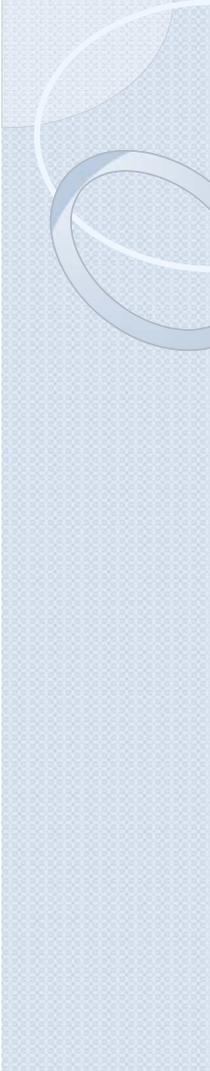# *Alice* and the Aftermath: What is Abstract Idea?

Rong Xie, M.Sc., LL.M.

Hon-Man Lee, Ph.D., J.D.

August 6, 2015

Patent-Eligible Subject Matter

- 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. 35 U.S.C. § 101

- "We have long held that this provision contains an important implicit exception: **Laws of nature, natural phenomena, and abstract ideas** are not patentable." *Alice*, 134 S.Ct. at 2354
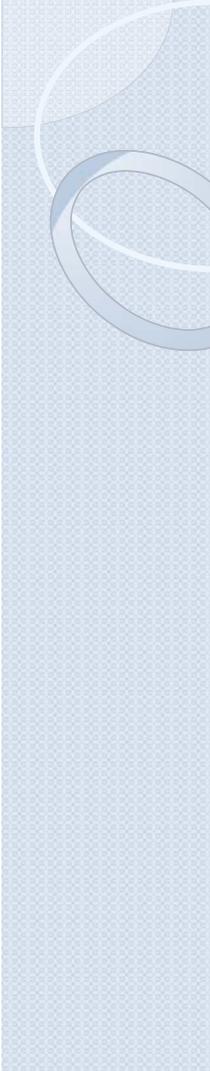
Patent-Eligible Subject Matter

- *Bilski v. Kappos*, 130 S. Ct. 3218 (2010)

- *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 132 S. Ct. 1289 (2012)

- *Alice Corp. v. CLS Bank International*, 134 S. Ct. 2347 (2014)
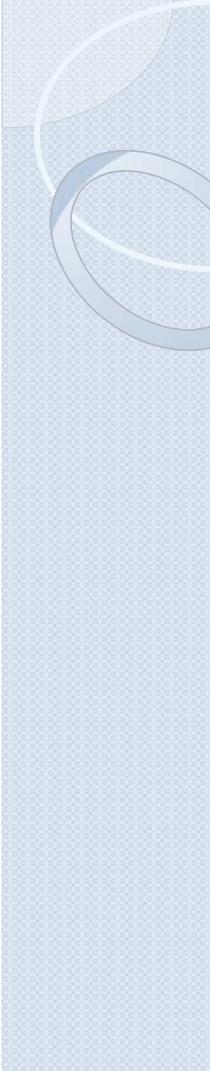
Bilski

- A method of hedging against the financial risk of price fluctuations was an abstract idea

Mayo

- A medicine-dosing process regarding the correlation between metabolite levels in blood and a medicine dosage
- The Supreme Court used a two-part test to find that this was an unpatentable natural law
- The claims did not include additional limitations that would "transform" the method into a patent-eligible process
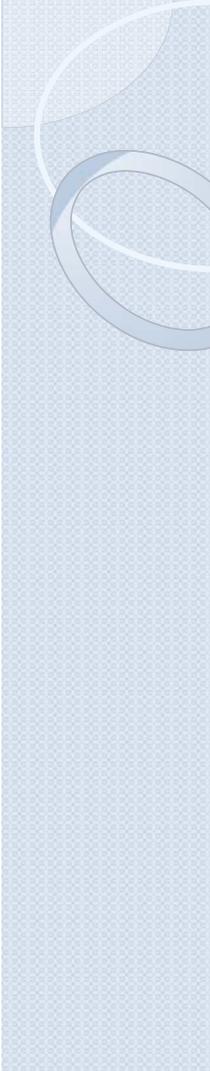
Alice

- A computerized scheme for mitigating "settlement risk", which is the risk that only one party to an agreed-upon financial exchange will satisfy its obligation.

