because a "machine, manufacture, or composition of matter" are tangible things and not disembodied concepts. Abstract ideas performed on general purpose machines or embodied in a generic manufacture constitute a "special case" where subject matter that appears to be nominally within § 101 is nonstatutory.

One possible identifying characteristic of an abstract idea is the lack of transformation of any physical subject matter according to the definition of a "process" under § 101 described supra. Another possible identifying characteristic is if the claim is so broad that it covers (preempts) any and every possible way that the steps can be performed, because there is no "practical application" if no specific way is claimed to perform the steps. Id. at 1405. This may be illustrated by the claim discussed in the dissent in Labcorp, where the "words 'assaying a body fluid' refer to the use of any test at all, whether patented or not patented," 126 S. Ct. at 2924, 79 USPQ2d at 1067, and "Claim 13 . . . tells the user to use any test at all," id. at 2927, 79 USPQ2d at 1070. See also Tilghman v. Proctor, 102 U.S. 707, 726-27 (1880) (discussing overbreadth of Morse's eighth claim in O'Reilly v. Morse, 56 U.S. 62 (1854) compared to the scope of enablement). Incidental physical limitations, such as data gathering, field of use limitations, and post-solution

activity are not enough to convert an "abstract idea" into a statutory "process." Lundgren, 76 USPQ2d at 1405 and 1427-28. A method may not be considered an "abstract idea" if it produces an objectively measurable result (e.g., a contract as a result of a negotiation method or a slower heartbeat as a result of a meditation technique), but it may still not qualify as a "process" under § 101 if it does not perform a transformation of physical subject matter.

(14) "Laws of nature, natural phenomena, and abstract ideas" can be thought of as "exclusions" or "exceptions," but the terms are not necessarily synonymous. An "exclusion" refers to subject matter that is not within § 101 by definition. See, e.g., Diamond v. Diehr, 450 U.S. at 185, 209 USPQ at 7 ("This Court has undoubtedly recognized limits to § 101 and every discovery is not embraced within the statutory terms. Excluded from such patent protection are laws of nature, physical phenomena and abstract ideas." (Emphasis added.)). The term "exclusion" (from the Latin, "to shut out") carries more of the connotation a definition that does not encompass certain subject matter. An "exception" (from the Latin, "to take out") tends to refer to subject matter that would fall within § 101 "but for" some exceptional condition. The cases, like ordinary language, do not make strong distinctions between the two words and they tend to use them interchangeably. When the point of view is clear, the

distinction is without a difference. Lundgren, 76 USPQ2d at 1405.

A great deal of confusion -- not to say mischief -- may arise when advocates (or decision makers) mistake the analytical process for the subject matter. For example, the position that not every series of steps is a "process" under § 101 is consistent with the idea that "abstract ideas" are excluded from § 101. On the other hand, if every series of steps is a "process" under § 101, then, in order to preserve the Supreme Court precedent that abstract thoughts are not patentable, it is necessary to recognize that certain "processes" are exceptions to the general rule.

(15) There is a long history of mathematical algorithms as abstract ideas before State Street and AT&T. Id. at 1406-11. One of the main issues after Gottschalk v. Benson was the "special case" of determining when machine claims (including apparatus claims in "means-plus-function" format) and machine-implemented process claims, which recited mathematical algorithms, were unpatentable. This led to the two-part Freeman-Walter-Abele test. Id. at 1409-10.

(16) We interpret the State Street and AT&T test of a "useful, concrete and tangible result" to be limited, at present, to claims to machines and machine-implemented processes, i.e., to the "special cases" of claims that might be within § 101 because

they recite structure, but which involve an abstract idea issue. Id. at 1411-13. The Federal Circuit recognized that "certain types of mathematical subject matter, standing alone, represent nothing more than abstract ideas until reduced to some type of practical application, i.e., 'a useful, concrete and tangible result.'" State Street, 149 F.3d at 1373, 47 USPQ2d at 1600-01 (citing In re Alappat, 33 F.3d at 1544, 31 USPQ2d at 1557). The full statement in Alappat reads: "This [claimed invention] is not a disembodied mathematical concept which may be characterized as an 'abstract idea,' but rather a specific machine to produce a useful, concrete, and tangible result." (Emphasis added.) Alappat, 33 F.3d at 1544, 31 USPQ2d at 1557. Alappat, Arrhythmia Research Technology Inc. v. Corazonix Corp., 958 F.2d 1053, 22 USPQ2d 1033 (Fed. Cir. 1992), State Street, and AT&T all involved transformation of data by a machine. The court specifically held that transformation of data representing some real world quantity (a waveform in Alappat, an electrocardiograph signals from a patient's heartbeat in Arrhythmia, or discrete dollar amounts in State Street) by a machine was a practical application of a mathematical algorithm, formula, or calculation that produced "a useful, concrete and tangible result," and that a method of applying a PIC indicator "value through switching and recording mechanisms to create a signal useful for billing purposes," AT&T, 172 F.3d at 1358, 50 USPQ2d at 1452, a machine-

implemented process, was "a useful, concrete, tangible result."
See Lundgren, 76 USPQ2d at 1411-16 (APJ Barrett, concurring-in-part and dissenting-in-part) (holding that the State Street test, so far, is limited to transformation of data by machines and machine-implemented processes). The test in Alappat may derive from the classical definition of a "machine": "The term machine includes every mechanical device or combination of mechanical powers and devices to perform some function and produce a certain effect or result." Corning v. Burden, 56 U.S. 252, 267 (1854).

However, the fact that the court in AT&T commented on In re Grams, 888 F.2d 835, 12 USPQ2d 1824 (Fed. Cir. 1989), and In re Schrader, 22 F.3d 290, 30 USPQ2d 1455 (Fed. Cir. 1994), which both involved non-machine-implemented process claims, as being "unhelpful" because they did not ascertain if the end result of the claimed process was useful, concrete, and tangible, AT&T, 172 F.3d at 1360, 50 USPQ2d at 1453, leaves open the question of whether the "useful, concrete and tangible result" test is intended to be extended past the original facts of the machine-implemented invention.

(17) Justice Breyer in his dissent in Labcorp stated in dicta that it is highly questionable whether the "useful, concrete and tangible result" test is a general test for statutory subject matter: "[State Street] does say that a process is patentable if it produces a 'useful, concrete, and tangible

result.' 149 F.3d, at 1373. But this Court has never made such a statement and, if taken literally, the statement would cover instances where this Court has held the contrary." 126 S. Ct. at 2928.

(18) None of Alappat, State Street, or AT&T states where the "useful, concrete and tangible result" terms come from or how they are defined. It seems that "concrete" and "tangible" have essentially the same meaning, and that a "concrete and tangible result" is just the opposite of an "abstract idea." The term "useful" appears to refer to the "utility" requirement in § 101, which is a separate requirement from the patent eligible subject matter requirement. Id. at 1416. Thus, it is not clear to us what is meant by the test. It may be that the test is merely a restatement of existing principles rather than a completely new test. Id. Transformation of data by a machine which represents an abstract idea (for example, but not limited to, a mathematical algorithm) is not statutory just because it is nominally claimed as a machine or a machine-implemented process. Id. at 1407-8. Such "special cases" have always been difficult to address. For now, we interpret the State Street and AT&T test to be a test for when transformation of data by a machine is statutory subject matter. The test could be clarified by the facts of the cases: (1) transformation of data (i.e., electrical signals representing data) is by a machine; (2) the data corresponds to something in

the "real world"; and (3) no physical acts need to occur outside of the machine (internal transformation of electrical signals by the machine is sufficient). Id. at 1411. If the Federal Circuit intends to create a new general test for statutory subject matter regardless of whether it involves transformation of data (signals) by a machine, then further explanation in an appropriate case is needed.

