

WIPO-MOST Intermediate Training Course on
Practical Intellectual Property Issues in Business
November 10 to 14, 2003

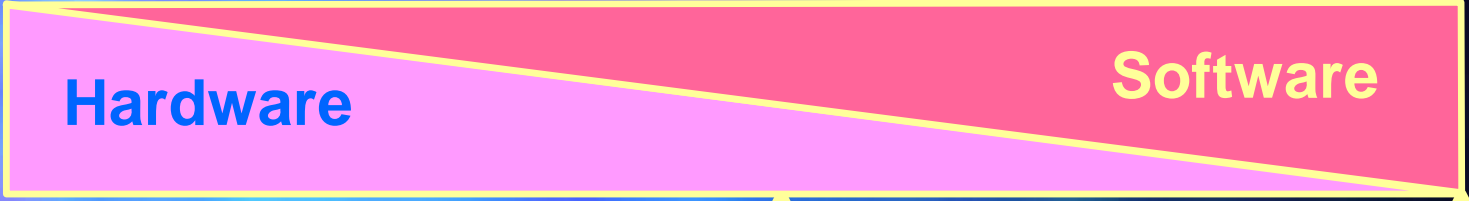
Patentability of Computer Software and Business Methods

Tomoko Miyamoto

Patent Law Section

Patent Policy Department

World Intellectual Property Organization



Hardware

Software

**Hardware
(calculator)**

**Hardware controlled by
software (washing machine)**

**Hardware the technical feature of
which is characterized by software
(Chinese word processing machine)**

**Software embodied on a machine
readable medium (CD-ROM for
Chinese word processing)**

**Software through network (Interactive game
software downloaded from an Internet server)**

Computer program

- n Necessity of IPR protection
- n Copyright protection
 - TRIPS Article 10(1)
 - WCT Article 4
- n Limitation

A Computer program performs “functions”
through “expression”.

Computer-implemented inventions are treated in the same manner under the law as any other inventions.

Conditions of Patentability

- n Patentable subject matter
- n Novelty
- n Inventive step (Non-obviousness)
- n Industrial application (Utility)
- n Sufficient disclosure

Business methods

- n Off-line business methods
- n On-line business methods

Economic impact of e-commerce, financial business

Questions

- * Compatible with the current patent law?
- * What are software/business methods related inventions that merit patent protection?

TRIPS Agreement

n Article 27.1

In principle, "Patents shall be available for any inventions, whether product or process, in all fields of technology, provided that they are new, involve an inventive step and are capable of industrial application."

n Article 27.2 and 3 do not expressly provide the exclusion of computer programs or business methods in general from patentability.

n No definition of the terms "invention" and "technology"

Arguments FOR software patents

- n Copyright does not protect “ideas” behind software.
- n Promote development of the software industry and computer-related industry.
- n Software also exhibits technical behavior.
- n Advantages for SMEs and independent software developers.

Arguments AGAINST software patents

- n Duplication with copyright protection.
- n Inhibit competition.
 - cumulative, sequential innovation
 - interoperability between programs, systems and networks
- n SMEs and independent software developers can't afford patents.

Arguments concerning business method patents

FOR

- n Innovative business methods equally contribute to the economic development.

AGAINST

- n Distort competition
 - fundamental role to economy
 - not proportional to exclusive patent rights
- n Practical difficulties
 - quality of patents (expertise, prior art, inventive step, sufficient disclosure)

Issues

- n “Inventions” under the patent law should have a technical character?
- n If so, what kind of “technicality” is required?
- n Formats of claims?
 - **“A computer system comprising...”**
 - **“A method of processing Chinese words in a computer comprising...”**
 - **“A computer readable medium having stored thereon computer-executable instructions for performing the steps comprising...”**
 - **“A computer program product comprising...”**
- n How to overcome practical difficulties?

US - patentable subject matter

n 35 U.S.C. Section 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 therefore...”

“process” = “process, art or methods”; includes “a new use of a known process, machine, manufacture, composition of matter, or material”

No “technical effect” or “technical contribution”
requirement

US - Exceptions are set by case laws

Diamond vs Chakrabarty: "anything under the sun that is made by man" is patentable --- life form

Diamond vs Diehr: exceptions to patentability
laws of nature, abstract ideas, natural phenomena

In re Allapat: practical application of an abstract idea, however, is statutory

In re Alappat
33 F.3d 1536 [Fed. Cir.1994]

- n Software program to create a smooth display of numeric data on an oscilloscope
- n An invention that produces “a useful, concrete and tangible result” is patentable subject matter
- n If the claimed subject matter “as a whole” is a disembodied mathematical concept, it is not patentable.

US - business methods (1)

- n A business method that provides a “useful, concrete and tangible result” is patentable subject matter.

(State Street Bank v. Signature Financial, 1998)

Ex.1: A system to permit individual mutual funds (spokes) to pool their assets in an investment portfolio (hub) organized as a partnership

Ex.2: Amazon’s one-click shopping

Ex.3: Virtual sales personnel

--> Flood of business method related patent applications

US - business methods (2)

n USPTO's initiative

- collection of business methods prior art
- training examiners; double check
- public outreach

Fiscal Year	1996	1997	1998	1999	2000	2001	2002*
Applications Filed	584	927	1340	2821	7800	8700	5000
Patents Issued	144	206	420	585	899	433	492

Number of applications filed and patents issued in the United States of America under Class 705 (Source: USPTO).

