

# **Current Issues in Patentable Subject Matter**

**Katherine J. Strandburg**

**DePaul University College of Law**

**Visiting NYU School of Law (2007-08)**

## **THE SUBJECT MATTER BOUNDARIES OF THE PATENT SYSTEM**

**35 USC 101: new and useful process, machine,  
manufacture, or composition of matter**

**TRIPS: patents must be available in “all fields of  
technology”**

**“Anything under the sun made by man”**

**EXCEPT**

**Products of Nature**

**Scientific phenomena**

**Abstract ideas**

- What do these exceptions mean in the digital age?**
- Are there other implicit exceptions?**

**LEAD-UP TO THE CURRENT FOCUS ON PSM**

- **What to do about software?**
- **What to do about business methods (particularly as implemented in software and as inspired by the .com boom)?**

**LEAD-UP TO THE CURRENT FOCUS ON PSM:  
SUPREME COURT:**

**Gottschalk v. Benson (1972) (BCD to binary transformation:**

- cannot patent an idea
- cannot “wholly preempt” a formula
- “transformation . . . to a ‘different state or thing’ is the clue to the patentability of a process claim that does not include particular machines”

**BUT**

- “we do not hold that no process patent could ever qualify if it did not meet the requirements of our prior precedents”

**LEAD-UP TO THE CURRENT FOCUS ON PSM:**

**SUPREME COURT:**

- **PARKER V. FLOOK (1978) Method for computing “alarm limit” for petrochemical processes**
  - **Mathematical formula in the abstract**
  - **Token, conventional, post-solution activity not sufficient to transform unpatentable “principle” into patentable process**
  - **Scientific principle as expressed in algorithm reveals relationship that has always existed**
  - **No indication how to obtain variables in formula, no disclosure of chemical processes at work**

**LEAD-UP TO THE CURRENT FOCUS ON PSM:**

**SUPREME COURT:**

- **DIAMOND v. DIEHR (1981) Process for curing rubber using computer and Arrhenius law**
  - **Not an abstract formula, process for curing rubber**
  - **Claims must be considered as a whole**
  - **Patentable when claim containing formula implements it in “structure or process” “performing function which patent laws were designed to protect (e.g. transforming or reducing article to different state or thing)”**
  - **Formula combined with other steps of putting rubber in press, closing mold, etc.**

**LEAD-UP TO THE CURRENT FOCUS ON PSM:**

**CCPA:**

- **FREEMAN-WALTER-ABELE TEST (early 1980s)**
  - Is there a mathematical algorithm?
  - If so, is it applied in any manner to physical elements?

**LEAD-UP TO THE CURRENT FOCUS ON PSM:**

**FEDERAL CIRCUIT: Drift from requiring physical transformation**

- **1982 – 1989 no PSM opinions**
- **IWAHASHI (1989): computer voice recognition**
  - Claiming as a machine rather than a process
- **ARRYTHMIA RESEARCH (1992): Using ECG signals to predict heart attack complications**
  - Mathematical algorithm, but result “not just an abstraction”, measure of specified heart activity

## **LEAD-UP TO THE CURRENT FOCUS ON PSM:**

**FEDERAL CIRCUIT:** Drift from requiring physical transformation

• **IN RE ALAPPAT (1994):** Technique for reducing jaggedness of oscilloscope display

- Abstract ideas constitute disembodied concepts which are not “useful” from a practical standpoint standing alone
- Transforming data not always unpatentable
- Specific machine producing useful, concrete, tangible result

## **LEAD-UP TO THE CURRENT FOCUS ON PSM:**

**FEDERAL CIRCUIT:** OPENING THE FLOODGATES?

• **STATE STREET BANK V. SIGNATURE FINANCIAL (1998):**

**Data processing system for Hub and Spoke Financial Services Configuration**

- Reading of Diehr: Mathematical algorithms not patentable “to the extent they are merely abstract ideas” . . . until reduced to some type of practical application”
- Final share price = Practical application = useful, concrete, and tangible result
- No business method exception

**LEAD-UP TO THE CURRENT FOCUS ON PSM:  
FEDERAL CIRCUIT: OPENING THE FLOODGATES?**

• **AT&T V. EXCEL COMM. (1999):** “PIC” data field giving info about recipient’s phone service added to message record

- Claimed as a process, not a machine
- Proscription against patenting “mathematical algorithm” limited to mathematical algorithms in the abstract
- useful, nonabstract result -- facilitates billing of long-distance calls

**USEFUL, CONCRETE, TANGIBLE RESULT TEST =  
NO PATENTABLE SUBJECT MATTER REJECTIONS**

**LEAD-UP TO THE CURRENT FOCUS ON PSM:  
THE SUPREME COURT STIRS:**

• **Ebay v. MERCEXCHANGE (2006):** standard for injunctions

- **Kennedy, Stevens, Souter, Breyer concurrence:**
  - “injunctive relief may have different consequences for the burgeoning number of patents over business methods . . . . The potential vagueness and suspect validity of some of these patents may affect the calculus . . . .”

**LEAD-UP TO THE CURRENT FOCUS ON PSM:  
THE SUPREME COURT STIRS:**

**•LABCORP V. METABOLITE LABS (2006) (Cert DIG):**

**Claim:** A method for detecting a [vitamin] deficiency . . . comprising . . . Assaying a body fluid for an elevated level of total homocysteine; and correlating an elevated level . . . with a deficiency.

