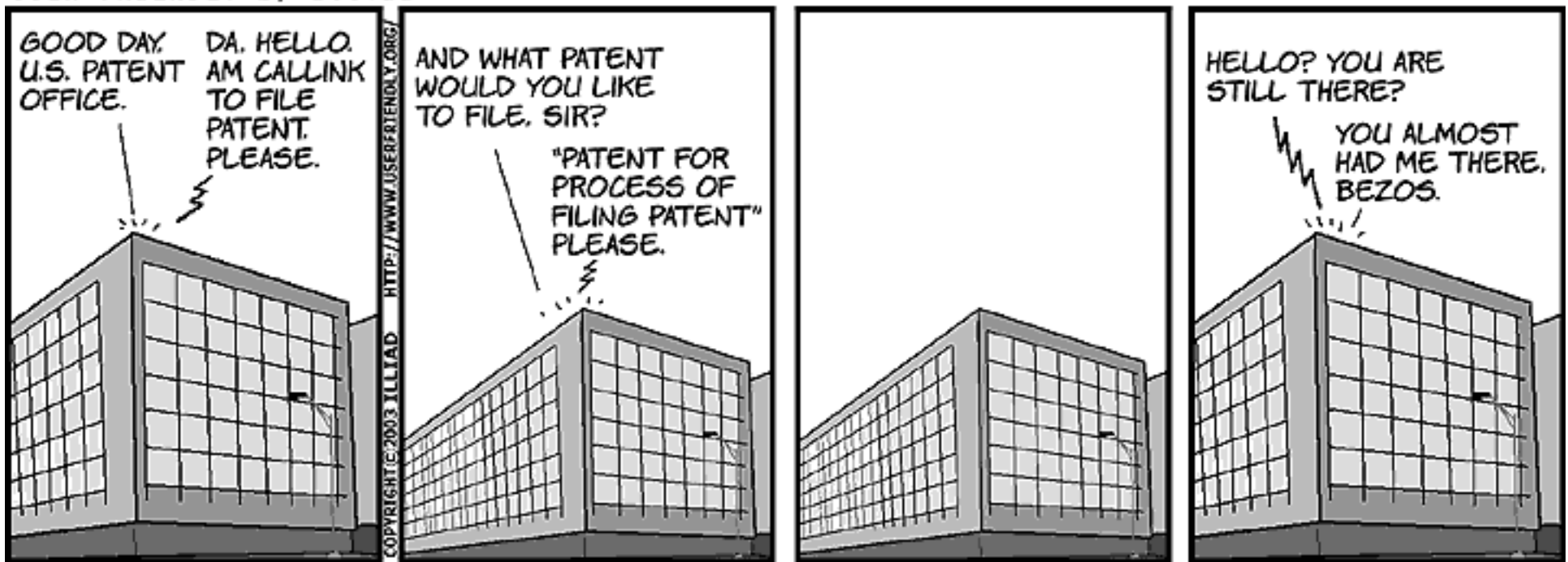


Business Method Patents, Innovation, and Policy

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From an MIT website on IP.....

USER FRIENDLY by Illiad



Outline

- What is a business method patent?
- Brief history and legal status
 - US
 - Europe
- Should we worry about them?

What is a business method patent?

- ❑ A patent on a method of doing business, broadly defined?
- ❑ A patent on implementing a traditional method of doing business in software or on the web?
- ❑ A patent classified in US Patent Class 705?
 - 705 - Data processing: financial, business practice, management, or cost/price determination

US Bus Method Patent Act (2000)

- (1) a method of
 - A. administering, managing, or otherwise operating an enterprise or organization, including a technique used in doing or conducting business; or
 - B. processing financial data;
- (2) any technique used in athletics, instruction, or personal skills;
- (3) any computer-assisted implementation of a method described in paragraph (1) or a technique described in paragraph (2).

proposed to the US congress by Congressmen Berman and Boucher in 2000; not enacted.