(19) Non-machine-implemented process claims present additional issues to analyze for statutory subject matter. "Process" claims recite acts and are fundamentally different from "machine, manufacture, or composition of matter" claims, which recite things. Process claims do not have to recite structure for performing the acts. Acts are inherently more abstract than structure. While there is seldom disagreement about physical things falling into one of the statutory classes, it is not always easy to determine when a series of steps is a statutory "process" under § 101.

Where the steps define a transformation of physical subject matter (tangible or intangible) to a different state or thing, as normally present in chemical, electrical, and mechanical cases, there is no question that the subject matter is statutory; e.g., "mixing" two elements or compounds is clearly a statutory transformation that results in a chemical substance or mixture

although no apparatus is claimed to perform the step and although the step could be performed manually. Id. at 1417.

(20) There are several issues that complicate analysis of non-machine-implemented processes: (1) a claim that is so broad that it covers both statutory and nonstatutory subject matter; (2) the statement in In re Musgrave, 431 F.2d at 893, 167 USPQ at 289-90, that it makes no difference whether steps are performed by a machine or mentally, as long as they are in the "technological arts"; (3) how to determine when a transformation of physical subject matter takes place; (4) whether minor physical limitations can define a statutory process; and (5) whether methods that can only be performed by a human, e.g., sports moves, are patentable subject matter. Lundgren, 76 USPQ2d at 1417.

(21) Although this question does not appear to have been formally decided by the Federal Circuit, we are of the opinion that claims that read on statutory and nonstatutory subject matter should be rejected as unpatentable. Id. at 1417-24. This problem is most critical in method claims because method claims do not have to recite what structure is used to perform the steps, making them abstract in nature, whereas claims to things, "machines, manufactures, or compositions of matter," easily fall within § 101 (subject to the "special case" of abstract ideas performed on machines). The USPTO rejects method claims when

they are interpreted to be so broad that they are directed to the abstract idea itself, rather than a practical implementation thereof; e.g., a series of steps without any recitation of how the steps are performed might be rejected as nonstatutory subject matter as an "abstract idea," whereas the same series of steps, if performed by a machine, might be statutory as a practical application of the abstract idea.

(22) The "technological arts" test for statutory subject matter originated in response to "mental steps" rejections. Where the steps of the claim were so broad that they could be performed mentally by a human operator (although the claim did not recite how the steps were performed), the claim was rejected as not defining statutory subject matter even though if the steps were performed by a machine it would constitute statutory subject matter. This is the situation of the claims reading on statutory and nonstatutory subject matter. The court in Musgrave declined to follow the approach of previous cases of determining whether the claim, interpreted reasonably, read upon mental implementation of the process or was confined to a machine implementation. Id. at 1419. The court held that process claims which could be done by purely mental processes (what might today be called "abstract ideas"), as well as by machine, were statutory as long as the steps were in the "technological arts." Id. at 1420. It was not explained how "technological arts" were

to be determined. Judge Baldwin concurred, objecting to the majority's analysis and writing, "suppose a claim happens to contain a sequence of operational steps which can reasonably be read to cover a process performable both within and without the technological arts? This is not too far fetched. Would such a claim be statutory? . . . We will have to face these problems some day." Musgrave, 431 F.2d at 896, 167 USPQ at 291. This test, as a separate test, seems to have been implicitly overruled by Gottschalk v. Benson. Lundgren, 76 USPQ2d at 1425.

The Board held in Lundgren that the "technological arts" test is not a separate and distinct test for statutory subject matter. Id. at 1388. Although commentators have read this as eliminating a "technology" requirement for patents, this is not what was stated or intended. As APJ Barrett explained, "[t]he 'technology' requirement implied by 'technological arts' is contained within the definitions of the statutory classes." Id. at 1430. All "machines, manufactures, or [man-made] compositions of matter" are things made by man and involve technology. Methods which define a transformation of physical subject matter from one state or thing to another involve technology and qualify as a statutory "process" under § 101. The definitions of the statutory classes and application of the exclusions are the proper tests. A process may involve technology because it meets the transformation of physical subject matter definition of a

"process" under § 101, even though it does not require performance by a machine. Id. at 1428. The "technological arts" is not a useful, objective test because it was never defined as anything except as a more modern term for the "useful arts." The use of such a test would result in conclusory rejections, which are unreviewable, just as many claims in the past were rejected as "business methods" because they involved some business aspect (e.g., accounting).

(23) Not all physical limitations in a claim directed to an abstract idea (e.g., a mathematical algorithm) were sufficient to define a statutory process prior to State Street. This case law regarding data gathering, field-of-use limitations, and post-solution activity, which includes Supreme Court precedent, should still apply to determining whether non-machine-implemented process claims are directed to an abstract idea or a practical application of that idea. Id. at 1427-28; cf. Labcorp, 126 S. Ct. at 2927-28 (initial step of "assaying a body fluid" does not render the claim patentable). It is difficult to determine when such steps are enough to define statutory subject matter.

(24) Claims that can only be performed by a human, such as dance and sports moves, meditation techniques, etc., present difficult questions under § 101. Id. at 1428-29. Surgical methods are performed by humans, but since they involve the

application of scientific medical knowledge to transform human and animal tissue they are readily classifiable as a type of manufacturing process. Id. at 1429. This issue is not present in this case, but we believe any judicial review of this decision should recognize that the present case is only one in a broad spectrum of cases involving what the USPTO perceives to be nonstatutory subject matter.

(25) The concurrence/dissent in Lundgren concludes that there are three possible existing tests for statutory subject matter of non-machine-implemented methods: (1) the definition of a "process" under § 101 requires a transformation of physical subject matter (which is interpreted to mean matter or some form of energy) to a different state or thing; (2) the judicially recognized exclusions for "abstract ideas, laws of nature, or natural phenomena"; and (3) the "useful, concrete and tangible result" test of State Street. Id. at 1429-30.

(26) In summary, the concurrence/dissent in Lundgren makes the following conclusions about non-machine-implemented method claims, which hopefully will be addressed by the Federal Circuit.

- (a) Not every process in the dictionary sense is a "process" under § 101; i.e., not every series of steps is a "process" under § 101.
- (b) The definition of a "process" under § 101 requires a transformation of physical subject matter to a different state or thing.
 - (i) The physical subject matter transformed can be matter (an object or material) or some form of

energy (e.g., heat into mechanical motion; electromagnetic waves propagating in space into electrical current in a wire; etc.).

