The Impact of the *In re Bilski* Case on Computer Software and Business Method Patents

Webinar Presented By:

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Affects Any "Process Patents"

In re Bernard L. Bilski and Rand A. Warsaw
Case no. 2007-1130 (Fed. Cir. Oct. 30, 2008)

IMPLICATIONS:

- **"Business Methods" May Not Be Patentable**
- **Many Software Patents May Be At Risk**
- **Pending Applications May Need New Claims**

What Is “Patentable Subject Matter”?

- Machines
- Manufacture (articles)
- Compositions of Matter
- Processes

(35 U.S.C. § 101)

What Is A “Process”?

- A series of steps or actions that provides a desired result …
- Not defined in the statute.
- Machines, articles, matter are *physical.*
- “Process” is only category that, perhaps, encompasses the intangible / nonphysical / human-effected.

What Is A "Process"?

- *In re Bilski* has examined the notion of a "process" as patentable subject matter.
- Reaffirmed the "machine-or-transformation" test for patent-eligibility of a process under 35 U.S.C. §101.
- In order to be a patentable process, a process must either (or both):
  - **Transform** an article to a different state or thing, and/or
  - Be "**tied to a particular machine.**"

Procedural History of *In re Bilski*

- Messrs. Bilski and Barnard filed their patent application on April 10, 1997.
- Claims were rejected by examiner and appealed to Board of Patent Appeals and Interferences ("BPAI").
- BPAI issued decision sustaining the rejection of all the claims in an order Sept. 26, 2006.
- An appeal from the BPAI was made to the Court of Appeals for the Federal Circuit (CAFC).
- Prior to disposition by the regular three-judge panel, the CAFC *sua sponte* ordered *en banc* review.

The *Bilski* Process Claim at Issue

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

(see next slide)

The *Bilski* Process Claim at Issue (cont.)

- (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.

Basic Rejection

- *Examiner's rejection:* "[T]he 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."
- The Applicants admitted that claims were not limited to operation on a computer.
- The process involved abstract intangible entities: transactions, legal relationship, market participants having a "counter-risk position," and more "transactions" to balance risk positions.
- The process was of the type that could readily be carried out by a human being – without using any kind of machine.
- Nothing *physical* (not even data) appeared to be transformed.

Holding of *In re Bilski*

- "[T]he applicable test to determine whether a claim is drawn to a patent-eligible process under § 101 is the machine-or-transformation test set forth by the Supreme Court and clarified herein."
- Decision of the BPAI affirmed (claims rejected).

Supreme Court Basis for *In re Bilski*

- The CAFC spoke favorably of and relied upon several prior Supreme Court decisions:

Gottschalk v. Benson, 409 U.S. 63 (1972).

Parker v. Flook, 437 U.S. 584 (1978).

Diamond v. Diehr, 450 U.S. 175 (1981).

- So, in many respects, the rationale of *In re Bilski* is nothing new.

Supreme Court Basis for *In re Bilski*

- *Gottschalk v. Benson* (1972) involved the conversion of binary-coded decimal (BCD) data to a pure binary format, found merely an effort to patent an algorithm.
- No machine; involved transformation of unspecified data.
- *Diamond v. Diehr* (1981) involved a computer-controlled process of making tires, definitely a physical transformation that was also tied to a machine.
- Both tests of "machine-or transformation" were met.
- These cases are, for now, the primary guides for determining patentable subject matter.

Holding of *Diamond v. Diehr*

- “For purposes of 101, a ‘process’ is an act, or a series of acts, performed upon the subject-matter to be transformed and reduced to a different state or thing. If new and useful, it is just as patentable as is a piece of machinery.”
- “When a claim containing a mathematical formula implements or applies the 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 101's requirements.”