**-BREYER, STEVENS, SOUTER dissent:**

- “This Court has never [promulgated a ‘useful, concrete, tangible result’ test] and, if taken literally, the statement would cover instances where this Court has held the contrary”
- no physical transformation because can use any assay at all
- patent law seeks to avoid dangers of overprotection just as surely as overprotection; PSM doctrine is one way to sail between those shoals

**RECENT CASES: FED CIR RESPONDS**

**• In re Nuijten (Fed. Cir. 2007), Cert Pet. Filed 5/9/08, digital watermarking technology**

**Claim:** *A signal with embedded supplemental data, the signal being encoded in accordance with a given encoding process and selected samples of the signal representing the supplemental data, and at least one of the samples preceding the selected samples is different from the sample corresponding to the given encoding process.*

- **transient electric signal is not PSM**
- **though man-made and physical it is not a tangible article and hence not a “manufacture”**
- **Linn, dissent:**
  - “new” in 101 means “made by man”
  - “useful” in 101 means achieving real-world results with sufficient directness and specificity (not abstract)
  - electrical signal is PSM

## RECENT CASES: FED CIR RESPONDS

### • In re Comiskey (Fed. Cir. 2007), arbitration method

•**Claim:** A method for mandatory arbitration resolution regarding one or more unilateral documents comprising the steps of: enrolling a person and one or more unilateral documents . . . in a mandatory arbitration system . . . ; incorporating arbitration language . . . in the . . . document . . . ; requiring a complainant to submit a request for arbitration resolution to the mandatory arbitration . . . ; conducting arbitration . . . ; . . . and

•determining an award . . . .

- **abstract ideas not patentable (two parts)**
  - **must have claimed practical application AND**
  - **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**

## RECENT CASES: FED CIR RESPONDS

### • In re Bilski (BPAI), hedging method for commodities trading

•**Claim:** A method for managing the consumption risk costs of a commodity . . . comprising . . . : (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 . . . corresponding to a risk position of said consumer; (b) identifying market participants . . . having a counter-risk position . . . ; 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.

- **no physical structure or tie to transformation**
- **could be performed by human without aid**
- **abstract idea, “method that has not been implemented in some specific way is not considered practically useful in a patentability sense.”**

## **RECENT CASES: FED CIR RESPONDS**

- **In re Bilski ((Fed. Cir. en banc arg. 5/8/08)**
- **Whether claim 1 . . . claims patent-eligible subject matter under 35 U.S.C. § 101?**
- **What standard should govern in determining whether a process is patent-eligible subject matter under section 101?**
- **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?**
- **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?**
- **Whether it is appropriate to reconsider State Street Bank . . . , and AT&T Corp. . . .?**

## **RECURRING THEMES**

- **Tangibility – Physical transformation**
- **Mental steps – Concern with Patenting Human Activity**
- **Abstractness – Insufficient specificity; “preempting” a formula or algorithm; discretionary, skill-based steps**
- **Trade-off between benefits and costs of patent protection**
- **Patents are meant for “useful arts”, “technology”**
- **Bright line rule v. flexible standard**
- **Concern about adapting to new technologies**

## **PROPOSALS IN BILSKI BRIEFS**

- **Stick with useful, concrete, tangible, result test and use 102, 112, 103 to police patentability**
- **No per se rule, stick to Supreme Court exceptions**
- **Business methods should be patentable, concern with adopting test based on old technology**
- **Physical transformation required, watch for insignificant post-solution activity or token machine**

## **PROPOSALS IN BILSKI BRIEFS**

- **No patent on mental activity, First Amendment concerns**
- **“Technological component” required**
- **Factor-based test seeking to combine various concerns**
- **(1) have a concrete, useful, and tangible result *and* (2) be “sufficiently machine-like”**
- **Software and business methods are not patentable**
- **process must be “stable, predictable, and reproducible” and its result must be “useful, concrete, and tangible.”**

## **THE MISSING THEORY OF PATENTABLE SUBJECT MATTER**

- **What is the goal of patentable subject matter doctrine?**
  - **Incentive-based arguments**
    - **No incentives needed for business method development**
      - user innovation
    - **Copyright incentives sufficient for software**
    - **Separate incentives not needed for intermediate “platform” inventions (e.g. research tools, scientific principles)**
  - **Autonomy-based arguments**
    - **Don’t patent thought or other basic or expressive human activities**

## **THE MISSING THEORY OF PATENTABLE SUBJECT MATTER**

- **What is the goal of patentable subject matter doctrine?**
  - **Fairness-based arguments**
    - **Don’t patent basic tools of social life, e.g. tax patents, business methods basic to competitive economy**
  - **Public domain/patent cost arguments**
    - **Some patents have high social cost, incremental incentive not worth the social cost**

## THE MISSING THEORY OF PATENTABLE SUBJECT MATTER

- **Focus of Bilski argument**
  - difficulty of drawing a line
  - explains emphasis on physical transformation
- **Response depends on assessment of costs of not drawing a line**
  - useful, concrete, tangible result puts heavy emphasis on predictability, administrability
  - other approaches reflect concern about social costs of patents and respect for the “that’s patentable??!” intuition

## PREDICTIONS??

- **Fed Cir likes bright lines**
  - see “teaching, suggestion, motivation to combine”
  - see Festo
  - see injunction test pre-eBay, etc.
- **But Fed Cir sees Supreme Court handwriting on the wall?**
  - unlikely to stick to floodgates version of useful, concrete, tangible result
  - unlikely to reverse State Street or AT&T
  - some kind of Comiskey-type test most likely
  - unlikely to adopt a factor approach
- **My favorite test (today)?**
  - some form of “technology” requirement, but what is technology?
    - stable, predictable, reproducible + useful, concrete, tangible
    - physical transformation requirement too constraining for today’s technology

**WHAT'S YOUR PREDICTION?**