- (c) The oft-quoted statement that "Congress intended statutory subject matter to 'include anything under the sun that is made by man,'" is based on the Senate Report statement that "[a] person may have 'invented' a machine or manufacture, which may include anything under the sun made by man." The Senate Report indicates that things made by man ("machines, manufactures, or [man-made] compositions of matter") are statutory, but does not imply that Congress intended every concept conceived by man that can be claimed as a method to be patentable subject matter.
- (d) Some claims that nominally fall within § 101 because they recite a general purpose machine or a method performed on a general purpose machine (e.g., "a computer-implemented method comprising . . .") may nonetheless be nonstatutory subject matter if all that is performed is an "abstract idea." This is a "special case" because the subject matter is technically within § 101 by virtue of the machine, as opposed to an exclusion that was never within § 101.
- (e) "Abstract ideas" can represent ideas "made by man."
- (f) Possible indicia of an "abstract idea" may be (i) the lack of transformation of physical subject matter according to the definition of a "process" under § 101, and/or (ii) the claim covers (preempts) any and every possible way that the steps can be performed.
- (g) Physical steps or limitations in a claim are not necessarily sufficient to convert the claim into statutory subject matter, e.g., data-gathering steps, field of use limitations, and minimal post-solution activity.
- (h) It is possible that a non-machine-implemented method may be nonstatutory subject matter if it does not perform a transformation of physical subject matter even though it contains physical steps that might prevent it from being labeled an "abstract idea."
- (i) The holding of State Street is limited to transformation of data by a machine.

- (j) AT&T involved a machine-implemented process claim.
- (k) The "useful, concrete and tangible result" test of State Street and AT&T is presently limited to machine claims and machine-implemented process claims.
- (l) The terms "useful, concrete and tangible" have not yet been defined.
- (m) During prosecution, claims that read on statutory and nonstatutory subject matter should be held to be unpatentable.
- (n) There is no separate "technological arts" test for statutory subject matter.

Interim Guidelines

After Lundgren, the USPTO published Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility (Interim Guidelines), 1300 Off. Gaz. Patent and Trademark Office (O.G.) 142 (Nov. 22, 2005). The Interim Guidelines do not track the analysis in Lundgren, which principally focused on non-machine-implemented method claims. The Interim Guidelines indicate that statutory subject matter: (1) must fall within one of the statutory categories of § 101, 1300 O.G. at 145; and (2) must not fall within one of the judicially recognized exceptions for "laws of nature, natural phenomena, and abstract ideas," id. The Interim Guidelines state that while "laws of nature, natural phenomena, and abstract ideas" are not eligible for patenting, a practical application may be patented, id. A practical application can be identified by tests: (a) a physical transformation of an article to a

different state or thing, id. at 146; or (b) the production of a "useful, concrete and tangible result," id., i.e., the State Street test applied to all claims, whether or not machine-implemented. The Interim Guidelines also state that (c) the claim must not preempt every "substantial practical application" of the of nature, natural phenomena, or abstract idea, id.

Guidelines are intended to instruct examiners on how to apply the law to the facts. The Board is not bound by such guidelines,⁸ but applies the law directly to the facts. The Interim Guidelines state: "Rejections will be based upon the substantive law and it is these rejections which are appealable. Consequently, any failure by USPTO personnel to follow the Guidelines is neither appealable nor petitionable." Id. at 142, under "Introduction." Although the analysis will apply the Interim Guidelines in the alternative, this exercise underscores, for this panel, several problems with the Interim Guidelines that limit their usefulness severely.

⁸ From the movie Pirates of the Caribbean (Disney 2003):

Elizabeth: You have to take me to shore! According to the Code of the Order of the Brethren.

Barbossa: First, your return to shore was not part of our negotiations nor our agreement, so I 'must' do nothin'. And secondly, you must be a pirate for the pirate's code to apply, and you're not. And thirdly, the code is more what you call guidelines than actual rules. Welcome aboard the Black Pearl, Miss Turner.

First, the Interim Guidelines implicitly concede that any series of steps is a "process" under § 101 and does not address the case law that says that not every process in the dictionary sense is a "process" under § 101. See Gottschalk v. Benson, 409 U.S. at 64, 175 USPQ at 674 ("The question is whether the method described and claimed is a 'process' within the meaning of the Patent Act."); Parker v. Flook, 437 U.S. 584, 588 n.9, 198 USPQ 193, 196 n.9 (1978) ("The statutory definition of 'process' is broad.... An argument can be made, however, that this Court has only recognized a process as within the statutory definition when it either was tied to a particular apparatus or operated to change materials to a 'different state or thing.'"); id. at 589, 198 USPQ at 197 ("The holding [in Gottschalk v. Benson] that the discovery of that method could not be patented as a 'process' forecloses a purely literal reading of § 101."); Lundgren, 76 USPQ2d at 1398-1401. "Process" claims are inherently more abstract than "machine, manufacture, or composition of matter" claims, which are directed to physical things, because a "process" is not limited to, or required to recite, the means for performing the steps. Id. at 1400-01. If it is conceded that every series of steps is a "process" under § 101, then one possible statutory subject matter test is lost.

Second, the Interim Guidelines do not provide any directions for how examiners should determine whether the claimed invention

is to an "abstract idea, law of nature, or natural phenomenon" except by finding that it is not a practical application as defined by tests (a), (b), and (c). The Interim Guidelines treat "abstract ideas, laws of nature, or natural phenomena" as exceptions rather than exclusions, i.e., claims are statutory "but for" some condition.

Third, the Interim Guidelines state that a transformation or reduction of an article to a different state or thing is a statutory practical application. Interim Guidelines, 1300 O.G. at 146. This perpetuates the misunderstanding that "transformation" requires transformation of a tangible object or article, contrary to cases that explain that the subject matter transformed can be physical, yet intangible, phenomena such as electrical signals. See In re Schrader, 22 F.3d 290, 295 n.12, 30 USPQ2d 1455, 1459 n.12 (Fed. Cir. 1994) ("In the Telephone Cases, 126 U.S. 1 ... (1887), the Court upheld the validity of a claim directed to a method for transmitting speech by impressing acoustic vibrations representative of speech onto electrical signals. If there was a requirement that a physical object be transformed or reduced, the claim would not have been patentable.... Thus, it is apparent that changes to intangible subject matter representative of or constituting physical activity or objects are included in this definition"); Lundgren, 76 USPQ2d at 1398-99.

Fourth, the Interim Guidelines adopt the "useful, concrete and tangible result" test of State Street as a general test for patentable subject matter without addressing the fact that the holding of State Street was qualified by transformation of data by a machine and that AT&T involved a machine-implemented process claim. Id. at 1411-13. It may be that the State Street test can be adapted as a general test, but the factual differences between machine claims or machine-implemented process claims and non-machine-implemented process claims are significant and have not been addressed by the Federal Circuit. Machines inherently act to transform physical subject matter (tangible or intangible) to a different state or thing. As recognized in the earlier Examination Guidelines for Computer-Related Inventions, 61 Fed. Reg. at 7484, 1184 O.G. at 92: "There is always some form of physical transformation within a computer because a computer acts on signals and transforms them during its operation and changes the state of its components during the execution of a process." Machine-implemented processes nominally fit within the definition of a "process" under § 101, but may not necessarily be statutory under the special circumstances involving transformation of data by a machine, which are addressed by the State Street test. The State Street "useful, concrete and tangible result" test is more readily understood and applied if it is limited to machine claims and machine-implemented process claims, which are already

nominally within § 101, because a machine (almost always a programmed computer) that does no more than perform the steps of an abstract idea is not a practical application of the abstract idea. Thus, the State Street test requires that the practical application must be recited in the claims. The fact that an abstract idea is capable of being practically applied, and that a practical application is disclosed, does not make a broad claim to the abstract idea itself patentable. A claim which covers both statutory and nonstatutory subject matter should be held unpatentable, see Lundgren, 76 USPQ2d at 1417-24.