- The computer system acts as a third-party intermediary that facilitates the exchange of financial obligations between two parties.
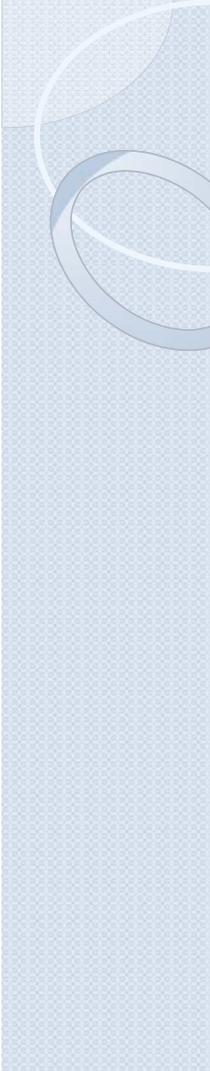
Alice

A method of exchanging an obligation between parties, wherein an exchange obligation is administered by a supervisory institution, and wherein at least one credit record and one debit record is maintained with an exchange institution, the method comprising:

(a) maintaining a shadow credit record and a shadow debit record for a party to be held independently by the supervisory institution from the exchange institution;

(b) for every transaction resulting in an exchange obligation, the supervisory institution electronically adjusting said shadow credit record and/or shadow debit record, allowing only those transactions that do not result in a value of said shadow debit record being less than a value of said shadow credit record; and

(c) at the end of a period of time, the supervisory institution providing an instruction to the exchange institution to credit and/or debit in accordance with said adjustments of said allowed transactions, wherein said instruction being an irrevocable, time invariant obligation placed on the exchange institution.
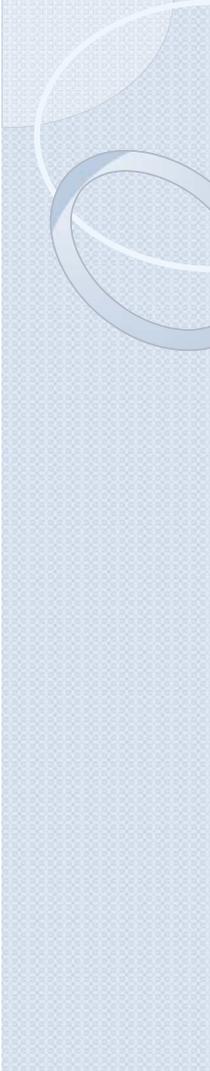
Alice

A method to enable the formulation of customized multi-party risk management contracts having a future time of maturity, the method comprising the steps of:

(a) inputting into data processing apparatus, by at least one ordering stakeholder input means thereof, contract data representing at least one offered contract in at least one predetermined phenomenon having a range of future outcomes, and said contract data specifying entitlements due at maturity for the range of future outcomes, and consideration due to a counter-party stakeholder;

(b) inputting into said data processing apparatus, by at least one counter-party stakeholder input means thereof, counter-party registering data, independent of at least one ordering stakeholder entering contract data, as to a likelihood of each outcome in said range of future outcomes for one or more of said predetermined phenomena;

(c) storing, in a data storage means of said data processing apparatus linked with each said stakeholder input means and linked with each said counter-party stakeholder input means, said contract data and said registering data; and

(d) pricing and matching at least one of the offered contracts by data processing means of the data processing apparatus linked with said data storage means, said pricing and matching comprising the steps, for each offered contract, of:

(i) calculating a counter-consideration derived from said likelihoods and said entitlements;

(ii) comparing said consideration and said counter-consideration; and

(iii) matching a contract on the basis of said comparison.
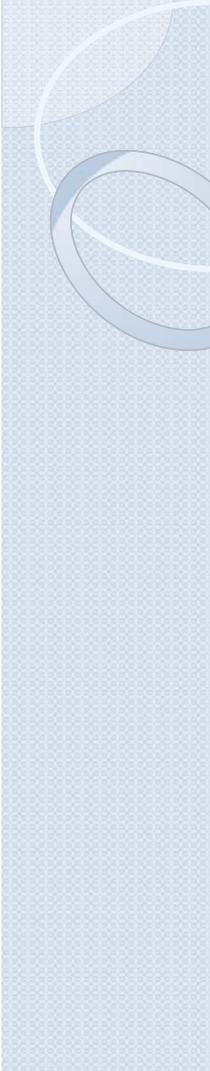
The Two-Part Test of *Mayo/Alice*

➢ "First we must determine whether the claims at issue are directed to one of those patent-ineligible concepts [laws of nature, natural phenomena, and abstract ideas]."

➢ "If so, we then ask, 'what else is there in the claims before us?' To answer that question, we consider the elements of each claim both individually and as an ordered combination to determine whether the additional elements transform the nature of the claim into a patent-eligible application. We have described step two of this analysis as a search for an 'inventive concept'—*i.e.*, an element or combination of elements that is sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself."

Alice, 134 S.Ct. at 2355.
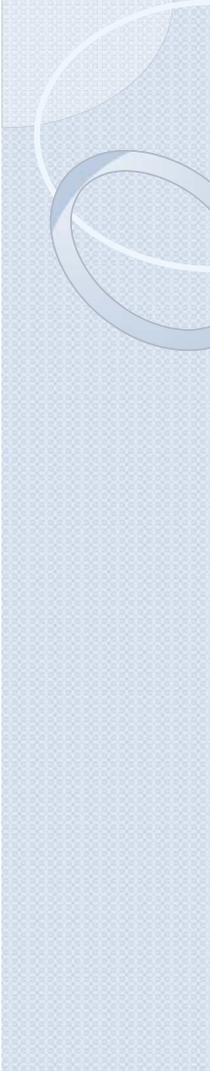
Part One

➢ "The 'abstract ideas' category embodies the longstanding rule that **an idea of itself is not patentable**."   *Alice*, 134 S.Ct. at 2355.