Some examples

6015947 (Jan 00, class 84)

method of teaching music by first teaching rote understanding of musical notes and progressing to a structural understanding of notes on a musical staff

after learning small portions of a scale, the student learns other small sections of the scale until all notes on the musical scale have been learned

6257248 (Jun 02, class 132)

method for cutting hair with scissors and/or other implements in both hands

5491779 (Feb 96, class 395)

three dimensional presentation of multiple datasets in unitary format with pie charts

Further examples

5806063 (Sept 98, class 707)

Y2K patent on adjusting the date by changing the base year (now under re-examination)

5933841 (Aug 99, class 715)

structured document browser which includes a constant user interface for displaying and viewing sections of a document

6067562 (May 00, class 709)

system and method for downloading music selections from a digital radio broadcasting station that contains several hundred selections

6175824 (Jan 01, class 705)

method and apparatus for choosing a stock portfolio, based on patent indicators including citations

Software/business method class definitions

Software & BM: 380, 382, 395, 70X, 71X

- Older software: 380, 382, 395
- Newer software: 70X
 - USPTO business method patents: 705
 - Finance subclasses used by Lerner:
 - 705/35: Finance
 - 705/36: Portfolio selection, planning or analysis.
 - 705/37: Trading, matching or bidding.
 - 705/38: Credit (risk) processing or loan processing.
 - 705/4: Insurance (some only).

705: Business method patents

- Optimization
 - scheduling, resource allocation
- Marketing
 - advertising management, catalog systems, incentive programs, coupon redemption
- Financial
 - credit and loan processing, point of sale systems, billing, funds transfer, banking clearinghouses, tax processing, investment planning, cryptography
- Information acquisition
 - human resource management, accounting, inventory monitoring
- Financial instruments and techniques
 - derivatives, valuation, index-linking
- e-commerce tools and infrastructure
 - user interface, auctions, electronic shopping carts, transactions, affiliate programs
- Miscellaneous
 - voting systems, games, gambling, education and training

History

□ Statutory subject matter

- 35 U.S.Code §101 defines eligible subject matter as any new and useful
 - Machine
 - Article
 - Process
 - Composition
- Judicially excluded
 - Laws of nature
 - Natural phenomena
 - Abstract ideas

History

- Early US business method patents
 - Relatively rare, but not zero
 - Mid-19C – hotel register with local advertisements
- Two important court decisions in late 1990s
 - 1998: State Street v. Signature
 - 1999: ATT v. Excel

State Street v Signature

Patent at issue: Data processing system for hub and spoke financial services configuration

“pure” number-crunching type of application that implemented financial accounting functions for hub (portfolio) and spoke (two or more funds invested in portfolio) financial services configuration

Inventor: Boes; R. Todd (Boston, MA)

Assignee: Signature Financial Group Inc. (Boston, MA)