Fifth, the Interim Guidelines attempt to define the terms "useful," "concrete," and "tangible," but have not cited any support in § 101 cases dealing with patent eligible subject matter. Moreover, the proposed "definitions" seem to be circular and therefore unhelpful. The statutory categories of § 101 ("process, machine, manufacture, or composition of matter") define eligible subject matter, i.e., subject matter that can be patented. The terms "new and useful" in § 101 refer to other conditions for patentability. "It may be useful to think of eligibility as a precondition for patentability, and of utility as one of the three fundamental conditions for patentability, together with novelty ... and nonobviousness" Robert L. Harmon, Patents and the Federal Circuit 40 (4th ed. Bureau of National Affairs, Inc. 1998). See Lundgren, 76 USPQ2d at 1395-

96. "Notwithstanding the words 'new and useful' in § 101, the invention is not examined under that statute for novelty because that is not the statutory scheme of things or the long-established administrative practice." State Street, 149 F.3d at 1373 n.2, 47 USPQ2d at 1600 n.2 (citing In re Bergy, 569 F.2d 952, 960, 201 USPQ 352, 360 (CCPA 1979)). It seems that the "useful result" part of the State Street test refers to the "utility" requirement of § 101, which is a separate requirement from patent eligible subject matter, yet this is not questioned by the Interim Guidelines. The Interim Guidelines define "tangible" as the opposite of "abstract," 1300 O.G. at 146, which adds nothing of substance or guidance to the abstract idea exception, and no case is cited for the definition. The Interim Guidelines define "concrete" as the opposite of "unrepeatable" or "unpredictable," id., yet we find no dictionary that supports this definition. The case cited in support, In re Swartz, 232 F.3d 862, 864, 56 USPQ2d 1703, 1704 (Fed. Cir. 2000) (because asserted results in the area of cold fusion were "irreproducible," claims were properly rejected under § 101), relates to utility, not to patent eligible subject matter. In our opinion, the terms "concrete and tangible" essentially say the same thing, that the result is not just an "abstract idea," but is "actual and real."

Sixth, the Interim Guidelines do not provide any guidance as to how examiners should determine whether the claimed invention preempts an "abstract idea, law of nature, or natural phenomenon."

Analysis

Claim interpretation

The meaning of the claim language is not in dispute.

Technological arts

The Board held in Lundgren that the "technological arts" is not a separate and distinct test for statutory subject matter. Lundgren, 76 USP2d at 1388. Accordingly, the examiner's rejection in this case, to the extent that it is based on a "technological arts" test, is reversed.

Nevertheless, the examiner's reasoning that the method is not technological because no specific apparatus is disclosed to perform the steps and because the only way to perform the steps is by a human is not persuasive. "It is probably still true that, as stated in In re Benson, 'machines--the computers--are in the technological field, are a part of one of our best-known technologies, and are in the "useful arts" rather than the "liberal arts," as are all other types of "business machines," regardless of the uses to which their users may put them,' 441 F.2d at 688, 169 USPQ at 553, with the exception noted in

Gottschalk v. Benson, that a machine which executes a mathematical algorithm is not patentable under § 101." Lundgren, 76 USPQ2d at 1416. The cases do not imply that a process is not in the technological arts if it is not performed on a machine. Musgrave, the case the examiner relies on for the "technological arts" test, did not require a machine and, in fact, held that steps performed mentally could be patentable. Although we disagree that mental steps can be patentable, we conclude that a method performed by a human may be statutory subject matter if there is a transformation of physical subject matter from one state to another; e.g., "mixing" two elements or compounds to produce a chemical substance or mixture is clearly a statutory transformation although no apparatus is claimed to perform the step and although the step could be performed manually.

Application of the Lundgren and Guidelines tests

Lundgren

The three tests identified in the concurrence/dissent in Lundgren are applied below.

(1) Transformation

Claim 1, as is common with method claims, does not recite how the steps of "initiating a series of transactions between said commodity provider and consumers of said commodity," "identifying market participants," and "initiating a series of transactions between said commodity provider and said market

participants," are implemented. Appellants acknowledge "that the steps of the method need not be 'performed' on a computer" (Br6) and, thus, there is no implicit transformation of electrical signals from one state to another as happens in a computer. The steps do not transform any physical subject matter (matter or some form of energy) into a different state or thing. Claim 1 does not involve transformation of data, at least not in the usual sense of a specific, well-defined series of steps (i.e., an algorithm) performed on data as in a computer-implemented process. The last clause of claim 1, "such that said series of market participant transactions balances the risk position of said series of consumer transactions," indicates that what are transformed are the non-physical financial risks and legal liabilities of the commodity provider, the consumer, and the market participants having a counter-risk position to the consumer. Accordingly, the steps of claim 1 do not define a statutory "process" under § 101 using the "transformation" test.

Claim 2 depends on claim 1 and defines the commodity as energy and the market participants as transmission distributors. Claim 3 depends on claim 2 and defines the consumption risk as a weather-related price risk. These claims limit the commodity, the market participants, and the type of risk, but do not add any physical transformation. That the method is limited to a particular environment does not make it statutory subject matter.

Cf. Diamond v. Diehr, 450 U.S. at 191, 209 USPQ at 10 ("A mathematical formula as such is not accorded the protection of our patent laws, and this principle cannot be circumvented by attempting to limit the use of the formula to a particular technological environment." (Citations omitted.)). Claims 2 and 3 do not define a statutory "process" under § 101 using the "transformation" test.

Independent claim 4 is similar to claim 1, as modified by claims 2 and 3, but also defines the "fixed price" in terms of a mathematical expression. The mathematical expression does not add any transformation of physical subject matter. Claim 4 is directed to nonstatutory subject matter because the claim as a whole does not perform a transformation of physical subject matter, not because it contains a mathematical expression.

Claim 5 depends on claim 4 and defines the location-specific weather indicator as at least one of heating degree days and cooling degree days. This merely qualifies the data and does not add a transformation of physical subject matter. Claim 5 does not define a statutory "process" under § 101 using the "transformation" test.

Claim 6 depends on claim 4 and states that the energy provider seeks a swap receipt to cover the marginal weather-driven cost. It appears that a "swap receipt" is a payment from the other energy market participants, such as a distribution

company, involved in the swap (specification, pages 5-6). A swap transaction does not involve a transformation of physical subject matter from one state to another, so claim 6 does not define a statutory "process" under § 101 using the "transformation" test.

Claims 7 and 10 depend on claim 4 and recite steps for determining the energy price. The assumptions and mathematical procedures on data do not recite a physical transformation. The claimed subject matter is unpatentable because it does not define a physical transformation, not because it contains mathematical operations. Claims 7 and 10 do not define a statutory "process" under § 101 using the "transformation" test.