➢ The Court Provides Three Examples of Abstract Ideas:

● ***Benson***: Algorithm for converting binary-coded decimal numerals into pure binary form.

● ***Flook***: Mathematical formula for computing alarm limits.

● ***Bilski***: Hedging against the financial risk of price fluctuations.
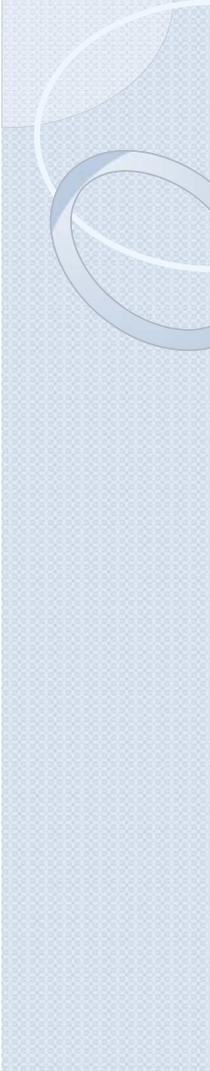
Abstract Idea

- "Laws of nature, natural phenomena, and abstract ideas are the **basic tools** of scientific and technological work. Monopolization of those tools through the grant of a patent right might tend to impede innovation more than it would tend to promote it."

- "We must distinguish between patents that **claim** the **building blocks** of human ingenuity and those that **integrate** the **building blocks** into **something more**."

- The Court analogizes to *Bilski* in explaining that the concept of "intermediated settlement," like the risk of hedging, "is a fundamental economic practice long prevalent in our system of commerce."

Lessons on abstract idea:

- **Formulas**
- **Algorithms**
- **Basic building blocks**
- **Longstanding practices** may be abstract ideas

Part Two

"We have described step two of this analysis as **a search for an 'inventive concept**'—*i.e.*, an element or combination of elements that is sufficient to ensure that the patent in practice amounts to **significantly more** than a patent upon the ineligible concept itself."
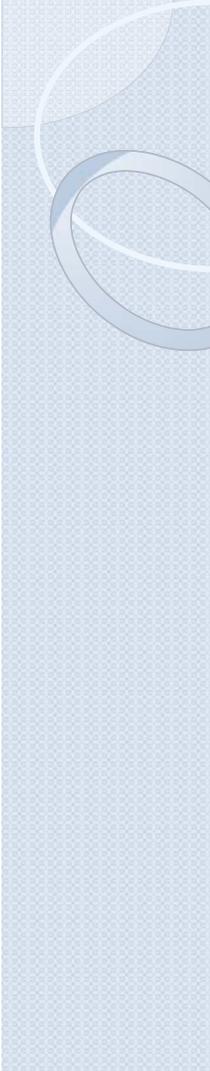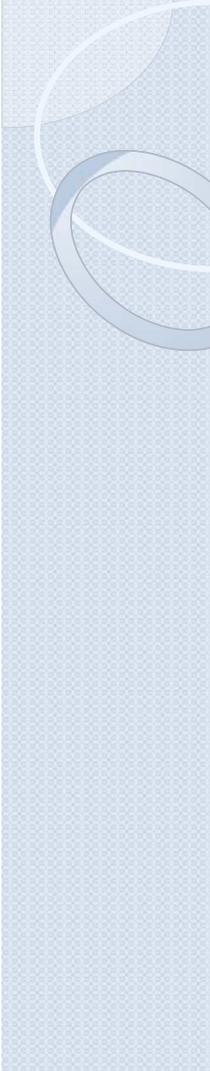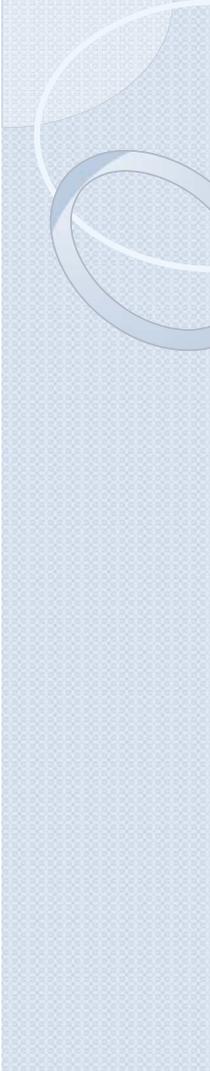
(conflate with 102/103?)