Application filed: March 11, 1991

Granted: March 9, 1993

Current U.S. Class: 705/36

International Classes: G06F 015/21; G06F 015/30

Federal Circuit Court Decision

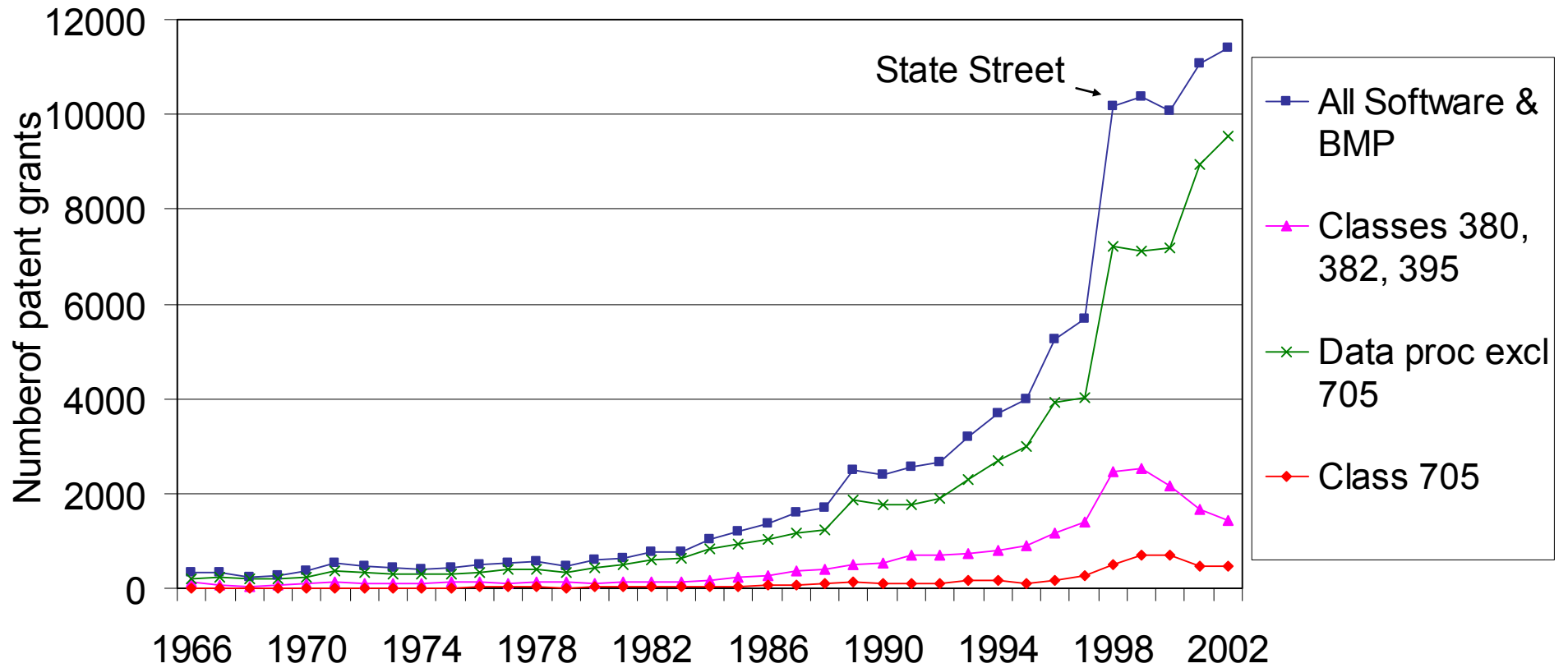
- Section 101 is unambiguous - “any” means ALL
 - Improper to read limitation into 101 not intended by Congress
 - Mathematical algorithms are non-statutory only when “disembodied” and thus lacking a useful application
 - Providing a “useful” result is the only condition for a claim reciting a mathematical algorithm
- *Re the business method exception:*

“We take this opportunity to lay this ill-conceived exception to rest.”

