Patent Law

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Monday, October 23, 2017

Class 16 – Patentable subject matter II

Recap

Recap

- → Overview of patentable subject matter
- → The implicit exceptions
- → Laws of nature

Today's agenda

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- → Overview of patentable subject matter
- → Products of nature
- → Abstract ideas
- → A unified framework

PSM overview

PSM overview

- → 3+1 core requirements for patentability
 - Utility (§ 101)
 - Novelty (§ 102)
 - Nonobviousness (§ 103)
 - Patentable subject matter (§ 101)

(Post-AIA) 35 U.S.C. § 101 — Inventions patentable

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 therefor, subject to the conditions and requirements of this title.

PSM overview

- → Two-part inquiry:
 - Step 1: Is it a process, machine, manufacture, or composition of matter?
 - Step 2: If so, does it fall within an implicit exception as a <u>law of nature</u>, <u>physical phenomenon</u>, or <u>abstract</u> <u>idea</u>?

PSM overview

- → Two-part inquiry:
 - Step 1: Is it a <u>process</u>, <u>machine</u>, <u>manufacture</u>, or <u>composition of</u> <u>matter</u>?
 - Step 2: If so, does it fall within an implicit exception as a <u>law of nature</u>, <u>physical phenomenon</u>, or <u>abstract</u> <u>idea</u>?

Products of nature

Diamond v. Chakrabarty

- → New bacteria that can break down crude oil
 - Takes a preexisting bacteria and inserts two preexisting plasmids that break down hydrocarbons
 - Not a natural phenomenon: This is a combination that never existed before

Funk Brothers

- → New mixture of preexisting bacteria to fertilize leguminous plants (peanuts, peas, soybeans)
 - Leguminous plants can absorb nitrogen, but only with help from bacteria
 - Each plant needs a different bacteria species, but combinations inhibit each other
 - Inventor (Bond) discovered which bacteria don't inhibit each other and figured out how to combine them

Funk Brothers

- → This invention embodies natural phenomena:
 - These bacteria exist
 - · They can inhibit each other
 - Specific combinations of bacteria wouldn't inhibit each other

Funk Brothers

- → What did Bond invent?
 - He discovered these properties
 - Put together the bacteria that wouldn't inhibit each other
 - So invented a specific combination that wouldn't inhibit each other

Funk Brothers

- → Court: The patent covers a natural phenomenon, plus a trivial application of that phenomenon
 - Thus, it is a discovery, not a patentable invention
 - Carved out of § 101 as a natural phenomenon

Funk Brothers

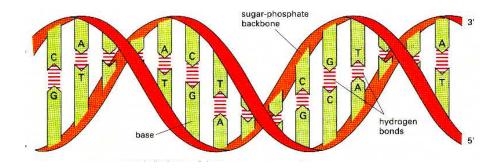
→ What's the difference between Chakrabarty and Funk Brothers?

Funk Brothers

- → What's the difference between Chakrabarty and Funk Brothers?
 - Chakrabarty made something that had never existed before
 - But: Chakrabarty just combined existing plasmids with existing bacteria
 - And: Bond invented a new combination of different bacteria
 - Can we reconcile them?

→ Technology?

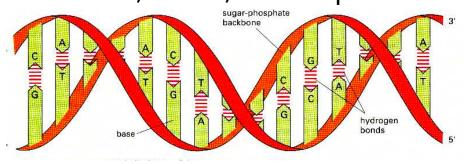
- → Technology?
 - Isolated DNA
 - Complementary DNA

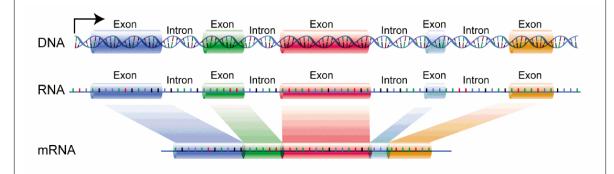


→ Single chromosome: 80–110,000,000 base pairs

→ Isolated DNA: 80,000 base pairs

 \rightarrow cDNA: 5,000–10,000 base pairs





- → Parke-Davis & Co. v. HK Mulford & Co., S.D.N.Y. 1911 (L. Hand, J.)
 - · Isolated adrenaline is patentable
 - "Takamine was the first to make it available for any use by removing it from the other gland-tissue in which it was found, and, while it is of course possible logically to call this a purification of the principle, it became for every practical purpose a new thing commercially and therapeutically."