Claims 8 and 11 depend on claim 4 and recite steps for establishing a cap on the weather-influenced pricing. The assumptions and mathematical procedures on data do not define a physical transformation of subject matter. Claims 8 and 11 do not define a statutory "process" under § 101 using the "transformation" test.

Claim 9 depends on claim 1 and states that the commodity provider seeks a swap receipt to cover the price risk of the consumer transaction. As noted with respect to claim 6, a swap receipt does not involve a statutory transformation. Claim 9 does not define a statutory "process" under § 101 using the "transformation" test.

Therefore, claims 1-11 are directed to nonstatutory subject under 35 U.S.C. § 101 under the "transformation" test.

(2) "Abstract idea" exclusion

The subject matter of claim 1 is also directed to an "abstract idea" or, at least, it is nonstatutory because it broadly covers both a nonstatutory "abstract idea" and any specific physical implementation of it that might possibly be statutory. Claim 1 describes a plan or scheme for managing consumption risk cost in terms of a method. It is nothing but an disembodied "abstract idea" until it is instantiated in some physical way so as to become a practical application of the idea. The steps of "initiating a series of transactions" and the step of "identifying market participants" merely describe steps or goals in the plan, and do not recite how those steps are implemented in some physical way: the steps remain disembodied. Because the steps cover ("preempt") any and every possible way of performing the steps of the plan, by human or by any kind of machine or by any combination thereof, we conclude that the claim is so broad that it is directed to the "abstract idea" itself, rather than a practical implementation of the concept. While actual physical acts of individuals or organizations would, no doubt, be required to implement the steps, and while the actual implementation of the plan in some specific way might be considered statutory subject matter, the fact that claim 1 covers

both statutory and nonstatutory subject matter does not make it patentable. Thus, we further hold that claim 1 is directed to nonstatutory subject matter under the "abstract idea" exclusion.

We consider the "abstract idea" test to be in addition to the transformation test. There may be times where it is easier to analyze the subject matter as an "abstract idea" or where the "abstract idea" test can be used as a backup check on the transformation test. However, there may be times where the steps cannot fairly be considered an "abstract idea," e.g., because of actual physical steps, but where the claims do not define a transformation of physical subject matter.

Claim 2 depends on claim 1 and defines the commodity as energy and the market participants as transmission distributors. Claim 3 depends on claim 2 and defines the consumption risk as a weather-related price risk. This limits the commodity, the market participants, and the type of risk, but does not describe any particular way of performing the steps that would define a practical application, instead of an abstract idea. Claims 2 and 3 are not patentable because they are to an "abstract idea."

Independent claim 4 is similar to claim 1, as modified by claims 2 and 3, but also defines the "fixed price" in terms of a mathematical expression. A mathematical expression by itself is an abstract idea and, therefore, the combined subject matter is

also an "abstract idea." The claimed subject matter as a whole describes an "abstract idea."

Claim 5 depends on claim 4 and defines the location-specific weather indicator as at least one of heating degree days and cooling degree days. This merely qualifies the data and does not define a practical application. Claim 5 is directed to nonstatutory subject matter under the "abstract idea" exclusion.

Claim 6 depends on claim 4 and states that the energy provider seeks a swap receipt to cover the marginal weather-driven cost. It appears that a "swap receipt" is a payment from the other energy market participants, such as a distribution company, involved in the swap (specification, pages 5-6). Since no specific method of seeking the swap receipt is claimed, no practical application of the abstract idea is claimed. Claim 6 is not patentable because it is an "abstract idea."

Claims 7 and 10 depend on claim 4 and recite steps for determining the energy price. Some of the steps involve assumptions and mathematical procedures on data, which are considered an "abstract idea," and the combined subject matter is therefore still an "abstract idea." Claims 7 and 10 are not statutory subject matter because they are an "abstract idea."

Claims 8 and 11 depend on claim 4 and recite steps for establishing a cap on the weather-influenced pricing. Some of the steps involve assumptions and mathematical procedures on

data, which are considered an "abstract idea," and the combined subject matter is therefore still an "abstract idea." Claims 8 and 11 are an "abstract idea" and not statutory subject matter.

Claim 9 depends on claim 1 and states that the commodity provider seeks a swap receipt to cover the price risk of the consumer transaction. As noted with respect to claim 6, a swap receipt does not involve a practical application of the abstract idea. Claim 9 is an "abstract idea" and does not define statutory subject matter.

Therefore, claims 1-11 are directed to nonstatutory subject under 35 U.S.C. § 101 as an "abstract idea."

(3) Useful, concrete and tangible result

We held in (1) that the claimed subject matter on appeal does not fall within the definition of a "process" under § 101 because it does not transform physical subject matter to a different state or thing, and held in (2) that it is an "abstract idea." Claim 1 does not recite a "concrete and tangible result" or a "practical application" of the hedging plan under the State Street test, because a "concrete and tangible result" is interpreted to be the opposite of an "abstract idea" and requires some sort of physical instantiation. While the plan may be "useful" in the sense of having potential utility to society, a method that has not been implemented in some specific way is not considered practically useful in a patentability sense. Even if

the method is "useful," the State Street test requires the result to be "useful" and "concrete" and "tangible," so merely being "useful" is not enough. In addition, it is the result of the claimed process that must be "useful, concrete and tangible," not just one or more steps. Therefore, we also hold that claim 1 is directed to nonstatutory subject matter because it does not recite a "practical application" or produce a "concrete and tangible result" under the State Street test, to the extent that State Street applies to non-machine-implemented process claims.

Claims 2-11 are also rejected as nonstatutory subject matter because they are directed to an "abstract idea," as discussed, and do not recite a "practical application" or produce a "concrete and tangible result" under the State Street test.

Therefore, claims 1-11 are directed to nonstatutory subject under 35 U.S.C. § 101 because they do not recite a "practical application" or a "concrete and tangible result" under the State Street test.

Interim Guidelines

The Interim Guidelines are applied as follows.

(1) Within a statutory category

The claims are drafted as a series of steps, which the Interim Guidelines considers to be a "process" under § 101.

(2) Judicially recognized exceptions

The Interim Guidelines state that while "laws of nature, natural phenomena, and abstract ideas" are not eligible for patenting, a practical application may be. Only the "abstract idea" category is at issue. The Interim Guidelines say that a practical application can be identified by: (a) a physical transformation of an article to a different state or thing; or (b) the production of a "useful, concrete and tangible result." Presumably, the Interim Guidelines consider the absence of (a) and (b) to indicate an "abstract idea." And, if the claim recites a practical application, (c) it must not preempt every "substantial practical application" of the law of nature, natural phenomena, or abstract idea.

(a) Transformation of article

The claims do not recite a transformation of an article to a different state or thing and, thus, do not recite a practical application under this test. Although we consider this to be too narrow a test, we apply the Interim Guidelines as written.

(b) "Useful, concrete and tangible result"

The Interim Guidelines define these terms, but the definitions are not based on any guidance in State Street or AT&T.

Since the method has use to society, we conclude that it recites a "useful result." It seems that the utility requirement of § 101 is separate from the subject matter eligibility requirement, but this is not analyzed in the Interim Guidelines.

The Interim Guidelines state that "[t]he opposite of 'concrete' is unrepeatable or unpredictable," id., and cite a case dealing with utility under § 101. We do not find this definition of "concrete" in any dictionaries and, in our judgment, a case dealing with utility has little bearing on eligible subject matter. Accordingly, we do not apply this definition.

