

*Patent and Copyright  
Protection for Computer  
Hardware and Software*

presented to

The Japanese Intellectual Property Assn

By

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PART 1

PATENT PROTECTION  
FOR  
COMPUTER HARDWARE AND SOFTWARE

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## Overview

- Statutory Subject Matter
- Supreme Court Cases
- Subject Matter Eligible under § 101
- Subject Matter Not Eligible
- USPTO Examination Guidelines
- KSR & Obviousness
- Actors in Multiple Jurisdictions
- Distributed System Components
- Extraterritoriality

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## What Is Patentable?

- Anything under the sun that is made by man
- Statutory Categories:
  - Process
  - Machine
  - Manufacture
  - Composition of Matter

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## Statutory Subject Matter 35 USC § 101

- No patent protection for:
  - Abstract ideas
  - Laws of nature
  - Natural Phenomena
  - Algorithm alone
- BUT claim to statutory subject matter which uses a mathematical formula or computer program may be statutory – math formula alone does not make it unpatentable

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## Not Eligible for Patent Supreme Ct. Cases

Claim	Reason
Method of converting BCD to pure decimals in general purpose computer – claims include structure limitations	Practical effect would be impermissible award of patent for discovery in mathematics – (preemption) <i>Gottschalk v. Benson</i> – 1972
Method of updating numerical alarm limits in claim with math formula that did not preempt the formula	Mere post-solution activity claiming a newly discovered formula coupled to a well known process – <i>Parker v. Flook</i> 1978

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## Eligible for Patent Supreme Court Cases

- Process for operating a rubber molding press, which included a math formula because claim drawn to entire rubber curing process – *Diamond v. Diehr* – 1981

**Practice Tip: When including mathematical subject matter in a claim, draft the claim to an entire apparatus or process which uses the mathematical function rather than to the mathematical function itself.**

**Avoid claims that recite merely inputting data or performing post solution processing in an old apparatus or method**

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## Eligible for Patent (Fed. Cir.)

Claim	Reason
Transformation of electrocardiograph signal by a machine through series of calculations	Indication of condition of patient's heart is useful, concrete & tangible result – <i>Arrhythmia Technology</i> - 1992
Rasterizer for converting vector list data into pixel illumination data – means plus function claims	Algorithm alone not patentable but claimed machine is in one of 4 statutory categories – <i>In re Allapat</i> 1994

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## Eligible for Patent (Fed. Cir.)

Claim	Reason
Memory for storing data for access by application program comprising data objects	Not claiming data model in abstract– claims structural elements imparting physical organization to info stored in memory – <i>Lowry - 1994</i>
Financial data processing system producing a numerical result to manage portfolio	Business methods subject to same standard as other methods – number produced by machine is useful & tangible result <i>State Street Bank - 1998</i>

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## Not Eligible For Patent (Fed. Cir.)

Claim	Reason
Method of bidding by grouping bids to complete the sale of all items offered at highest price	Grouping and regrouping of non-physical items (bids) ≠physical change, effect or result – indistinguishable from non-patentable data gathering – <i>Schrader 1994</i>
Method of avoiding collisions by calculating “bubble hierarchy” along medial axis	Method is manipulation of math constructs <u>BUT</u> memory containing hierarchy generated is OK – <i>Wammerdam 1994</i>

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## Not Eligible For Patent (Fed. Cir)

Claim	Reason
Signal with embedded supplemental data  <i>Note- claims to method and apparatus OK</i>	Claim only to informational content – not in a statutory category - claims to transitory propagating signals not statutory <i>Nuijten - 2007</i>
Method for mandatory arbitration – no machine required  <i>Note: Claims to modules may be eligible (remand)</i>	Abstract concept only patentable in process tied to apparatus or operated to change materials' state – <i>Comiskey 2007</i>

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## Claim Drafting Tips

- Claims in the enumerated statutory categories
- Claims which produce a useful and tangible result
- Claims of varying scope – use means plus function and generic claims
- Claims to an entire process – not just the math
- Claims reciting physical transformation
- Claims to computer readable media with data structures to implement a method
- Claims with structural limitation – more than data gathering or post solution activity (displaying)
- Avoid claims to informational content/signals
- Avoid claims to mental processes w/o machine implementation

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## USPTO Examination Guidelines

- Determine what applicant has invented & is seeking to patent
- Conduct thorough prior art search
- Determine compliance with subject matter eligibility under 35 USC § 101
- Evaluate compliance with §§ 101, 112
- Communicate findings

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## Practice Tips - USPTO Guidelines

- Include disclosure to support claims reciting structure – disclose more than abstract method
- Disclose applications of method to support claims
- Claim practical applications using method– more than data gathering and post solution activity
- Disclose a useful, tangible, practical result (even if it is a number, disclose how it is used)
- Disclose and claim computer readable medium having stored thereon program steps to implement the method

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## KSR and Obviousness

- KSR S. Ct. ruling: teaching, motivation, suggestion test for obviousness unduly rigid
- Person of ordinary skill also of ordinary creativity
- If person of ordinary skill can implement predictable variation, likely obvious
- Look to:
  - Interrelated teaching of multiple patents
  - Effects of demands known to design community
  - Knowledge of ordinary skill for apparent reason to combine known elements
- Combination of familiar elements according to known methods likely to be obvious when yielding predictable results