- → Parke-Davis & Co. v. HK Mulford & Co., S.D.N.Y. 1911 (L. Hand, J.)
 - This was considered good law for 100+ years
 - PTO guidelines, Federal Circuit cases, &c
 - E.g., purified insulin was patented

- → Unanimous Supreme Court: isolated DNA is not patentable; cDNA is patentable
 - isolated DNA appears in nature
 - cDNA does not
- → Are you persuaded?

- → What steps are taken to make isolated DNA?
- → What steps are taken to make cDNA?

→ Don't isolated DNA and cDNA result in molecules that don't exist in nature?

- → Don't isolated DNA and cDNA result in molecules that don't exist in nature?
 - Court: "Myriad's claims are simply not expressed in terms of chemical composition, nor do they rely in any way on the chemical changes that result from the isolation of a particular section of DNA. Instead, the claims understandably focus on the genetic information encoded in the BRCA1 and BRCA2 genes."

- → Don't isolated DNA and cDNA result in molecules that don't exist in nature?
 - Court: "...creation of a cDNA sequence from mRNA results in an exons-only molecule that is not naturally occurring.
 ... [T]he lab technician unquestionably creates something new when cDNA is made."

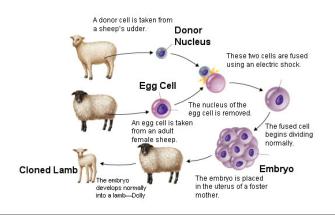
Myriad

→ What do you make of settled expectations? People had relied on these patents for 100 years...

- → What do you make of settled expectations? People had relied on these patents for 100 years...
 - Court brushes by it because the government now argued it was wrong to do so
 - Also, reliance interests are best addressed to Congress
 - But, are they?

Roslin Institute

→ Technology: Cloned sheep!





Roslin Institute

- → Claims:
 - The somatic method of cloning mammals
 - · The individual cloned animals

Roslin Institute

→ So do the clones exist in nature?

Roslin Institute

- → So do the clones exist in nature?
 - In one sense, no, they're manmade
 - In another sense, they're identical to the prior-art normal sheep

Roslin Institute

- → So do the clones exist in nature?
 - "[in Chakrabarty,] the Court held that the modified bacterium was patentable because it was 'new' with 'markedly different characteristics from any found in nature and one having the potential for significant utility.'"

Roslin Institute

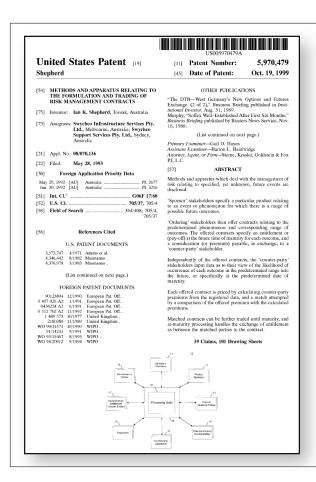
- → So do the clones exist in nature?
 - "However, Dolly herself is an exact genetic replica of another sheep and does not possess 'markedly different characteristics from any [farm animals] found in nature.'"

| Chakrabarty | new bacteria | made from of existing bacteria and existing plasmid | patentable |
|---------------|-----------------------------------|--|----------------|
| Funk Brothers | new combination of bacteria | made from existing bacteria | not patentable |
| Myriad | new isolated DNA | made from existing genes | not patentable |
| Myriad | new cDNA | made from existing genes | patentable |
| Roslin | new cloned sheep | made from existing sheep | not patentable |