The Interim Guidelines state that "the opposite meaning of 'tangible' is 'abstract,'" 1300 O.G. at 146, so presumably a "tangible result" is the opposite of an "abstract idea." We determined in the Lundgren analysis that the claims are directed to an "abstract idea." Since the claims must meet all of the conditions of "useful" and "concrete" and "tangible," and claims 1-11 do not produce a "tangible result," they do not pass the "useful, concrete and tangible result test."

Therefore, claims 1-11 are directed to nonstatutory subject under 35 U.S.C. § 101 because they do not recite a "tangible result" under the Interim Guidelines.

(c) Preemption

We determined in the Lundgren analysis of the "abstract idea" exclusion that the claims are directed to the "abstract idea" because they cover any and every possible manner of performing the steps. Thus, it can also be said that the claims "preempt" the concept in the claimed methods. Therefore, claims 1-11 are directed to nonstatutory subject under 35 U.S.C. § 101 because they "preempt" under the Interim Guidelines.

Conclusion

For all of the reasons stated above, we conclude that claims 1-11 are not directed to statutory subject matter under 35 U.S.C. § 101. Appellants' arguments, addressed next, have been considered in making this decision, but are not persuasive.

Appellants' arguments

Briefs

Appellants argue that they "are unaware of any requirement, statutory or otherwise, which requires a method claim to specify a specific apparatus upon which the method is to be performed" (Br5) and that "no 'specific apparatus upon which the process can be performed' need be specified when claiming a method" (Br5).

It is true that process claims are not required to recite the means (structure) for performing the steps. See Cochrane v. Deener, 94 U.S. 780, 787 (1877); Lundgren, 76 USPQ2d at 1400-01. Although the examiner rejected the claims as nonstatutory subject

matter, in part, because they did not recite a specific apparatus, this does not form any part of the bases for our new ground of rejection. A method claim can be a "process" under § 101 even when performed by hand. It is the presence of a transformation of physical subject matter that is important, not how the transformation is accomplished. Nevertheless, the absence of any apparatus in appellants' claims is evidence that the claims do not transform physical subject matter as a machine inherently would, and do not recite a practical application of the "abstract idea."

Appellants note that "[t]he specific computer hardware or specific software that one might use to implement the process is not part of the invention" (Br6) and acknowledge "that the steps of the method need not be 'performed' on a computer" (Br6). It is argued that while some steps could be done with a computer, or aided by the use of a computer, they need not be (Br7).

This confirms that appellants do not intend to limit the claims to a machine implementation. Cf. In re Prater, 415 F.2d 1393, 162 USPQ 541 (1969) (the court held that process claim 9, which read on a mental process augmented by pencil and paper markings, which appellants acknowledged was not their invention, as well on as a machine implemented process, fails to comply with the requirement of § 112, second paragraph, which requires "claims particularly pointing out and claiming the

subject matter which the applicant regard as his invention"). The fact that the steps are not performed on a computer does not make the method nonstatutory. However, where, as here, no machine is claimed, there is no implied physical transformation of physical subject matter (e.g., electrical signals) from one state to another that would nominally indicate a statutory process (and invoke the State Street test).

Appellants argue that the Federal Circuit stated in AT&T that "[s]ince the claims at issue in this case are directed to a process in the first instance, a structural inquiry is unnecessary" and, thus, there is no requirement of a specific apparatus on which the process can be performed (Br8; RBr3).

It is true that process claims are not required to recite the means (structure) for performing the steps. Unlike claims written in means-plus-function language, which require supporting structure in the written description, it is not necessary to inquire whether process steps are supported by physical structure in the specification. However, we contend that a "process" under § 101 must recite steps that transform physical subject matter and must recite more than the "abstract idea."

Appellants argue that the examiner has relied on outdated case law in support of the rejection (Br8-9). In particular, the examiner's reliance on Schrader is argued to be inappropriate because it uses the outdated Freeman-Walter-Abele test which

focuses on the "physical limitations" requirement (Br8). It is argued (Br8) that the test for patentable subject matter is whether the end result of the claimed process is "useful, concrete and tangible." It is argued that Warmerdam does not apply because "the claimed method involves steps not directed to the solving of a mathematical equation or algorithm" (Br9).

We agree that the Freeman-Walter-Abele test in Schrader is no longer in vogue because it is no longer required to investigate whether a claim contains a mathematical algorithm. Although the examiner rejected the claims as nonstatutory subject matter, in part, because they "solve[] a purely mathematical problem" (FR4), our new ground of rejection is not based on the presence of mathematical algorithms, but focuses on the lack of a physical transformation and the lack of a practical application of the "abstract idea" of risk management in the claims as a whole. Nevertheless, we briefly comment on Schrader and Warmerdam. The court stated in AT&T that Schrader was "unhelpful" because "[t]he focus of the court in Schrader was not on whether the mathematical algorithm was applied in a practical manner since it ended its inquiry before looking to see if a useful, concrete, tangible result ensued," AT&T, 172 F.3d at 1360, 50 USPQ2d at 1453. It is noted that Judge Plager authored both the AT&T and Schrader opinions. Schrader was to a non-machine-implemented method of conducting an auction and Warmerdam

was to a non-machine-implemented method for generating a data structure. It is not clear why the "practical application, i.e., 'a useful, concrete and tangible result'" test would necessarily be definitive in these situations since State Street and AT&T both involved transformation of data by a machine.

Appellants note that the examiner stated that the method was not drawn to the "technological arts" "because the specification does not disclose specific hardware or software" (Br9). It is argued that "[c]ase law has addressed the issue of whether or not an apparatus is required for a process to be in the "technological arts'" (Br9). It is urged (Br10) that "technological arts" is synonymous with "useful arts" as it appears in Article 1, Section 8 of the Constitution, citing Musgrave and Waldbaum, 457 F.2d 997, 173 USPQ 430 (CCPA 1972). Therefore, it is argued (Br10):

One can therefore conclude that no special meaning need be given to the phrase "technological arts," a phrase that has been devised and defined by the courts, apart from the Constitutional requirement that an invention be in the "useful arts." It is clear from Musgrave that no apparatus need be specified for a process that can be carried out by a human without the aid of an apparatus, as can the present invention under appeal.

We agree with appellants that "technological arts" means "useful arts" as stated in the Constitution, and that apparatus is not required to be claimed in order for a method claim to be a "process" under § 101. The Board held in Lundgren that "technological arts" is not a separate and distinct test for

statutory subject matter. Although commentators have read this as eliminating a "technology" requirement for patents, this is not what was stated or intended. "The 'technology' requirement implied by 'technological arts' is contained within the definitions of the statutory classes." Lundgren, 76 USPQ2d at 1430. All "machines, manufactures, or [man-made] compositions of matter" are things made by man and involve technology. Methods which recite a transformation of physical subject matter from one state or thing to another, and which do not fall within one of the exclusions for "laws of nature, physical phenomena, and abstract ideas" involve technology and are a "process" under § 101. In our opinion, the statement in Musgrave that a process that can be performed mentally or by a machine is statutory subject matter as long as it is in the "technological arts" has been implicitly overruled because it has never been adopted by the Supreme Court in Gottschalk v. Benson or subsequent cases, and the CCPA and the Federal Circuit have not continued to apply this line of reasoning. A method that is so broadly claimed that it reads on performing the steps mentally should be considered an "abstract idea."