Corollaries from from *Diamond v. Diehr*

- **Corollary 1:** Mere field-of-use limitations are generally insufficient to render an otherwise ineligible process claim patent-eligible.
- This seems inconsistent with goal of encouraging meaningful limitations to claim scope, but the main idea is to avoid pre-emption of all uses of a fundamental principle.
- **Corollary 2:** Insignificant post-solution activity will not transform an unpatentable principle into a patentable process.
- These are to prevent clever claim drafting, e.g. appropriating the Pythagorean formula by saying it was "only applied to land surveying" or "storing the angle values in a memory."

What is a “Particular Machine”?

- It is not clear what exactly is a “particular machine.”
- Issues specific to machine implementation were not before the *Bilski* court: “We leave to future cases the elaboration of the precise contours of machine implementation, as well as … whether or when recitation of a computer suffices to tie a process claim to a particular machine.”
- Plainly, computer-controlled tire making equipment is a particular machine (*Diamond v. Diehr*).
- How much structure of a machine must now appear in a patent claim?
- Is a programmed general purpose computer “particular” enough? (Probably not.)

What is a “Particular Machine”?

- How much of an **Internet- or computer-enabled** business system is a “particular machine”?
- Must a claim recite the network connections?
- Multi-core processors with divided responsibilities that appear in the claims?
- The network carrier equipment?
- Specific protocols?
- The typical three-layer computing model (presentation layer, application layer, database layer)?

What is an “Article Transformation”?

- *Gottschalk v. Benson*: “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.”
- Although not specifically stated, it seems an “article” is something physical, tangible.
- Human process implementations such as “contract formation” or “managing risks” have no physicality.

What About "Business Method" Patents?

- 1998 *State Street Bank* case – a process may be patentable if it provides a "concrete, useful, and tangible" result.
- The *State Street Bank* case kicked off a wave of controversial patent filings on so-called "business methods."
- This case may no longer be relied upon.
- *In re Bilski* reaffirmed the "machine-or-transformation" test as **the** test for patentable subject matter of a process, not just "a" test.

“Business Method” Patents Gone?

- A “pure” business method type patent claim is often intangible, recites abstract steps, and/or involves abstract constructs such as “initiating transactions” or “legal relationships.”
- Business method type patent claims often set out broad, human-implemented type processes, without requiring the use of a computer or machine-implementation.
- Business method patents usually do not define aspects of a process that involve some arguable kind of transformation of something physical or some tie to a particular system (machine) with features specific to the process.
- *State Street Bank* case can no longer be relied upon (discredited).

What About "Data" Transformation?

- Is **transformation of data** patentable subject matter?
- Certain types of data transformations might still be patentable, especially if the transformation involves data that represents physical things.
- *In re Abele* case involved X-ray data that clearly represented physical and tangible objects such as the structure of bones, organs, and other body tissues – found patentable.
- Still uncertainty in this area.

What About Software Patents?

- Door is left open to software patents as general proposition.
- Question remains whether a general purpose computer will qualify as a "particular machine." **But probably <u>not</u>**.
- "[T]he facts here [*In re Bilski*] would be largely unhelpful in illuminating the distinctions between those software claims that are patent-eligible and those that are not."
- "We leave to future cases the elaboration of the precise contours of machine implementation, as well as the answers to particular questions, such as whether or when recitation of a computer suffices to tie a process claim to a particular machine."

What About Other "Information-Age Processes"?

- The *Bilski* court let through a ray of hope for patents on new technologies:

  "The raw materials of many information-age processes … are electronic signals and electronically-manipulated data. And some so-called business methods, such as that claimed in the present case, involve the manipulation of even more abstract concepts such as legal obligations, organizational relationships, and business risks. Which, if any, of these processes qualify as a transformation or reduction of an article into a different state or thing constituting patent-eligible subject matter?"

- But the court specifically **did not answer** this question.