Bottom line (for now)

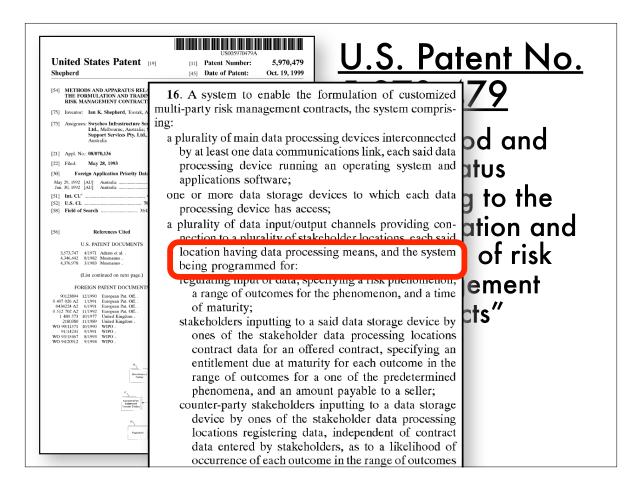
- → If you create <u>something that didn't exist in</u> <u>nature</u>, it's patentable
 - Bacteria in Chakrabarty
 - cDNA in Myriad
- → But if you <u>purify</u> something, or <u>separate pieces</u>, or <u>bundle pieces</u>, or <u>recreate something that</u> <u>previously existed</u>, probably not patentable
 - Bacteria combination in Funk Brothers
 - · Isolated DNA in Myriad
 - · Cloned sheep in Roslin Institute

Abstract ideas



<u>U.S. Patent No.</u> 5,970,479

"Method and apparatus relating to the formulation and trading of risk management contracts"



Alice Corp. v. CLS Bank

→ What's the rule in this case?

Alice Corp. v. CLS Bank

- → What's the rule in this case?
 - Takes the Myriad framework
 - Look at the claim and see if it sets forth
 a natural law an abstract idea
 - If so, look at the claim without the natural law <u>abstract idea</u> and see if there's an <u>inventive concept</u>
 - This is our new now-unified two-step framework

Alice Corp. v. CLS Bank

→ How do we tell if something is an abstract idea?

Alice Corp. v. CLS Bank

- → How do we tell if something is an abstract idea?
 - "fundamental economic practice long prevalent in our system of commerce"
 - "building block of the modern economy"
 - not a "preexisting, fundamental truth that exists in principle apart from any human action"

Alice Corp. v. CLS Bank

- → How do we tell if something is an abstract idea?
 - But the reality is, it's hard to know
 courts will be sorting this out for a while

Abstract ideas

- → Cases where the issue is most likely to arise:
 - Algorithms
 - Software
 - Business methods

Gottschalk v. Benson

→ Technology: Method of converting binary-code decimal to binary

- 8. The method of converting signals from binary coded decimal form into binary which comprises the steps of
 - (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

- → How is this different from
 - A mathematical algorithm?
 - A recipe?
 - A chemical synthesis?

(12) United States Patent (54) METHOD AND SYSTEM FOR PAYMENT OF INTELLECTUAL PROPERTY ROYALTIES BY INTERPOSED SPONSOR ON BEHALF OF CONSUMER OVER A TELECOMMUNICATIONS NETWORK (75) Inventor: Dana Howard Jones, Rancho Palos Verdes, CA (US) FOREIGN PATENT DOCUMENTS OTHER PUBLICATIONS Ebenkamp, Becky; "Gold on that thar Web," Brandweek, Jul. 15, 1996, v37 n29 p. 17, 3 pgs, Proquest #9892249.* Alexander, Stev; "REE. . . . usulay carry a cost," startribune.com, Jan. 31, 2000; Proquest #48774859, 6 pgs.* Prior Publication Data US 2001/0047338 A1 Nov. 29, 2001 Related U.S. Application Data (60) Provisional application No. 60/207,941, filed on May 27, 2000. The present invention is directed to a method and system for distributing or obtaining prostucts covered by intellectual property over a telecommunications network whereby a consumer may, rather paying for the products, choose to receive such products after viewing and/or interneting with an interposed sponsor's or advertiser's ancessige, wherein the assignment of the anderlying intellectual property associated with the product through an intermediary such as a facilitator. References Cited U.S. PATENT DOCUMENTS 16 Claims, 3 Drawing Sheets