Appellants argue that "[t]he claimed method is patentable because it produces a 'useful, concrete and tangible result'"

(Br10). Appellants refer to the following statement in State Street, 149 F.3d at 1373, 47 USPQ2d at 1601:

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

It is argued that "even if the present claimed method only calculated 'first and second fixed rates' as it does in the steps (a) and (c), the method would be patentable, because the fixed rates would be considered a 'useful, concrete and tangible result' as was the share price in State Street [] (here, the fixed rates calculate represent a 'risk position'))" (Br11).

Appellants fail to note that the holding in State Street is clearly limited to "transformation of data ... by a machine." AT&T involved a machine-implemented process. Machines are physical things that nominally fall within the class of a "machine" in § 101, and machine-implemented methods inherently act on and transform physical subject matter, such as objects or electrical signals, and nominally fall within the definition of a "process" under § 101. No machine is required by the present claims. Until instructed otherwise, we interpret State Street and AT&T to address the "special case" of subject matter that nominally falls within § 101, a general purpose machine or

machine-implemented process, but which is nonetheless unpatentable because the machine performs an "abstract idea." A general purpose computer which merely performs a mathematical algorithm (one type of abstract idea) on data, where the data is not representative of physical activity or objects, does not produce a "useful, concrete and tangible result."

Appellants argue that the present method goes much further than merely applying a mathematical algorithm (which first appears in independent claim 4) to calculate the first and second fixed rates, and the calculations are only part of the overall process (Br11). It is argued (Br11): "The 'practical application' of the mathematical algorithm in this case is the transactions that are set up using the fixed rates as price points, thereby creating a 'risk position' which minimizes the risk involved with the fluctuation of the price of a commodity for both the buyer and the seller of the commodity." It is further argued (Br11-12):

The overall method also provides a result that is "useful, concrete and tangible." The provision of energy in a cost-efficient manner for all parties involved has value to society in general, and is therefore "useful." Based on the risk positions established by the method disclosed in the application, various parties, including end users, utility companies and resource suppliers are risking real money: therefore, the result is "tangible" and "concrete."

It is argued that the test for statutory subject matter is set forth in AT&T, and "[w]ith respect to process, and especially

Appeal No. 2002-2257
Application 08/833,892

processes involving mathematical algorithms, the result was whether or not a 'useful, concrete and tangible result' ensued from the application of the process" (RBr3). It is further argued (RBr3):

In this case, execution of the process results in the calculation of first and second fixed rates for the buying and selling of commodities, specifically, energy commodities. These fixed rates represent a "risk position." The rates are used by a commodity broker to establish buy/sell positions with both end users and suppliers of the commodity, with the risk for the established positions balancing each other. This is a "useful, concrete and tangible result" and, as a result, the Appellants submit that the process is statutory subject matter.

The present rejection does not rely on the presence of a mathematical algorithm. Claim 1 does not appear to directly or indirectly recite a mathematical algorithm. The Federal Circuit has said that the Freeman-Walter-Abele test is of little value, so there is no longer any need to investigate the presence of a mathematical algorithm. The holding in State Street is limited to the context of "transformation of data ... by a machine" and AT&T involved a machine-implemented process. Thus, it does not appear that the "useful, concrete and tangible result" test applies in the present situation. To the extent the "useful, concrete and tangible result" test is generally applicable, appellants' arguments indicate the difficulty in applying terms that have never been defined. We conclude that a "concrete and tangible result" requires a transformation of physical subject

matter and/or evidence that the subject matter is more than an "abstract idea." None of the claims recites a transformation of physical subject matter and the claims recite an "abstract idea" rather than a practical implementation of that idea.

Appellants argue that the examiner errs in applying the Guidelines for Computer-Related Inventions, MPEP § 2106 (which is based on the guidelines at 61 Fed. Reg. 7478, 1184 O.G. 87, see footnote 6), "because the Appellants have made it clear that a computer is not part of the invention" (RBr2). It is argued that the examiner erred in applying the standards from the Computer Guidelines and then concluding that "because there is no computer claimed [sic], that no practical application exists, and, as a result, the invention is not statutory" (RBr2).

We agree with appellants that the Computer Guidelines do not apply to the instant non-machine-implemented process claims. We also agree that it was incorrect for the examiner to determine generally that there can be no practical application of a process without a computer and that subject matter cannot be within the "technological arts" without a computer. The presence of a computer makes it much easier to find statutory subject matter, but a method can be statutory subject matter without a machine.

It is argued that "although several steps of the claimed process can be aided through the use of a computer, a computer is not necessary to implement the process" (RBr2) and "[t]herefore

it is unclear whether the claimed invention should be considered a computer-related invention or not" (RBr2-3). Appellants argue that "assuming, arguendo, that the claimed invention can be considered a computer-related invention, ... it is still statutory subject matter" (RBr3).

We agree with appellants that the claims are not directed to a computer-related invention, but obviously do not agree that the claims are directed to statutory subject matter.

Oral argument

At the oral argument, it was argued that the claims are presumptively directed to a "process" under § 101 because they recite a series of steps. It was argued that § 101 states that "any ... process" is patentable, the statute must be interpreted broadly, and that any change is up to Congress.

As we have made clear throughout this opinion, we disagree. It was stated in State Street:

The plain and unambiguous meaning of § 101 is that any invention falling within one of the four stated categories of statutory subject matter may be patented, provided it meets the other requirements for patentability set forth in Title 35, i.e., those found in §§ 102, 103, and 112, ¶ 2.

The repetitive use of the expansive term "any" in § 101 shows Congress's intent not to place any restrictions on the subject matter for which a patent may be obtained beyond those specifically recited in § 101. Indeed, the Supreme Court has acknowledged that Congress intended § 101 to extend to "anything under the sun that is made by man." Thus, it is improper to read limitations into § 101 on the subject matter that may be patented where the legislative

Appeal No. 2002-2257
Application 08/833,892

history indicates that Congress clearly did not intend such limitations.

. . . .

The Supreme Court has identified three categories of subject matter that are unpatentable, namely "laws of nature, natural phenomena, and abstract ideas." [Footnotes and citations omitted.]

149 F.3d at 1372-73, 47 USPQ2d at 1600. This is not inconsistent with our position that not every series of steps is a "process" under § 101 because the Supreme Court's definition of a "process" requires a transformation of physical subject matter from one state to another. It would be helpful if the Federal Circuit would address this question directly. If every series of steps is presumptively a "process" under § 101, then it would be almost impossible to hold that such a claim is directed to nonstatutory subject matter because the "abstract idea" exclusion technically refers to subject matter that is not within § 101 (although case law suggests it can refer to subject matter that is within § 101 "but for" some special condition).