Implications of *In re Bilski*

- Some already-issued patents may not be enforceable.
- Pending patent applications that do not support a tie to a particular machine or a physical transformation may never issue.
- New claim sets may be needed for pending patents – if supported.
- Industries involving Internet business processes, financial services, insurance, payment systems, and some computer software, will have to rethink their patent strategies.
- Prospective investors / M&A will have new due diligence to conduct.

USPTO Developments After *Bilski*

- ***Ex parte Bo Li***
  Appeal 2008-1213, Appln. No. 10/463,287 (USPTO Board of Patent Appeals and Interferences Nov. 6, 2008).

- ***Ex parte Halligan and Weyand***
  Appeal 2008-1588, Appln. No. 09/757,206 (USPTO Board of Patent Appeals and Interferences Nov. 24, 2008).

Unanswered Questions

- Will there be an appeal of *In re Bilski*?
- Will Congress take up patent reform in 2009, under Obama administration?
- How will District Courts and subsequent CAFC panels interpret the decision?
- What about business method type claims involving transformations of monetary values in financial accounts – is this enough "physicality"?
- What about other things like values of insurance coverage? Risk calculations that are tied to particular transactions?

Practical Questions

- If I have already filed a patent application and see issues from *In re Bilski*, what should I do?
- If I want to patent a business process, should I develop some kind of computer implementation to get around the *Bilski* rules?
- My company has been sued for infringement under a "business method" patent. How does the *Bilski* decision help me to defend our position?
- Will *Bilski* make it more expensive to file and prosecute patent applications? If so, why?
- How does the *Bilski* decision impact the filing of provisional patent applications?

The Impact of *In re Bilski*

THE END

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The Impact of *In re Bilski*

APPENDIX

Gottschalk v. Benson

The claim in this case involved a method of converting signals from binary-coded decimal form into binary by these steps:

(1) storing the binary coded decimal signals in a reentrant shift register,

(2) shifting the signals to the right by at least three places, until there is a binary ‘1’ in the second position of said register,

(3) masking out said binary ‘1' in said second position of said register,

(4) adding a binary ‘1’ to the first position of said register,

(5) shifting the signals to the left by two positions,

(6) adding a ‘1’ to said first position, and

(7) shifting the signals to the right by at least three positions in preparation for a succeeding binary ‘1’ in the second position of said register.