- "using a computer to create and maintain shadow accounts amounts to electronic record-keeping—one of the most basic functions of a computer"
- "the use of a computer to obtain data, adjust account balances, and issue automated instructions . . . are well-understood, routine, conventional activities previously known to the industry."
- "each step does no more than require a generic computer to perform generic computer functions,"
- "amount[s] to 'nothing significantly more' than an instruction to apply the abstract idea of intermediated settlement using some unspecified, generic computer."
- "the method claims do not . . . purport to improve the functioning of the computer itself . . . Nor do they effect an improvement in any other technology or technical field."
- "that is not '*enough*' to transform an abstract idea into a patent-eligible invention."
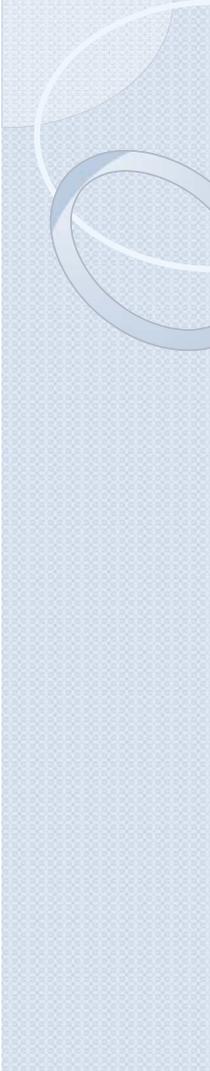
Lessons on what is "enough":

- Implementing an abstract idea on a **computer is insufficient**.

- Sufficiency appears to hinge on the **presence of inventive/novel/non-obvious features**.

- May be sufficient if they **improve** the functioning of a computer or another technology.
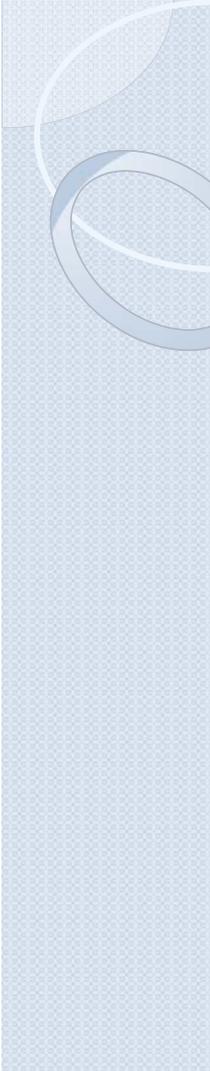
Case Laws After *Alice*

- *Digitech Image Tech., LLC v. Electronics for Imaging, Inc., 758 F.3d 1344 (Fed. Cir. 2014)*

- *buySAFE, Inc. v. Google, Inc.,* 765 F.3d 1350 (Fed. Cir. 2014)

- *Ultramercial v. Hulu and WildTangent,* 2014 U.S. App. LEXIS 21633 (Fed. Cir. 2014)

- *DDR Holdings, LLC v. Hotels.com* et al., 113 USPQ2d 1097 (Fed. Cir. 2014)
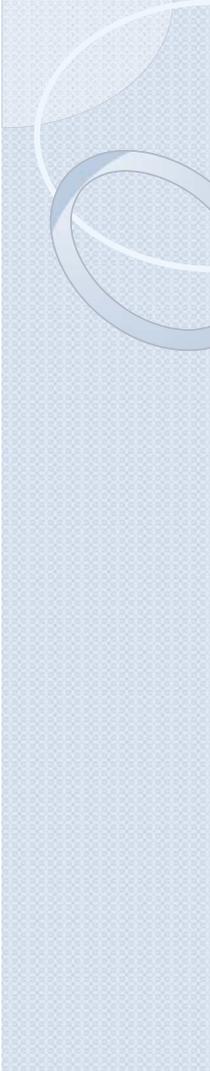
Digitech Image Tech., LLC v. Electronics for Imaging, Inc.

- Claims to a "Device Profile" and corresponding method.

- Held patent ineligible because claims were not drawn to a tangible embodiment of data.
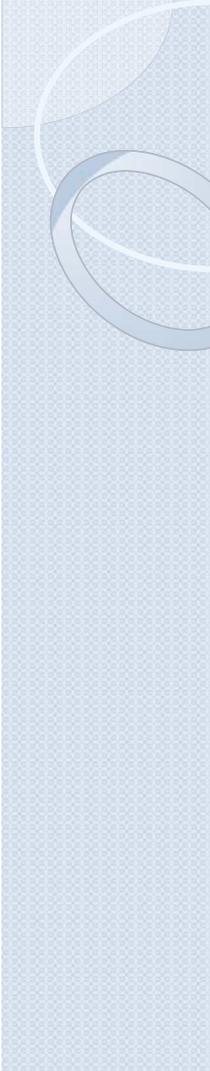
Digitech Image

1. A device profile for describing properties of a … comprising:

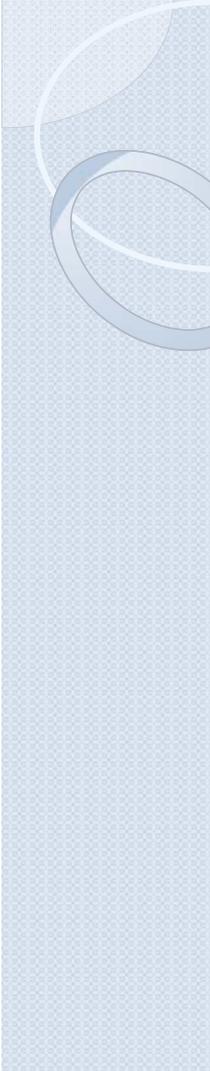first data for describing a device dependent transformation of color information content of the image to a device independent color space; and

second data for describing a device dependent transformation of spatial information content of the image in said device independent color space.