Appellants stated that the "rule of nature" and "natural phenomenon" exclusions do not apply, so the rejection must be based on the "abstract idea" exclusion. It was argued that Alappat, 33 F.3d at 1542 n.18, 31 USPQ2d at 1556 n.18, states that abstract ideas constitute disembodied concepts or truths that are not useful until reduced to some practical application. Applicants proposed that the test should be that any series of

Appeal No. 2002-2257
Application 08/833,892

steps having a "real world effect" is a "process" under § 101, because a claim having a real world effect is not an abstract idea and is useful, and under such a test it would not be necessary to look at exceptions. It was argued that the transfer of commodities and the assumption of risk in the claims are real world effects.

It is not clear that adding another test would be useful: it is no easier to determine if there is a "real world effect" than it is to determine whether there is a "practical application." It is hard to define the line between a patentable "practical application" (or "real world effect") and an unpatentable "abstract idea." In this case, the fact that the claims are so broad that they cover ("preempt") any and every way to perform the steps indicates that what is being claimed is the "abstract idea" itself. That is, the claims read as if they are describing the concept without saying how any of the steps would be specifically implemented to produce a "real world effect." In our opinion, the transformation of physical subject matter test is a more objective way to perform the § 101 analysis for non-machine-implemented method claims.

For the reasons stated above, we conclude that appellants' oral arguments are not persuasive.

Appeal No. 2002-2257
Application 08/833,892

CONCLUSION


The rejection of claims 1-11 under 35 U.S.C. § 101 is sustained.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 CFR § 1.136(a)(1)(iv).

AFFIRMED

Charles E. Frankfort
CHARLES E. FRANKFORT
Administrative Patent Judge


LEE E. BARRETT
Administrative Patent Judge


JENNIFER D. BAHR
Administrative Patent Judge


MARK NAGUMO
Administrative Patent Judge

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Appeal No. 2002-2257
Application 08/833,892

McQUADE, Administrative Patent Judge, concurring.

The quest for a bright line test for determining whether a claimed invention embodies statutory subject matter under 35 U.S.C. § 101 is an exercise in futility.

35 U.S.C. § 101 provides that "[w]hoever 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." Congress intended this provision to encompass anything under the sun that is made by man. See Diamond v. Chakrabarty, 447 U.S. 303, 309 (1980). Nonetheless, § 101 has limits and does not embrace every discovery within its statutory terms. Excluded from patent protection are laws of nature, physical phenomena and abstract ideas. See id.; see also Diamond v. Diehr, 450 U.S. 175, 185 (1981); Parker v. Flook, 437 U.S. 584, 589 (1978); and Gottschalk v. Benson, 409 U.S. 63, 67 (1972).

The proper inquiry requires a claim to be considered as a whole. See Flook, 437 U.S. at 594; Diehr, 450 U.S. at 188; AT&T Corp. v. Excel Communications, Inc., 172 F.3d 1352, 1357, 50 USPQ2d 1447, 1451 (Fed. Cir. 1999); and In re Alappat, 33 F.3d 1526, 1543-44, 31 USPQ2d 1545, 1557 (Fed. Cir. 1994). The focus here should center on the essential characteristics of the claimed subject matter rather than on the particular

Appeal No. 2002-2257
Application 08/833,892

statutory category to which the claim is nominally directed: process, machine, manufacture, or composition of matter. See State Street Bank & Trust Co. v. Signature Fin. Group, Inc., 149 F.3d 1368, 1375, 47 USPQ2d 1596, 1602 (Fed. Cir. 1998). In this regard, undue weight should not be given to the sort of claim limitations that exalt form over substance and would allow a competent draftsman to mask non-statutory subject matter. See Flook, 437 U.S. at 590.

Hence, any assessment to determine whether a claim recites statutory subject matter should be fact-specific and conducted on a case-by-case basis. This approach, of course, does not easily lend itself to a test. The pointlessness of nevertheless attempting to settle on a test is exemplified by the tortured rise and sudden fall of the so-called Freeman-Walter-Abele test.¹ See AT&T, 172 F.3d at 1359, 50 USPQ2d at 1453, quoting State Street, 149 F.3d at 1374, 47 USPQ2d at 1601 ("After Diehr and Chakrabarty, the Freeman-Walter-Abele test has little, if any, applicability to determining the presence of statutory subject matter"). Moreover, the Supreme Court has implicitly cautioned against reliance on tests in this area. See Benson, 409 U.S. at 71 ("We do not hold that no process patent could ever qualify

¹ This test evolved from the holding in In re Freeman, 573 F.2d 1237, 197 USPQ 464 (CCPA 1978), as modified by In re Walter, 618 F.2d 758, 205 USPQ 397 (CCPA 1980), and further by In re Abele, 684 F.2d 902, 214 USPQ 682 (CCPA 1982).

if it did not meet the requirements of our prior precedents. . . . It is said we freeze process patents to old technologies, leaving no room for the revelations of the new, onrushing technology. Such is not our purpose."). Per se rules or tests, while arguably easy to apply, simply do not afford the flexibility needed to keep pace with new developments in technology and the law.

As for the merits of the present case, the appellants have not separately argued the patentability of any claim apart from the others. Thus, claims 1-11 stand or fall together. See In re Young, 927 F.2d 588, 590, 18 USPQ2d 1089, 1091 (Fed. Cir. 1991); and In re Wood, 582 F.2d 638, 642, 199 USPQ 137, 140 (CCPA 1978). Claim 1, reproduced in the majority opinion, is representative.

Claim 1 recites a method for managing the consumption risk costs of a commodity sold by a commodity provider at a fixed price. In other words, claim 1 pertains to a method of doing business.²

As pointed out in the majority opinion, the steps recited in claim 1

do not recite any specific way of implementing the steps; do not expressly or impliedly recite any physical transformation of physical subject matter,

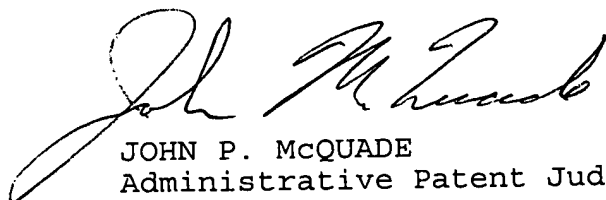
² This, in and of itself, does not render the subject matter recited in claim 1 non-statutory. The so-called "business method" exception to statutory subject matter was ill-conceived and has been put to rest. See State Street, 149 F.3d at 1375, 47 USPQ2d at 1602.

Appeal No. 2002-2257
Application 08/833,892

tangible or intangible, from one state into another; do not recite any electrical, chemical, or mechanical acts or results; do not directly or indirectly recite transforming data by a mathematical or non-mathematical algorithm; are not required to be performed on a machine, such as a computer, either as claimed or disclosed; could be performed entirely by human beings; and do not involve making or using a machine, manufacture, or composition of matter [page 6, supra].

Considered collectively, these are powerfully persuasive factual indicators (not tests) that the method recited in claim 1 is, at its core, a disembodied business concept representing nothing more than a non-statutory abstract idea. That the "initiating" and "identifying" steps recited in the claim are drafted as acts required to be performed is of no moment. Given the full context of the claim, these acts are nominal in nature and merely serve to superficially couch the appellants' abstract idea in a method or process format.

For these reasons, the examiner's determination that claim 1, and claims 2-11, which stand or fall therewith, are directed to non-statutory subject matter under 35 U.S.C. § 101 is well founded.


JOHN P. McQUADE
Administrative Patent Judge

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Appeal No. 2002-2257
Application 08/833,892

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