*The data in fiscal year 2002 are an estimate.

Europe (1)

European Patent Convention (EPC)

n Article 52(1)

European patents shall be granted for any inventions which are susceptible of industrial application, which are new and which involve an inventive step.

n Article 52(2) and (3) Non exhaustive list of subject matter not regarded as inventions, including

- schemes, rules and methods for doing business *as such*;

- programs for computers *as such*.

Europe - technical character

“Inventions” must be of technical character.

- Must relate to a technical field (Rule 27(1))
- Must be concerned with a technical problem (Rule 27(1))
- Must have technical features in terms of which the matter for which protection is sought can be defined in the claim (Rule 29(1))

?

Article 52(2): Subject matter not regarded as inventions
= abstracts, non-technical
nature

Europe - technical character

- n The claimed subject matter has a technical character.
 - Apparatus claim
 - Method claim
- n The contribution to the state of the art (inventive step) has a technical character.
 - = An invention solves a technical problem.
 - Ex. - faster/simplified/more efficient computing
 - reliability/safety/speed in computer communication is improved.
- n Various claim formats accepted (IBM case, 1997).

Europe - EU development

- n Draft Directive on the Patentability of Computer-implemented Inventions
 - Harmonizing the interpretation of patentability requirements re. Computer implemented inventions among the EU member States.
 - Strong oppositions to the European Commission's draft by open source software supporters and by small software developers

China (1)

- n An "Invention" means any new technical solution relating to a product, a process or improvement thereof.
- n "Rules and methods for mental activities" are not patentable subject matter.
- n Examination Guidelines
 - **"Methods of business operation and financial management" and "computer program as such"**
 - **A claimed invention involves only a computer program per se, or merely a computer program recorded on a carrier = Not patentable subject matter**

China: Exam. Guidelines

- n If the methods or computer programs go beyond mere “rules and methods of mental activities”, they may be patentable.
 - Utilize technical means (use the laws of nature)
 - Solve any technical problem
 - Provide technical effect
- n Claimed invention as a whole

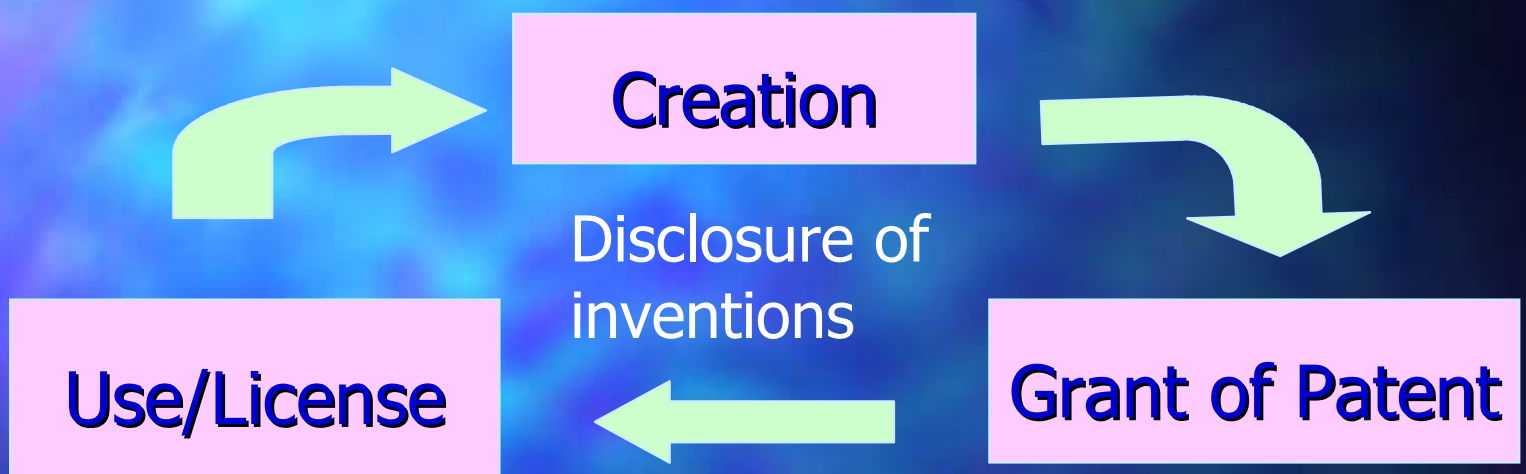
Ex.1: An invention using a computer program for measuring the viscosity of liquid.

Ex.2: An invention employing a virtual memory management program to increase the capacity and the processing speed

Patent enforcement issues

- n IPR = territoriality
- n How to determine the “unauthorized use” of a patent?
 - **Patented product (network system) consists of elements located in different territories.**
 - **Patented process (methods to process data via network) consists of elements processed in different territories.**
- n Menashe case (UK)

Debates continue...



n Objectives of Patent System

- Promote economic development
- Balance between patentee's rights and public interest



Thank you!

tomoko.miyamoto@wipo.int