➢ no more than "a collection of information"

➢ the claims were "not directed to any tangible embodiment of this

➢ information" and were "instead directed to information in its non-tangible form"

➢ they did "not fall within any of the categories of eligible subject matter under section 101."
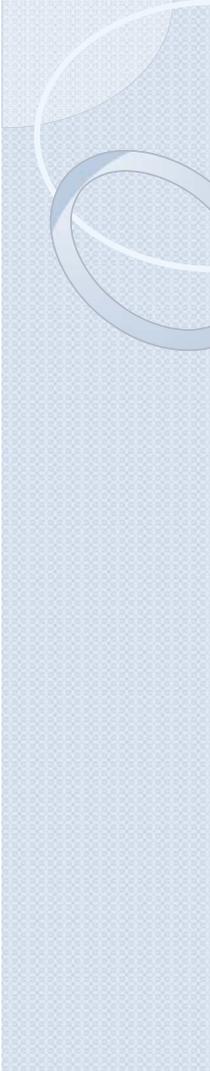
Digitech Image

A method of generating a device profile that describes properties of a device in a digital image reproduction system for capturing, transforming or rendering an image, said method comprising:

    generating first data for describing a device dependent transformation of color information content of the image to a device independent color space through use of measured chromatic stimuli and device response characteristic functions;

   generating second data for describing a device dependent transformation of spatial information content of the image in said device independent color space through use of spatial stimuli and device response characteristic functions; and

    combining said first and second data into the device profile.

Digitech Image

- The method claim does not include additional elements beyond the abstract idea of gathering and combining data.

- the claims were "an ineligible abstract process of gathering and combining data that does not require input from a **physical device**."

➢ The Federal Circuit's focus on the physical aspects of the claims shows that it may be beneficial to tie the claims to specific machines or structures.
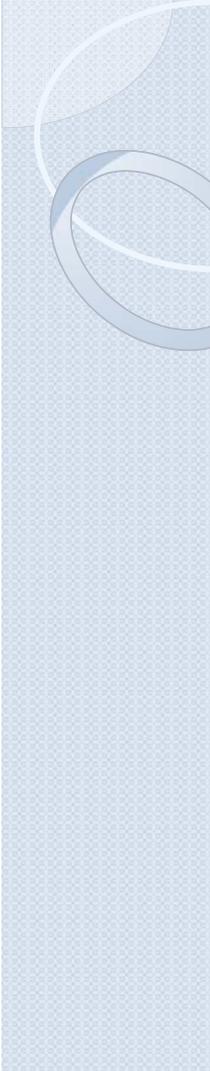
# *buySAFE, Inc. v. Google, Inc.*

- Methods and machine-readable media for guaranteeing a party's performance of an online transaction.

- The claim recites the steps of creating a contract […] which is a commercial arrangement involving contractual relations similar to the fundamental economic practices found by the courts to be abstract ideas (*e.g.*, hedging in Bilski).

- Not patent-eligible
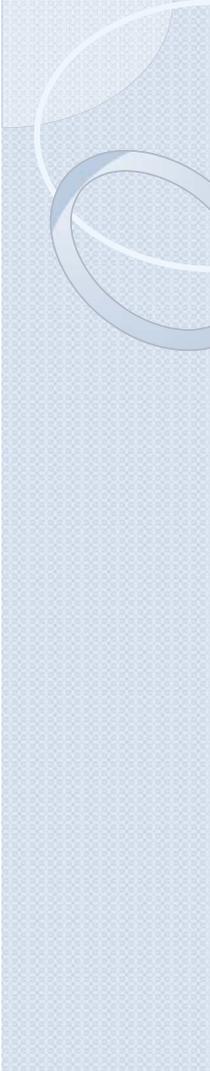
buySAFE, Inc. v. Google, Inc.

- Narrowing the commercial transactions to particular types of relationships or particular parts of that commercial transaction (*e.g.*, underwriting) would not render the concept less abstract.

- The claim limitations in addition to the abstract idea include a computer application running on a computer and the computer network.

