Software, Business Methods, and the Subject Matter of Patents

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Why § 101?

- First door that must be unlocked
- Recent interest by PTO, Federal Circuit, and the Supreme Court:
  - Laboratory Corp. v. Metabolite Labs., 126 S. Ct. 2921 (2006) (Breyer, J. dissenting)
  - In re Comiskey, 499 F.3d 1365 (Fed. Cir. 2007)
  - In re Nuijten, 500 F.3d 1346 (Fed. Cir. 2007)
  - In re Bilski, No. 2007-1130, *en banc*, argued May 8
- Currently not addressed in reform legislation
- § 101 is the new "it" statute

Topics for discussion

- Patent-eligible subject matter
  - What § 101 includes
  - What § 101 does not include
- Expanding scope of § 101
  - Rise of Software Patents
  - Death of the Business Method "Exception"
- Section 101 has teeth
  - In re Comiskey
  - In re Nuijten
- The coming storm?
  - In re Bilski

Patent-eligible subject matter
What § 101 includes and does not include

U.S. Constitution

Article I, § 8:

> Congress shall have Power . . . to promote the Progress of Science and useful Arts by securing for limited Times to Authors and Inventors the exclusive Rights to their respective Writings and Discoveries.

Patent-eligible subject matter

35 U.S.C. § 101

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor . . .

- Patent Act of 1793 (“art” instead of “process”)
- Patent Act of 1952:

  “anything under the sun that is made by man”

Patent-eligible subject matter

35 U.S.C. § 101

- New
- Useful
- Categories:
  1. Process
  2. Machine
  3. Manufacture
  4. Composition of matter

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Process

- §100(b):
  - The term “process” means process, art, or method, and includes a new use of a known process, machine, manufacture, composition of matter, or material.

- Diamond v. Diehr, 450 U.S. 175, 183-84 (1981):
  - “A process is a mode of treatment of certain materials to produce a given result. It is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing.”

  - “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.”

Patent-eligible subject matter

Machine

- Burr v. Duryee, 68 U.S. (1 Wall) 531, 570 (1863):
  - "a concrete thing, consisting of parts or of certain devices and combinations of devices."

Manufacture

- Am. Fruit Growers v. Brogdex, 283 U.S. 1, 11 (1931):
  - "the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties or combinations, whether by hand-labor or by machinery"
  - "anything made for use from raw or prepared materials"

Composition of Matter

- Diamond v. Chakrabarty, 447 U.S. 303, 308 (1980)
  - "All compositions of two or more substances and all composite articles, whether they be the results of chemical union, or of mechanical mixture, or whether they be gases, fluids, powders, or solids."

Exceptions

- Laws of nature
- Natural phenomena
- Abstract ideas
  - E.g., mathematical algorithms without some type of practical application
  - State Street Bank: practical application can be shown by “a useful, concrete, and tangible result”

Expanding scope of § 101: Software and business method patents

1970s – Supreme Court Says: No

- Gottschalk v. Benson (1972)
  - Method for converting binary-coded decimal numerals into pure binary numerals
  - "[N]o substantial practical application except in connection 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."
- Parker v. Flook (1978)
  - Method for updating alarm limits in a chemical reaction: (1) measure present value; (2) use an algorithm to calculate updated value; (3) adjust alarm limit to updated value
  - "[I]f a claim is directed essentially to a method of calculating, using a mathematical formula, even if the solution is for a specific purpose, the claimed method is nonstatutory."

1980s – Court says: Yes, Diehr

- Diamond v. Diehr (1981)
  - Method for curing rubber using Arrhenius equation
  - "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."
  - "[The] claims involve the transformation of an article, in this case raw, uncured synthetic rubber, into a different state or thing."
  - Although the process "employs a well-known mathematical equation . . . They seek only to foreclose from others the use of that equation in conjunction with all of the other steps . . ."

Expanding scope of § 101 - Software

Diehr legacy?

- Use of mathematical algorithms in a process is not per se unpatentable
- A process claim that involves particular machines is patentable subject matter
- A process that transforms or reduces an article to a different state or thing is patentable subject matter

Statements on State Street

- Before State Street Bank, business methods were not patentable subject matter
  - FALSE! "The business method exception has never been invoked by this court, or the CCPA, to deem an invention unpatentable."
- The claim in State Street Bank was a pure business method claim
  - FALSE! Claim was directed to a machine, not a method

State Street Bank

- Hub and spoke mutual fund investment system
- 1 independent claim:

  A data processing system for managing financial services configuration of a portfolio partnership … comprising:

  computer processor means for processing data;

  storage means for storing data on a storage medium;

  . . .
- District Court: Invalid under § 101:
  1. "mathematical algorithm" exception
  2. "business method" exception

State Street Bank

- Panel: **Rich**, Plager, Bryson
- "Properly construed in accordance with § 112, ¶ 6, [claim 1] is directed to a machine . . . . A 'machine' is proper statutory subject matter under § 101."
- The "mathematical algorithm" exception does not apply because it is not "an abstract idea"
  - Practical application is demonstrated because the machine transforms data using mathematical calculations to produce "a useful, concrete, and tangible result"
- There was/is no per se "business method" exception
  - "We take this opportunity to lay this ill-conceived exception to rest. . . . Since the 1952 Patent Act, business methods have been, and should have been, subject to the same legal requirements for patentability as applied to any other process or method."

State Street Bank Legacy?

