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Software and Business Method Patents

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Software patents in the US

In the Past: Software only protected under Copyright Law

- Traditionally software was not considered as a patentable subject matter
- Reason:
- 35 U.S.C. 101 - process, machine, manufacture, or composition of matter
- Software = algorithm = list of instructions (and not process, machine, or manufacture or composition of matter)
- Copyright Law protects literary, dramatic, artistic, or musical works
- Software = literary work (!)
- Problem – protection only in case of “copying” but using the same algorithm to independently make a new software not considered infringement

Two step test

- **Software claims subject to two step test (in Re Freeman, 1977):**
- **1. Does the claim recite a mathematical algorithm?**
- **2. If it does – is the claim directed at preventing (pre-empt) the use of that mathematical algorithm or just covers application of that algorithm in relation to physical elements (apparatus)**
- **(pure mathematical algorithm – unpatentable)**

Transformation

- In Diamond v. Diehr 450 U.S. 175 (1981):
- (algorithm, input:temp. reading, output: time to cure synthetic rubber)
- What is claimed? “fundamental principle” (unpatentable) or “application of that principle” (patentable)
- Claim “transforming or reducing an article to a different state or thing” – patentable.
- What is “an article”?
- What is “transforming or reducing to a different state or thing”?

State Street 149 F.3d 1368 (Fed. Cir. 1998)

- Financial software disclosed but claim directed to a machine (means-plus-function).
- “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."
- This case is considered by many to be significant with respect to the patentability of “methods of doing business”

In Re Bilski 545 F.3d 943, 88 U.S.P.Q.2d 1385 (2008)

- Patent application claimed a method for managing consumption risk costs of commodity provider.
- Method steps (claimed in claim 1):
- (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

In Re Bilski 545 F.3d 943, 88 U.S.P.Q.2d 1385), (Fed. Cir. 2008

- **A claimed process is patent-eligible if:**
- **1) it is tied to a particular machine or apparatus, OR**
- **2) it transforms a particular article into a different state or thing**
- **AKA: Machine/Transformation test**

Bilski v. Kappos (US Supreme Court 08-964 561 U.S. ___) Issued on June 28, 2010

- **Machine/Transformation test is a good test but not exclusive test of patentability under art. 101.**
- **“Process” in art. 101 not necessarily precluding “business methods”.**
- **Upheld in re Bilski**

Bilski v. Kappos (USPTO memorandum to Examiners Issued in June 28, 2010

- **Continue to use the Machine/Transformation test to determine patentability under art. 101.**
- **If a claimed method meets the machine/transformation test it is likely patent-eligible under sec. 101, unless there is a clear indication that the method is directed at an abstract idea.**
- **If the claimed invention does not meet the M/T test the examiner should reject the claim under sec. 101, unless there is a clear indication that it is NOT directed at an abstract idea.**
- **Upon rejection (abstract idea) the Applicant should be given an opportunity to explain why the claimed method is NOT drawn to an abstract idea.**

)Business methods (1

- For many years, the USPTO took the position that "methods of doing business" were not patentable.
- The subsequent allowance of patents on computer implemented methods for doing business was challenged in the 1998 *State Street Bank v. Signature Financial Group*, (47 USPQ 2d 1596 (CAFC 1998)). The court affirmed the position of the USPTO and rejected the theory that a "method of doing business" was excluded subject matter. The court further confirmed this principle with *AT&T Corporation v. Excel Communications, Inc.*, (50 USPQ 2d 1447 (Fed. Cir. 1999)).
- The USPTO continued to require, however, that business method inventions must apply, involve, use or advance the "technological arts" in order to be patentable. This was based on an unpublished decision of the U.S. Board of Patent Appeals and Interferences, *Ex Parte Bowman*, 61 USPQ2d 1665, 1671 (Bd Pat. App. & Inter. 2001). This requirement could be met by merely requiring that the invention be carried out on a computer.
- In October 2005 the USPTO's own administrative judges overturned this position in a majority decision of the board in *Ex Parte Lundgren*, Appeal No. 2003-2088 (BPAI 2005). The board ruled that the "technological arts" requirement could not be sustained, [11] as no such requirement existed in law.

)Business methods (2

- 2006 Justice Kennedy (US supreme court) commented that some business methods were of "potential vagueness and suspected validity" (*eBay Inc. v. MercExchange, L.L.C.)*
- October 30, 2008 – In Re Bilski . Many business-method patents granted in the last decade would fail Bilski's patentability test. *Bilski* announces a two-branch test of patent-eligibility for processes:
- 1) transform an article from one state or thing to another – most business methods will not pass this test.
- 2) processes that do not make patent-eligible transformations are patent-eligible only if they are claimed as carried out with a "particular machine." What is a *particular machine* (unclear). It appears that a programmed general-purpose digital computer is not a *particular machine*, for this purpose. It is unclear whether a particular machine must be novel and unobvious, and specially adapted for carrying out the new process.

Software patents in Europe

)European Patent Convention (EPC) – art. 52(2

- (2) The following in particular shall not be regarded as inventions within the meaning of paragraph 1:
- (a) discoveries, scientific theories and mathematical methods;
- (b) aesthetic creations;
- (c) schemes, rules and methods for performing mental acts, playing games or doing business, and programs for computers;
- (d) presentations of information.