- This is simply a generic recitation of a computer and a computer network performing their basic functions.
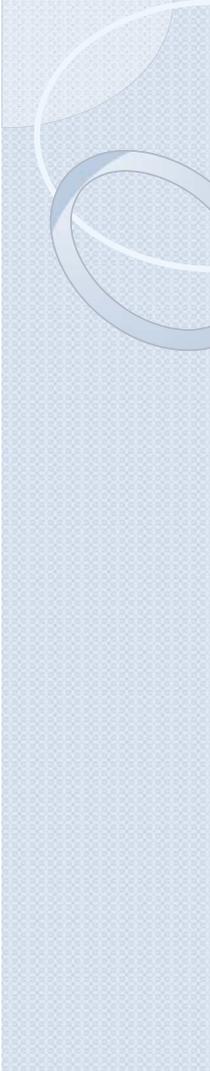
Ultramercial v. Hulu and WildTangent

- Method for distributing copyrighted media products (such as CDs) over the Internet in which a consumer could receive a copyrighted media product at not cost if the consumer viewed an advertisement. The advertiser then paid for the copyrighted content.
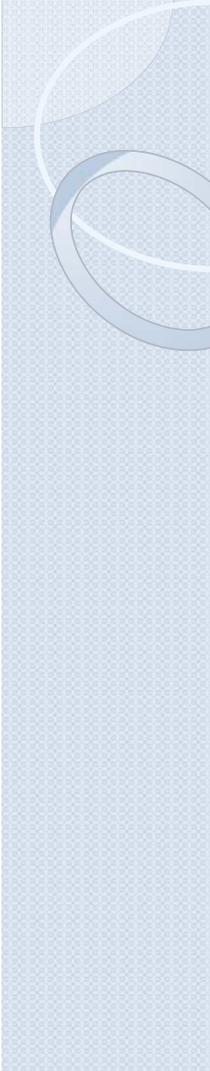
Ultramercial

A method for distribution of products over the Internet via a facilitator, said method comprising the steps of:

a first step of receiving, from a content provider, media products that are covered by intellectual property rights protection and are available for purchase, wherein each said media product being comprised of at least one of text data, music data, and video data;

a second step of selecting a sponsor message to be associated with the media product, 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 providing the media product for sale at an Internet website;

a fourth step of restricting general public access to said media product;

a fifth step of offering to a consumer access to the media product without charge to the consumer on the precondition that the consumer views the sponsor message;

a sixth step of receiving from the consumer a request to view the sponsor message, wherein the consumer submits said request in response to being offered access to the media product;

a seventh step of, in response to receiving the request from the consumer, facilitating the display of a sponsor message to the consumer;

an eighth step of, if the sponsor message is not an interactive message, allowing said consumer access to said media product after said step of facilitating the display of said sponsor message;

a ninth 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 tenth step of recording the transaction event to the activity log, said tenth step including updating the total number of times the sponsor message has been presented; and

an eleventh step of receiving payment from the sponsor of the sponsor message displayed.

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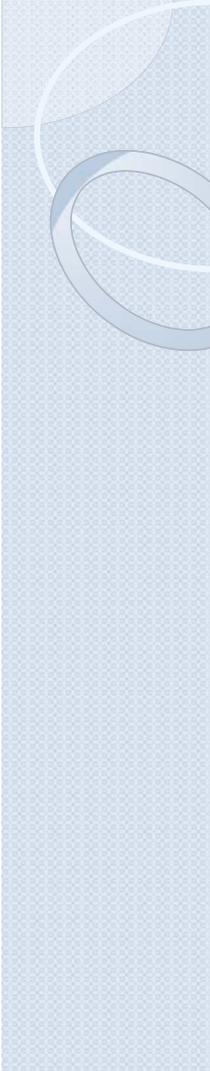
Ultramercial

- Before *Alice*, the Fed. Cir. has ruled twice the method to be patent-eligible.

- ➤ the court found that the patent involved "intricate and complex computer programming" and that the "ten specific steps in the claim limit an abstract concept." *Ultramercial*, 722 F.3d at 1350-54.

- After Alice, in the third ruling, the Fed. Cir. held the method to be patent-ineligible.
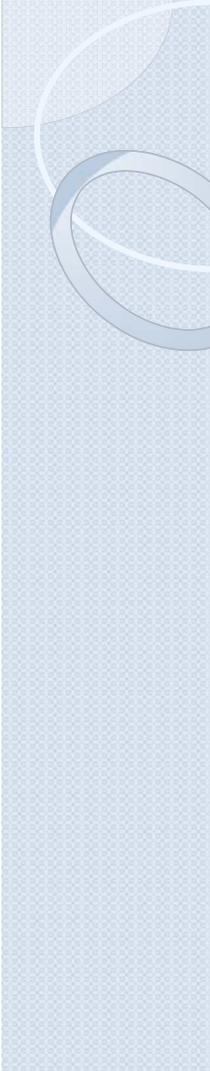
Ultramercial

- Under step one of *Alice*, the Federal Circuit found that the claims were directed to the abstract idea "that one can use an advertisement as an exchange of currency."