Gottschalk v. Benson

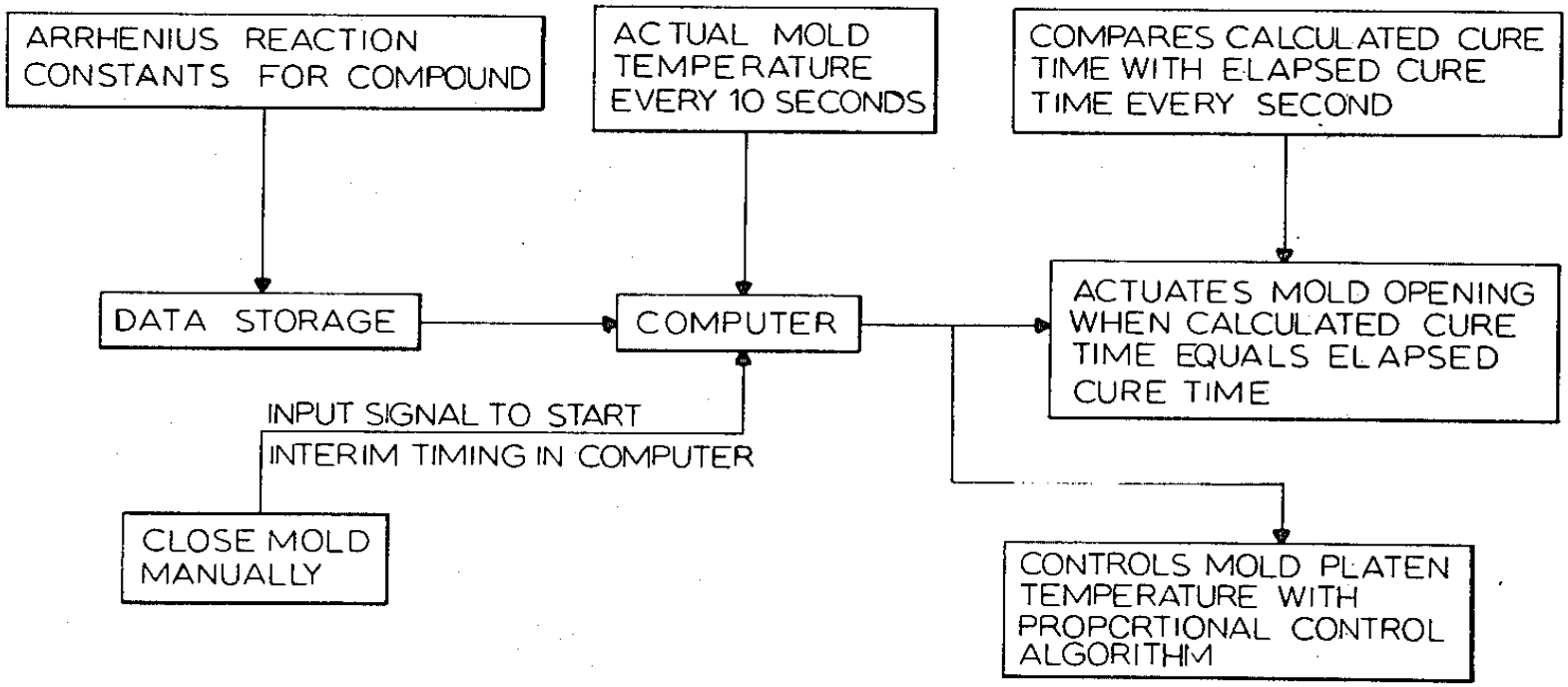
- The claims were not tied or otherwise associated with any particular machine.
- The there was no article that was transformed or reduced … just some binary-coded decimal (BCD) signals.
- Those BCD signals were generic and did not represent anything in particular.
- The court stated: “Transformation 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.”

Parker v. Flook

- Claim was directed to using a particular mathematical formula to calculate an “alarm limit” for an unspecified chemical reaction.
- The Court rejected the claim as being drawn to the formula itself.
- The claim did not include any limitations specifying how to select a margin of safety, or weighting factors, or the chemical processes at work, or the mechanism of monitoring the variables, or how to set off the alarm.
- The claim was thus not limited to any particular chemical or other transformation, nor was it tied to a particular machine.

Diamond v. Diehr

- U.S. Patent No. 4,344,142 “Direct Digital Control of Rubber Molding Process”



Reconciling Prior Cases

- *In re Nuijten* case involved the unpatentability of electronic signals as a form of "manufacture."
- This case was specifically not discussed in *In re Bilski*, leaving the decision intact.
- Claims in this case were worded improperly – the claim was directed to a "signal" having certain properties.
- Other claims (including process claims) in Nuijten's application were allowed, so the message was clear – use a proper claim format!

Reconciling Prior Cases

- *In re Comisky* case, 499 F.3d 1365 (2007), claims were found directed to the mental process of arbitrating a dispute to decide its resolution.
- Claims read like application of human intelligence to the solution of a practical but abstract problem – resolving a dispute.
- Quoting *Benson*: "[M]ental processes, and abstract intellectual concepts are not patentable, as they are the basic tools of scientific and technological work."
- No machine or transformation involved.

Reconciling Prior Cases

- *In re Schrader* case – method of conducting an auction of multiple items in which winning bids were selected in a manner that maximized the total price of all the items – unpatentable – was merely a mathematical optimization algorithm.
- No specific machine or apparatus was recited.
- Claim seemed to be appropriating a mathematical optimization algorithm.
- Relying on *Flook*, CAFC said a step of "recording" the bids was insignificant post-solution activity.