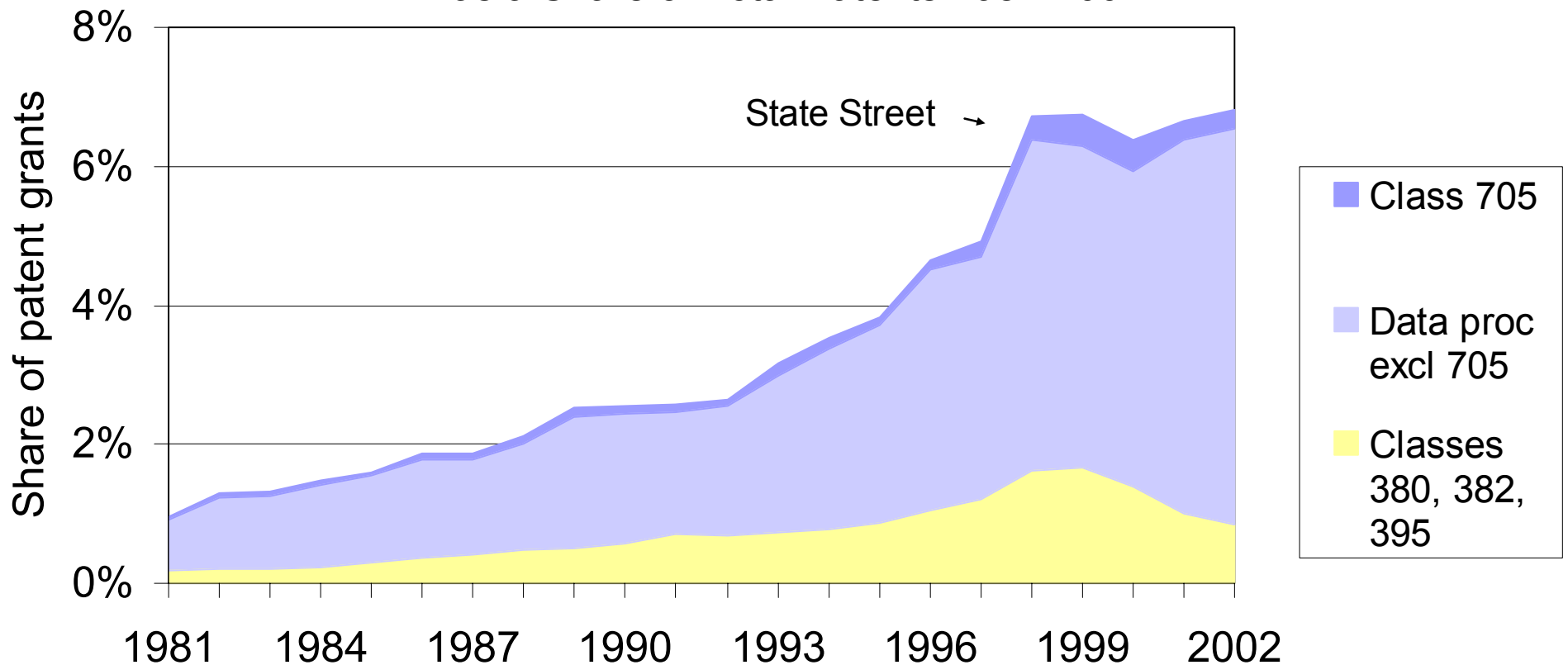
History – AT&T v Excel

- Patent at issue a method claim about adding a data field to a record for use in a billing system
- Federal Circuit confirmed State Street
 - patentability of mathematical algorithms confirmed
 - holding also applies to methods
 - Held physical transformation not required for method claim to be statutory
 - Potentially significant re non-computer business methods

US Patent Classes with Software/Business Method Patents Granted 1966-2002



US Patents Granted in Software/Business Method Classes as a Share of Total Patents 1981-2002