<u>U.S. Patent No.</u> 7,346,545

- "Method and system for payment of intellectual property royalties by interposed sponsor on behalf of consumer over a telecommunications network"
- → Federal Circuit: Ultramercial v. Hulu

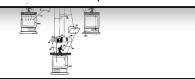
US007346545B2

(12) United States Patent Jones (10) Patent No.: US 7,346,545 B (45) Date of Patent: Mar. 18, 200

<u>U.S. Patent No.</u> 7346 545

- **8**. A method for distribution of products over the Internet via a facilitator, said method comprising the steps of:
- a first step of providing a product list on an Internet website, wherein at least some of the products are media products covered by intellectual property rights protection and are available for purchase, said media products being provided by content providers, wherein each said media product is comprised of at least one of text data, sound data, and video data;
- a second step of selecting a sponsor message to be associated with at least one of said media products, said sponsor message being selected from a plurality of sponsor messages, said second step including accessing an activity log to verify that the total number of times which the sponsor message has been previously presented is less than the number of transaction cycles contracted by the sponsor of the sponsor message;
- a third step of restricting general public access to said media products;
- a fourth step of offering to a consumer access to a requested media product available for purchase without charge to the consumer on the precondition that the

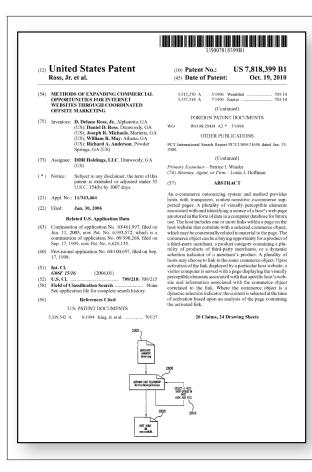
- consumer views the sponsor message;
- a fifth step of receiving from the consumer a request to view a sponsor message in response to said step of offering;
- a sixth step of facilitating the display of a sponsor message to the consumer in response to receiving the request:
- a seventh step of, if the sponsor message is not an interactive message, allowing said consumer access to said requested media product after said step of facilitating the display of said sponsor message;
- an eighth step of, if the sponsor message is an interactive message, presenting at least one query to the consumer and allowing said consumer access to said media product after receiving a response to said at least one query.
- a ninth step of recording the transaction event to the activity log, said ninth step including updating the total number of times the sponsor message has been presented; and
- a tenth step of receiving payment from the sponsor of the sponsor message displayed.



Ultramercial v. Hulu

"This ordered combination of steps recites an abstraction—an idea, having no particular concrete or tangible form. The process of receiving copyrighted media, selecting an ad, offering the media in exchange for watching the selected ad, displaying the ad, allowing the consumer access to the media, and receiving payment from the sponsor of the ad all describe an abstract idea, devoid of a concrete or tangible application. Although certain additional limitations, such as consulting an activity log, add a degree of particularity, the concept embodied by the majority of the limitations describes only the abstract idea of showing an advertisement before delivering free content."