Ex parte Bo Li

- Bo Li (IBM) filed a patent application for a method and a computer program product relating to a computer-usable medium having a computer readable program code embodied thereon, adapted to be executed to implement a method for generating a report.
- The method steps of the claim are thus embodied in a "product" claim.
- This is called a "Beauregard claim" from *In re Beauregard*, 53 F.3d 1583 (Fed. Cir. 1995).

Ex parte Bo Li

- Claim recited “providing a system, wherein the system comprises distinct software modules,” where the software modules provided function for logic processing, configuration file processing, data organization, and data display.
- Claim further recited method steps carried out by the various modules such as “parsing a configuration file …”, “extracting report data …”, “receiving … definition data from the configuration file processing module …”, and “organizing, by the data display organization module … a data display … .”

Ex parte Bo Li

- The claim was finally rejected by the USPTO examiner under 35 U.S.C. § 101 as directed to non-statutory subject matter, and the applicant appealed to the BPAI.
- BPAI said that a Beauregard claim is (still) considered statutory as a product claim.
- Because the claim presents a number of software components, such as the claimed logic processing module, configuration file processing module, data organization module, and data display organization module, that are embodied on a computer readable medium, this combination is statutory.

Implications of *Ex parte Bo Li*

- Leaves door clearly open to patent computer software using "product" (article) format.
- Functionality and method steps put into modules.
- Will this be followed by District Courts? *In re Beauregard* is a CAFC case.
- This case did not involve any type of business process – strictly a process relating to the processing of data.
- All the operations were on data relating to a "report" – nothing particularly *physical* about this.
- There's always prior art! (BPAI maintained the art rejection.)

Ex parte Halligan and Weyand

- Related to an invention for identifying trade secrets (odd).
- Claims recited a programmed computer method based upon the six factors from First Restatement of Torts for identifying trade secrets based on "information" about the possible trade secret.
- Claim recited steps where the programmed computer was "providing a predetermined criteria for evaluating a potential trade secret …", "receiving a numerical score value for the potential trade secret ...", "calculating a metric from the received numerical score …", and "determining that the potential trade secret is a trade secret when the calculated metric exceeds a predetermined threshold value."

Ex parte Halligan and Weyand

- Examiner rejected claims as non-statutory, appeal to BPAI.
- BPAI found that the programmed computer method claims failed to impose any meaningful limits on the claim's scope as it added nothing more than a general purpose computer that has been programmed in an unspecified manner to implement the functional steps recited in the claims.
- In other words, there was no "particular machine."

Ex parte Halligan and Weyand

- BPAI also found that the pure process (method) claims failed the second prong of the machine-or-transformation test because the data (information about trade secrets, which are intangible assets) did not represent physical and tangible objects.
- Because data did not represent physical and tangible objects, the BPAI did not reach the issue of whether a calculation of a number based on certain inputs was a sufficient "transformation" of data to render the process patent-eligible.

Ex parte Halligan and Weyand

- The BPAI left the door open to patenting some computer-implemented inventions:
- (1) “[T]ransformation of data is sufficient to render a process patent-eligible if the data represents physical and tangible objects, i.e. transformation of such raw data into a particular visual depiction of an object on a display.”
- (2) [T]ransformation of data is insufficient to render a process patent-eligible if the data does not (i) specify any particular type of data and (ii) does not specify (a) how or (b) where the data was obtained or (c) what the data represented.” (Emphasis and numbering/lettering within quote supplied.)

Ex parte Halligan and Weyand

- Case suggests these approaches to claiming:
- (1) Physicality. Have data represent physical and tangible objects, i.e. transform raw data into a particular visual depiction of an object on a display.
- (2) Data Specificity. If data does not represent something physical, then:
  - **(a) Have claims recite some kind of data transformation,**
  - **(b) Specify particular type of data, and**
  - **(c) Specify (i) how or (ii) where the data was obtained or (iii) what the data represents.**