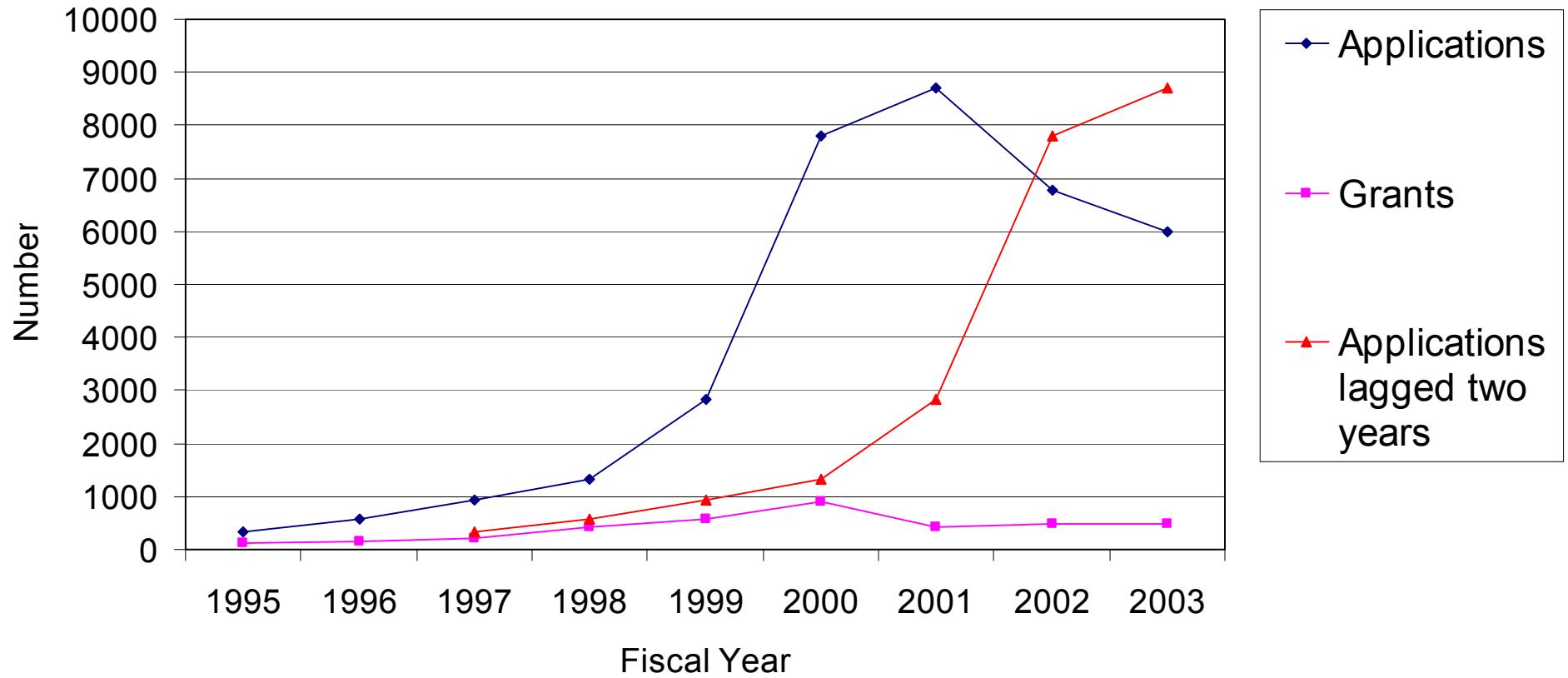
USPTO Response

- Internal reorganization and creation of Class 705
- Hiring software experts
- Quality
 - training, industry outreach
 - Second pair of eyes before allowance
- Results
 - Before changes: 57% grant rate vs. 67% for all patents (according to PTO)
 - second examiner yields drop to 36%

USPTO continued

- Two papers released July 26, 2000
 - White paper on BMP
 - Traces history of automated financial/ management business patents
 - takes position there is an unbroken line of evolution
 - i.e., business as usual for the PTO
 - Obviousness guidelines
 - Formulating and Communicating Rejections under 35 USC 103 for Applications Directed to Computer-Implemented Business Method Inventions
- Written description guidelines released Jan. 5, 2001

USPTO Class 705 Patents



US Legislation

- American Inventors Protection Act of 1999
 - First inventor defense a new, personal defense to an infringement suit (not a ground of invalidity) is provided with respect to method claims only, if the defendant can show, by clear and convincing evidence, that it used the patented method commercially more than one year before the filing date
- Several bills designed to define BM patents and limit their use have gone nowhere

International view

- Countries that allow business method patents
 - US
 - Australia
 - Japan
 - Korea
- Countries that have resisted introducing BMP
 - EPO
 - UK
 - Canada
- BUT.....