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## KSR Applied by Federal Circuit

- Interactive learning device with processor, memory and reader held obvious over combination of:
  - (1) a prior art electromechanical learning device using a phonograph record whose needle is placed on a location corresponding to sound by a motor actuated by placement of a puzzle piece and
  - (2) a learning toy with a speaker, processor and memory - determined book & page ID based on locations of symbols
- neither prior art device contained the claimed reader which identified a book inserted into the device – *Leapfrog Enterprises v. Fisher-Price*

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## Multiple Actors in System

- All Elements Rule – all steps of claimed method must be performed by single actor for infringement
- Joint infringement, if at all possible, would only apply to narrow set of cases with actors performing steps in concert with each other

**Practice Tip: Draft claims with an eye toward enforcement. Draft claims so that one party carries out all the steps of the method or makes, uses or sells all the components of the claimed apparatus**

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## System Elements Distributed in Multiple Jurisdictions

- Use of a claimed system is the place at which the system as a whole is put into service – i.e. where control is exercised and beneficial use of the system obtained – even if some of the apparatus is outside the U.S. Thus, infringement of apparatus claims possible BUT NOT method claims, since entire method is not performed in U.S. *NTP v. Research In Motion (the Blackberry case)*

**Practice Tip: Draft both method and apparatus claims of varying scope**

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## Extraterritoriality

- April 30, 2007, Supreme Court in *AT&T v. Microsoft* ruled shipment of "master" operating system files either on disk or by download outside the U.S. is NOT a shipment of a "component" under 35 USC § 271(f)
- Microsoft exported only a master, not the copies installed on foreign computers.
- Court concluded no infringement because the copies installed on foreign made computers don't exist until they are made in foreign countries and are not supplied from the U.S.

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## PART 2

### COPYRIGHT PROTECTION FOR COMPUTER SOFTWARE

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## COPYRIGHT PROTECTION OF SOFTWARE

- Requirements for copyright:
  - Fixation
  - Any tangible medium of expression from which work can be perceived
  - Expression – No copyright in ideas
- Preemption – Federal statute (17 USC..) controls all equivalent rights
- Computer Program
  - Set of statements to be used directly or indirectly in a computer to bring about a certain result

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## Copyright in Software

- Source Code – © in expressive elements – presumption for all matter registered
- Object Code – no presumption
- 17 USC § 117 – owner of a copy of computer program may make or authorize making of another copy or adaptation if:
  - Copy created as essential step in utilization of computer program in conjunction with a machine and used in no other manner, OR
  - Copy is for archival purposes

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## Development of Copyright in Software

- Software stored in ROM is a copy *Tandy v Personal Micro Computers*
- Microcode is copyrightable subject matter *NEC v Intel*
- Audio-visual work in video game satisfies fixation & originality requirement for copyright – transitory actions of user ≠ authorship *Williams Electronics v Artic Int'l*
- Operating system is copyrightable literary work = expression to extent other expressions are possible *Apple v Franklin*

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## Idea/Expression Dichotomy

- Idea of electronic spreadsheet NOT copyrightable *Lotus v Paperback*
- No copyright in expression essential to an idea – no copyright in L-shaped display common to industry in spreadsheet *Lotus v paperback*
- Command hierarchy not copyrightable
- Method of operation not copyrightable – buttons on VCR *Lotus v Borland*
- “Windows” arrangement and office desktop interface are purely functional – NOT copyrightable *Apple v. Microsoft*

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## Non-Literal Software Elements

- No actual copying of source or object code
- Structure, Sequence Organization – qualitative over quantitative assessment – *Whelan v Jaslow*
- Three Step Approach – *Computer Associates v Altai*
  - Abstraction – lowest level = lines of code; intermediate levels = macros, parameter lists; highest level = function or purpose of program
  - Filtration – at each level filter non-© subject matter – ideas, externalities, standards
  - Comparison – compare remaining creative kernel to alleged infringing program

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## Copyright Office Registration Practice

- Notice requirement eliminated to comply with Berne convention
- Deposit Requirements
- Trade Secret Provisions
- Single Registration for Computer Programs and Screen displays

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## Internet Issues

- Implied License to view web page implies license to local cache
- Personal use printing probably w/in license scope
- Re-distribution NOT w/in scope of implied license
- Digital Millennium Copyright Act OSP Safe Harbors
  - Mere conduit function
  - Automatic caching w/o modification
  - Storage of material on network w/o knowledge of infringement & expeditious removal on notice
  - Take down & counter notice provisions
  - Termination Policy reasonably implemented

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## Downloading & File Sharing Issues

- Direct infringement required for secondary liability
- Ripper software has substantial non-infringing uses – no secondary liability *Real Networks v Streambox*
- Secondary liability exists for distributing peer to peer search software with the object of promoting its use to foster infringement; Substantial non-infringing uses possible – look to conduct and infer intent of distributor *MGM v. Grokster*

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