- "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."
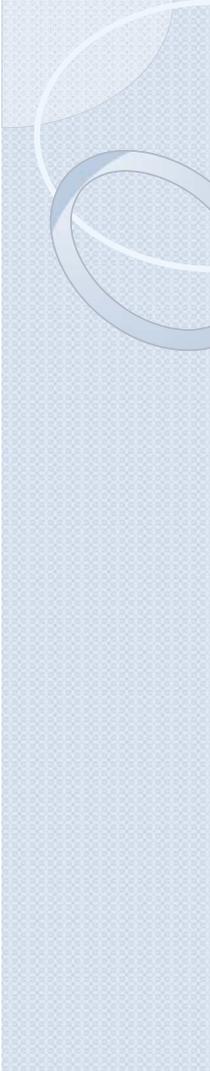
Ultramercial

- Under step two of *Alice*, the Federal Circuit concluded that "Adding routine additional steps such as updating an activity log, requiring a request from the consumer to view the ad, restrictions on public access, and use of the Internet does not transform an otherwise abstract idea into patent-eligible subject matter."

- […] the claim simply instructs the practitioner to implement the concept of using advertising as an exchange or currency with routine, conventional activity specified at a high level of generality in a particular technological environment.
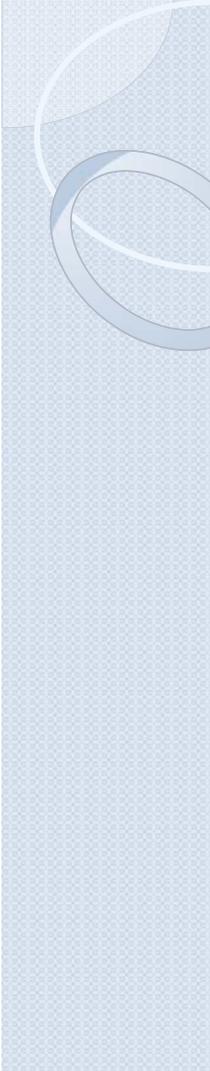
DDR Holdings, LLC v. Hotels.com et al.

- Systems for generating a composite web page containing certain visual elements of a "host" website with the content of a third-party merchant

- Normally, when a user clicks on an advertisement for a merchant, the user is re-directed to the merchant's website which could then "lure" the user away from the host website.

- In *DDR Holdings*, when a user clicked an advertisement (or other hyperlink) on the host website, instead of being re-directed to the third-party merchant's website, the system generated and directed the user to a composite web page that displayed product information from the third-part merchant's website, but retained the "look and feel" of the host website.

- As a result, the host website could retain visitor traffic.
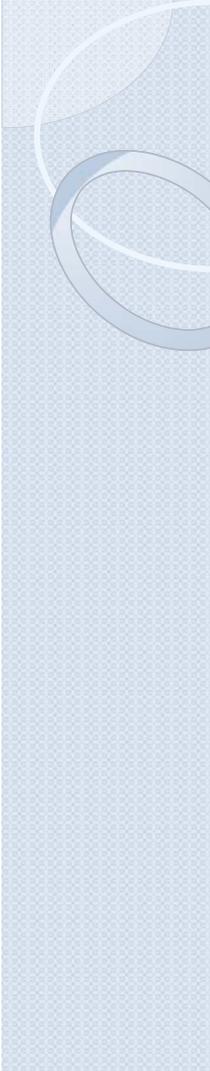
DDR Holdings

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.

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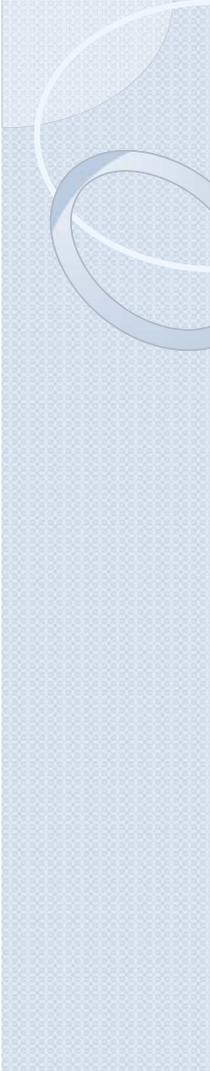
DDR Holdings

- re step one of the *Alice* analysis - the 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."

- re step two of the *Alice* analysis - "it is true that the claims here are similar to the claims in the cases discussed above in the sense that the claims involve both a computer and the Internet. But these 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."
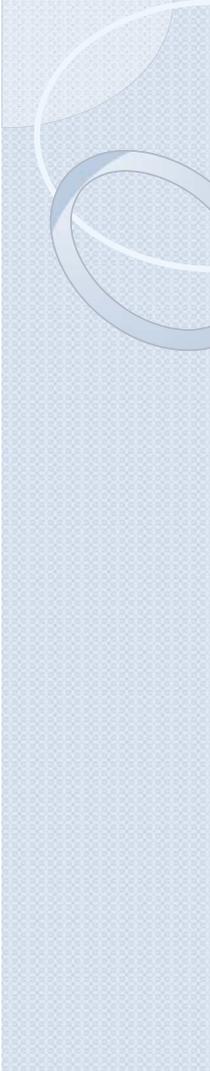
USPTO Guidelines

The analytical framework is to be applied to all judicial exceptions: laws of nature, natural phenomena, and abstract ideas

1. 2014-06 - Preliminary Examination Instructions in view of *Alice*
2. 2014-12 - Interim Guidelines
3. 2015-01 - Abstract Ideas Examples
4. 2015-07 – Update : Subject Matter Eligibility

Post-*Alice* Test

Part 1: Is the claim directed to a process, machine, manufacture, or composition of matter?