Situation in Europe

- European patent convention **Art. 52(2c)** excludes from patentable subject matter
 - “schemes, rules, and methods for performing mental acts, playing games or **doing business**, and programs for computers”
- **EPC Art. 52 (3)** only excludes inventions
 - “to the extent to which a European patent application or European patent relates to such subject-matter **as such**”
- Board of Appeal at the EPO:
 - Depends on **technical character** of underlying invention (not formally defined)

Situation in Europe

- EPO advocates change of the EPC to clarify situation and allow patenting of BM and software
- EP voted to maintain and reinforce exclusion
- EC opposes EP; wishes to follow the EPO
- **De facto**, BM patents are sometimes (often) granted by EPO using “technical” as a criterion

European business method patents

Source: **Wagner (2004), LMU-Munich**

- No separate class, unlike US
 - Choose all EPO patents with equivalents in US class 705
 - 8550 US pats through March 2004
 - 1901 EPO equivalent applications
 - Grant rate is 67% for BMP vs 65% for all patents
 - Opposition rate is 16% for BMP vs 6% for all patents (**but due to one subclass G07/B17**)
 - US origin is 62% vs 54% for all patents

Examples of European BM patents

EP19960304685 (Sony)

Apparatus and method for executing game programs having advertisements therein

EP19980935928 (Siemens)

system for providing targeted internet information to mobile agents

EP19990306874 (Toshiba)

toll collection system, onboard units and toll collection method

European BM patent classes

IPC	Description	Number
G06	Computing, calculating, counting	819
G07	Checking devices, franking	599
H04	Electric communication technique	235
A,B,E, F,G,H	Other	248
	All	1,901

All USPTO Class 705 Patents		EPO Patents with 705 Equivalents	
Assignee	1981-2000	Assignee	1981-1998
Pitney Bowes	298	Pitney Bowes	99
IBM	196	IBM	46
Fujitsu	93	NCR	20
Hitachi	90	Francotyp-Postalia AG	11
NCR	78	Neopost	27
AT&T/Lucent	66	AT&T/Lucent	11
Walker digital/Priceline	65	Fujitsu	15
Sharp	54	Hitachi	9
Citibank	49	Sony	10
Omron Corp	41	Siemens	12
Matsushita Electrical	33	Matsushita Electrical	9
Microsoft	33	Toshiba	15
Francotyp-Postalia AG	29	Sharp	12
Neopost	28	Sun Microsystems	5

Should we worry?

Yes

1. Poor quality of BM patents, at least at first
2. Evidence that patents are good for innovation weak
3. Substantial increases in cost of doing business

No

1. Natural industry evolution – subject matter extension always causes criticism at first
2. These patents are very narrow and therefore do no harm

Patent quality

- Satisfies statutory requirements
 - Novel
 - Non-obvious
 - Useful
 - Adequately disclosed
- Certainty about
 - Validity
 - Breadth or scope

Consequences of low patent quality

- Uncertainty and slower investment in new technologies
 - Especially when invention is cumulative
 - Fear of litigation even when patents are narrow or not likely to be valid
 - Entry deterrence (Lerner 1995, on biotechnology)
- Large numbers of patents increase fragmentation of patent rights, raising TC of combinations
- Spurs increases in applications, burdening PTOs (vicious circle)

Empirical work on incentive effects

1. Introducing or strengthening a patent system (lengthening the term, broadening subject matter coverage, improving enforcement)
 - increases patenting and the strategic uses of patents
 - does not generally increase innovative activity, but
 - redirects innovation toward things that are patentable and away from those protected by secrecy
 - may be positive effects in the pharmaceutical and biotechnology areas, and possibly specialty chemicals.

Empirical work on incentive effects

2. The existence and strength of the patent system *does* affect the organization of industry
 - allows trade in disembodied knowledge
 - facilitates the vertical disintegration of knowledge-based industries
 - Enables the entry of new firms that possess only intangible assets

Uncertainty

- Validity
 - Some examples
 - Problems from pre-trial settlement
- Breadth
 - An example

Validity - BM patent disputes

- BT's hyperlink prototype patent (1989)
 - sued Prodigy, AOL, etc in Dec 2000. In Sept 2002, summary judgment of invalidity issued. BT abandoned patent.
- Public key encryption patents (1993)
 - Leon Stambler is suing RSA Security, Verisign. Trial began 2/26/03
- Compton's Encyclopedia / Britannica's multi-media search system with multiple paths (1993)
 - Re-examined at PTO request Dec/93, certificate issued July 2002 (!), with narrowed claims
- MercExchange's patent on a computerized market place for goods (1995)
 - Sued eBay, in Sept 2001. Still in litigation. ReturnBuy Settled for non-exclusive license, details not disclosed