- Business methods are treated like any other method; no inquiry is made into whether a claim involves "business"

- "Useful, concrete, and tangible result" (from In re Alappat) helps distinguish between an "abstract idea" and a patent-eligible application of that idea according to § 101

Section 101 has teeth:
In re Comiskey and In re Nuijten

Claim in In re Comiskey

- A method for mandatory arbitration resolution . . . comprising:
  - Enrolling a person and a document in a mandatory arbitration system;
  - Incorporating specific binding arbitration language into the document
  - Requiring a complainant to request arbitration
  - Conducting arbitration resolution
  - Providing support to the arbitration
  - Determining an award or decision that is final and binding

In re Comiskey

- PTO rejected claims on § 103 prior art
- At oral argument, however, the Federal Circuit requested supplemental briefing on § 101 and whether or not Comiskey's claim was directed to an "abstract idea"

In re Comiskey

- Process involving an abstract idea must have some practical application
  - See Benson; see also State Street Bank ('useful, concrete, tangible result")
- Further, such a process must be "embodied in, operate on, transform, or otherwise involve another class of statutory subject matter, i.e., a machine, manufacture, or composition of matter."
  - See Diehr ("Transformation . . . is the clue to the patentability of a process claim that does not include particular machines")
- Claims at issue are directed to mental processes; even if they have a practical application, they are not tied to a machine, manufacture, or composition of matter.
  - Thus, it is an "abstract idea" that is not patentable subject matter

In re Nuijten

- Adding a low-distortion watermark to a signal
  - Claims 1-10: process for adding the watermark to the signal: **Allowed**
  - Claims 11-13: a device that performs the process of adding the watermark: **Allowed**
  - Claim 15: storage medium that holds the resulting watermarked signal: **Allowed**
  - Claim 14: the watermarked signal itself: **?**

In re Nuijten – What is a signal?

- **Process?**: **No.** Claims cover a thing, not an act or series of acts. Benson
- **Machine?**: **No.** Not "a concrete thing, consisting of parts, or of certain devices and combination of devices." Burr v. Duryee
- **Manufacture?**: Tricky, but **no.** A manufacture is an "article" produced by man. Signals are "transient" and "fleeting" and therefore cannot be an "article."
- **Composition of Matter**: **No.** Not a "chemical union, nor a gas, fluid, powder, or solid." Chakrabarty

In re Nuijten

- Linn, J. dissenting:
  - "Non-transitory" or "non-fleeting" is not in any Supreme Court definition of "manufacture"
    - "the production of articles for use from raw or prepared materials by giving to these materials new forms, qualities, properties or combinations, whether by hand-labor or by machinery"
    - "anything made for use from raw or prepared materials"
  - Claim meets these definitions: some input material—pulse of energy or stone tablet—is given a new form, quality, or property by human action or machine.
  - A signal is therefore a "manufacture"
  - Further, the claimed signal is "new" and "useful"

The Coming Storm?
In re Bilski

The Coming Storm?

In re Bilski

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.

- Taken en banc, sua sponte
- Hearing: May 8, 2008

In re Bilski

- Amici may file without leave of court
- ~30 amici briefs were filed!
  - Financial services and sales sector
  - Computer and software sector
  - Biotechnology and pharmaceuticals sector
  - Legal associations
  - Industry associations
  - Academics
- 2 amici were permitted argument at the hearing

In re Bilski

1. Whether claim 1 claims patent-eligible subject matter?
2. What standard should govern in determining whether a process is patent-eligible subject matter?
3. (a) Whether the claimed subject matter is not patent-eligible because it constitutes an abstract idea or mental process;

   (b) 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?
5. Whether it is appropriate to reconsider State Street Bank and AT&T in this case?

In re Bilski

2. What standard should govern in determining whether a process is patent-eligible subject matter?
   - "anything made by man under the sun"
     - Exceptions: laws of nature, natural phenomena, and abstract ideas
   - "useful, concrete, and tangible result"
     - State Street Bank, etc.
     - Some say is included in above, others say in addition to
   - "physical transformation" or "tied to particular machine"
     - Diehr, Benson
     - Some say transformation cannot be "trivial" or "insignificant"
   - "technological art" requirement
     - U.S. Constitution, Art. I, § 8, cl. 8
     - *But*, some argue that economics is a technological art
   - "stable, predictable, and reproducible" process

In re Bilski

3(b). When does a claim that contains both mental and physical steps create patent-eligible subject matter?

- "when it transforms subject matter" or "when it is tied to a specific machine" and/or the result is "useful, concrete, and tangible"
- Mental steps alone may be patentable subject matter
- Mental steps alone should never be patentable subject matter

In re Bilski

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?
   - Near all said no. These are sufficient, but not necessary conditions—safe harbors of patent-eligible processes.
     - See Diehr, Flook, and Benson

In re Bilski

5. Whether it is appropriate to revisit or overrule State Street Bank and AT&T in this case?
   - No. Both decisions are in harmony with Supreme Court precedent and/or are proper expansions on that precedent
   - No, but it should clarified that they are limited and do not represent separate "tests" for § 101
   - Yes, "useful, concrete, and tangible result" has no basis in Supreme Court precedent

In re Bilski

- Other interesting points made by amici
  - Congress blessed business method patents by enacting 35 U.S.C. 273(a)(3): “the term ‘method’ means a method of doing or conducting business”
  - Arbitrary subject matter boundaries only require careful drafting (“magic words”)
  - “Bad patents” should be dealt with using Sections 102, 103, and 112
  - Economics is now a “useful art” or “technology” as contemplated by the Constitution
  - Tax methods should be exempt from patenting because otherwise would preempt free use of the law

The Coming Storm?

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.

1. Is claim 1 patent-eligible subject matter?
3. (a) If not, is it because it constitutes an abstract idea or mental process?

Thank you.