In practice

- In 1986 (EPO T 0208/84 (1986): Vicom) EPO started granting software patents claiming “process for [using computer equipment] characterized by…”
- Problem: the software itself, when saved on a computer readable medium is itself NOT a process.
- In 1988 (EPO T 1173/97 (1998): IBM Computer Program Product) EPO accepted programming claims in the form: “computer program characterized by that…(it can be used to execute the method steps of claim… - dependent claim)”.
- Over 30’000 software patents granted by 2003 (at a rate of some 3000 patents annually!).

European Commission Directive on "patentability "of computer implemented inventions

- European Commission's Directorate for the Internal Market (under Monti's successor Frits Bolkestein) submitted in 2002 proposal 2002/0047 for a Directive "on the patentability of computer-implemented inventions".
- Computer program – patentable if providing a "technical contribution" to the prior art (interpreted by the EPO Board of Appeal to mean a further technical effect that goes beyond the normal physical interaction between the program and the computer).
- 2005 – European Parliament voted against the proposal (and proposed amendments).
- Calls to stop granting software patents (explicitly unpatentable according to EPC art. 52(2)) . On-going debate.

)In practice (2006-now

- The "contribution approach" or "technical effect approach", used to assess what was regarded as an invention within the meaning of Art. 52(1) and (2), was abandoned.
- It now suffices that a physical entity or activity involves technical means to be considered as an invention within the meaning of Article 52(1) EPC. Having technical character is an implicit requisite of an "invention" within the meaning of Article 52(1) EPC (requirement of "technicality").
- But the patentable subject matter test of Article 52(2) and (3) is only the first step towards patentability. Computer programs can also be refused and are often refused on the ground of lack of inventive step, which can be relatively easier to assess in certain cases.

Software patents in Israel

Software patents in courts

- 1) Shunia Rozenthal v. the Patent Registrar (Civ. Suit 501/80).
- Computing process for CNC machines was claimed.
- Justice Golgberg upheld the Registrar's rejection, stating that an invention which in essence is calculation or computing is unpatentable.

- 2) United Technologies v. the Patent Registrar (Various Appeals 23/94).
- Software for controlling fuel supply to a helicopter's engine was claimed.
- Israel Patent Registrar rejected the application.
- Appeal (23/94, Jerusalem District Court, Justice Brenner) – reversed the Registrar's decision, stating that "a physical system that incorporates software as an integral part is patentable".
- Implies: The process carried out by the system with the embedded software must produce a tangible result, which involves physical results.

IL Patent Registrar Decisions

- 1) Cancellation proc. Of IL Patent 142049 (Malinek, Dec. 2005) – Noah Shlomovitch (vice Registrar) decided:
- Intellectual processes and computer processing are not technological products, and products relating to content are not patentable just because they can be presented by a computer.

- 2) Opposition proc. 126864, 125755 (Biosense, April 2009) - Noah Shlomovitch (vice Registrar) decided:
- The mere use of a computer does not render an invention patentable on its own merit.
- Would the method steps that are claimed to be carried out by a computer be patentable still if carried out by a person? Only if the answer is yes – the claimed invention can be considered patentable.

IL Patent Registrar Memorandum Dec. 31, 2010 (last day in office)

- 1. The claimed invention should be within a technical field (as stipulated in act. 3 to the Israeli Patent Law).
- 2. The invention is to be examined as a whole, without separating software components from hardware components, and without focusing on the software itself, rather on the contribution of the invention to prior art. That contribution ought to be expressed in the claims.
- 3. The invention as a whole should present a contribution which has a real expression in a technological field.
- 4. The contribution of the invention, as it is claimed, should be novel and present an invention step, as required in art. 3 of the Patent Law. Alternatively, the means (as a whole) with which the invention achieves such contribution should be novel and possess an inventive step.
- 5. When a claimed method merely recites software steps, such method will not be considered patentable. Software on its own cannot be regarded as a technological expression, as it is protected by copyrights.
- (Promised to publish explanation soon, but this was delayed indefinitely….)

Business methods in Israel

- Patent Registrar Decision (Apl. 131733, Eli Tamir, Sept. 2006)
- Claimed a “method for promoting sales of goods and services”.
- Patentable inventions must be “in any technological field”.
- Patent attorneys must be skilled in one of a number of technological fields.
- Patent Examiners – also skilled in one of a number of technological fields.
- Business methods are related to economists and other non-technological experts.
- Test: “Hybrid invention” – some of it patentable and some unpatentable.
- Computer implemented business method (hardware – patentable, software, unpatentable per se).
- Hybrid invention – patentable if the patentable and unpatentable parts make up a combination (and not mere aggregation).

- **Style of claims of a software invention:**
- **1. A method for ___ comprising:**
- **doing…**
- **doing…**
- **7. A non-transitory computer readable medium having stored thereon instructions for _____,which when executed by a processor cause the processor to perform the method of:**
- **doing…**
- **doing…**
- **13. A system for ____, comprising a processor configured to:**
- **do…**
- **do…**

THANK YOU!