Validity - BM patent disputes

- Netcenter's patents for online incentive/award systems (1998, 1999)
 - Netcenter sued Carlson Companies and others. Has obtained 14 licensees with royalties of \$6,000,000 per year collected by Netcenter
- Priceline/Walker digital's patent on a Dutch auction on the internet
 - Sued Microsoft/Expedia in Oct 1999. Settled with undisclosed royalty payments in Jan 2001
- SBCommunications patent on a structured document browser (1999)
 - Sent 30 licensing letters in Feb 2003, although there exists prior art in the form of Netscape 2.0 (1995). Also OWL International (1988) - first hypertext system
- Bruce Dickens' 1998 patent on Y2K century windowing
 - Sent licensing letters in 1999-2000; USPTO re-examined at inventor and PTO request, no outcome as of Feb. 2003

Broad vs narrow patents

- Very broad BM patents look like algorithms, which are unpatentable
- Very narrow BM patents can easily be invented around
 - Illustration – patent on choosing stocks using patent indicators.

US patent 6,175,824

Method and apparatus for choosing a stock portfolio, based on patent indicators

A portfolio selector technique is described for selecting publicly traded companies to include in a stock market portfolio. The technique is based on a technology score derived from the patent indicators of a set of technology companies with significant patent portfolios. Typical patent indicators may include citation indicators and science linkage that measures leading edge tendencies of companies.....The selector technique creates a scoring equation that weights each indicator such that the companies can be scored and ranked based on a combination of patent indicators. The score is then used to select the top ranked companies for inclusion in a stock portfolio. A portfolio of the top 10-25 companies using this method and a relatively simple scoring equation has been shown to greatly exceed the S&P 500 and other indexes in price gain over a ten year period.

Assignee: CHI Research, Inc. (Haddon Heights, NJ)

Application filed: July 14, 1999

Granted: January 16, 2001

Current U.S. Class: 705/36; 705/10; 705/35; 705/37

US patent 6,175,824 – Claim 1

A computer-implemented method of selecting a portfolio of company stocks for a client which is predicted to have future performance that achieves a predesired financial outcome, the method comprising:

(a) calculating a score for a plurality of companies whose stock may be potentially selected to be in the portfolio by using the equation:

wherein $x(i)$ are company indicators which include industry normalized patent indicators, $\alpha(i)$ are weighting coefficients for the respective company indicators, at least one of the weighting coefficients being non-zero, the weighting coefficients being selected so that companies which receive a high score are predicted to contribute to achieving the predesired financial outcome, and $\beta(i)$ are weighting exponents, and that companies which receive a low score are predicted to not contribute to achieving the predesired financial outcome, each company being assigned to a predefined industry;

(b) ranking the calculated scores from highest to lowest and generating recommendations of which company stock to purchase for the portfolio based upon the ranking; and

(c) displaying the recommendations on a summary report for review by the client or the client's financial manager, or buying amounts of company stock for the portfolio in accordance with the recommendations, or selling amounts of company stock from the portfolio in accordance with the recommendations.

US patent 6,175,824 – Claim 2

A method according to claim 1 wherein the weighting coefficients used in the equation of step (a) are determined by:

- (i) choosing a set of companies and determining one or more indicators for the set of companies, including one or more industry normalized patent indicators;
- (ii) choosing a set of weighting coefficients for the indicators and calculating a score for each company in the set of companies;
- (iii) determining how well the scores for the set of companies achieve the predesired financial outcome in a predetermined historical time period;
- (iv) repeating steps (ii) and (iii) for a plurality of different sets of weighting coefficients; and
- (v) selecting the set of weighting coefficients which selects the set of companies most closely achieving the predesired financial outcome in the predetermined historical time period, and using the selected set of weighting coefficients in the equation of step (a).