Ultramercial v. Hulu, No. 2010-1544 (Fed. Cir. Nov. 14, 2014)



<u>U.S. Patent No.</u> <u>7,818,399</u>

- → "Methods of expanding commercial opportunities for internet websites through coordinated offsite marketing"
- → Federal Circuit: DDR Holdings v. Hotels.com

(12) United States Patent Ross, Jr. et al. (30) Patent No.: US 7,818,399 B1 (45) Date of Patent: Oct. 19, 2010 (54) METHODS OF ENPANDING COMMERCIAL OPPOSITIONITIES FOR INTERNET WEBSITES THROUGH COORDINATED OFFSTE MARKETING OFFSTE MARKETING (75) Inventors: D. Delano Ross, Jr., Algharetta, GA (76) Inventors: D. Delano Ross, Jr., Algharetta, GA

<u>U.S. Patent No.</u> 7,818,399

- 19. A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:
 - (a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages;
 - (i) wherein each of the first web pages belongs to one of a plurality of web page owners;
 - (ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and
 - (iii) wherein the selected merchant, the outsource provider, and the owner of the first web page displaying the associated link are each third parties with respect to one other:

- (b) a computer server at the outsource provider, which computer server is coupled to the computer store and programmed to:
 - (i) receive from the web browser of a computer user a signal indicating activation of one of the links displayed by one of the first web pages;
 - (ii) automatically identify as the source page the one of the first web pages on which the link has been activated:
 - (iii) in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and
 - (iv) using the data retrieved, automatically generate and transmit to the web browser a second web page that displays: (A) information associated with the commerce object associated with the link that has been activated, and (B) the plurality of visually perceptible elements visually corresponding to the source page.



DDR Holdings v. Hotels.com "[T]he '399 patent's asserted claims do not recite a mathematical algorithm. Nor do they recite a fundamental economic or longstanding commercial practice. Although the claims address a business challenge (retaining website visitors), it is a challenge particular to the Internet. * * *

"[T]hese claims stand apart because they do not merely recite the performance of some business practice known from the pre-Internet world along with the requirement to perform it on the Internet. Instead, the claimed solution is **necessarily rooted in computer technology** in order to overcome a **problem specifically arising in the realm of computer networks**."

DDR Holdings v. Hotels.com, No. 2013-1505 (Fed. Cir. Dec. 5, 2014)

"The '399 patent's claims are different enough in substance from those in *Ultramercial* because they do not broadly and generically claim 'use of the Internet' to perform an abstract business practice (with insignificant added activity). Unlike the claims in *Ultramercial*, the claims at issue here specify how interactions with the Internet are manipulated to yield a desired result—a result that overrides the routine and conventional sequence of events ordinarily triggered by the click of a hyperlink. * * * When the limitations of the '399 patent's asserted claims are taken together as an ordered combination, the claims recite an invention that is not merely the routine or conventional use of the Internet."

DDR Holdings v. Hotels.com, No. 2013-1505 (Fed. Cir. Dec. 5, 2014)

Abstract ideas

- → Practical effect of Alice
 - Since Alice, many software and business-method patents have been invalidated under § 101
 - Many have been invalidated on motions to dismiss
 - Would you rather win on § 101 or § 102/103?

Abstract ideas

- → Some possible "abstract ideas"
 - Things that we can conceive as algorithms
 - Things with no physical manifestation
 - Implementations of longstanding ideas
 - Things that are too broadly claimed?

A unified framework

A unified framework

→ Before:

- 1. Does a patent claim a "process, machine, manufacture, or composition of matter"?
- 2. If so, does it fall within an exception for laws of nature, natural phenomena, or abstract ideas?

A unified framework

→ Before:

- 1. Does a patent claim a "process, machine, manufacture, or composition of matter"?
- 2. If so, does it fall within an exception for laws of nature, natural phenomena, or abstract ideas?

A unified framework

→ Now:

- 1. Does a patent claim a "process, machine, manufacture, or composition of matter"?
- 2. If so, does it set forth a law of nature, natural phenomenon, or abstract idea?
- 3. If so, do the other elements of the claim add an inventive concept?

Next time

Next time

 \rightarrow Utility