Part 2: Whether a claim that is directed to a judicial exception recites additional elements that amount to significantly more than the exception.
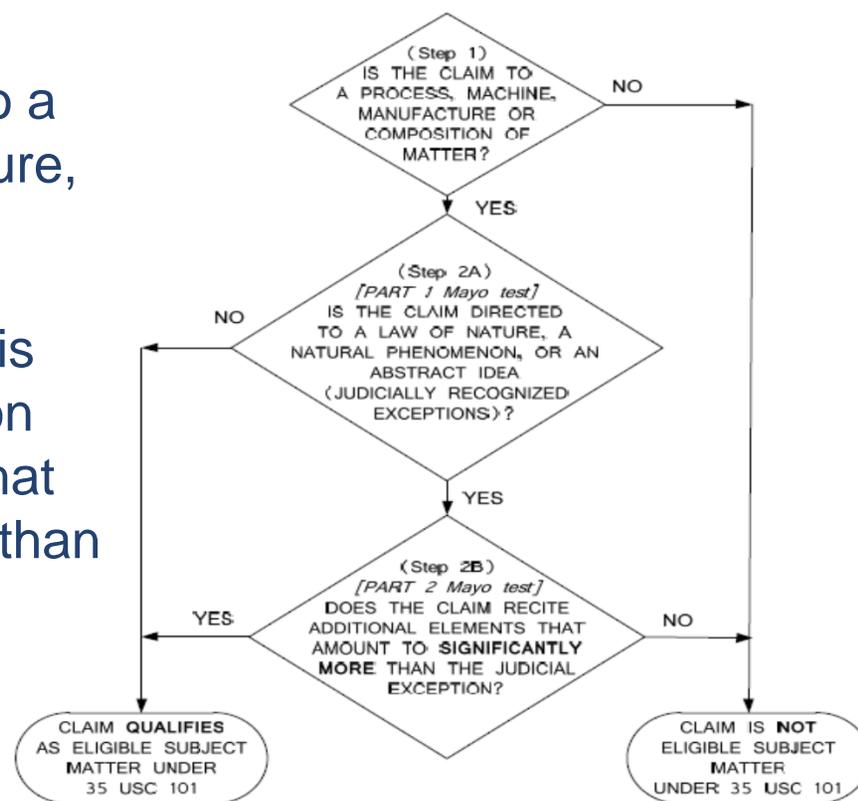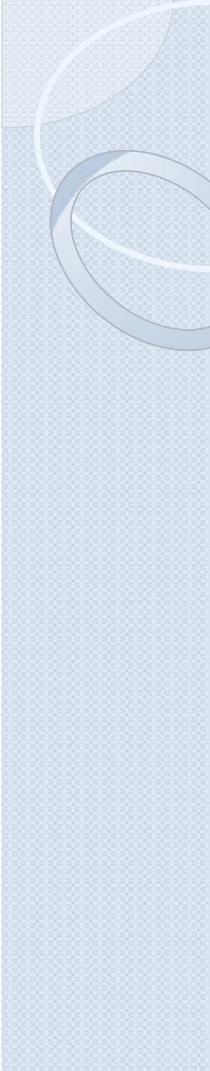
Part 2: Two-Steps Analysis

Step 2A: Is the claim **directed to a law of nature, a natural phenomenon, or an abstract idea?**

- If no, the claim is *eligible and examination should continue for patentability*

- If yes, proceed to Step 2B to analyze whether the claim as a whole amounts to significantly more than the exception.

Step 2B: Determine whether any element, or combination of elements, in the claim is sufficient to ensure that the claim amounts to **significantly more than the judicial exception.**

- Consider the additional elements claimed with the exception, both individually and as an ordered combination, to ensure that the claim describes a product or process that **applies the exception in a meaningful way.**
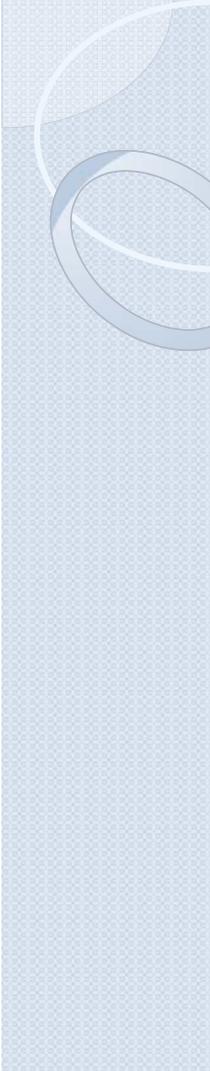
Examples of Abstract Idea

- Fundamental economic practices
- Certain methods of organizing human activities
- An idea 'of itself'
- Mathematical relationships/formulas
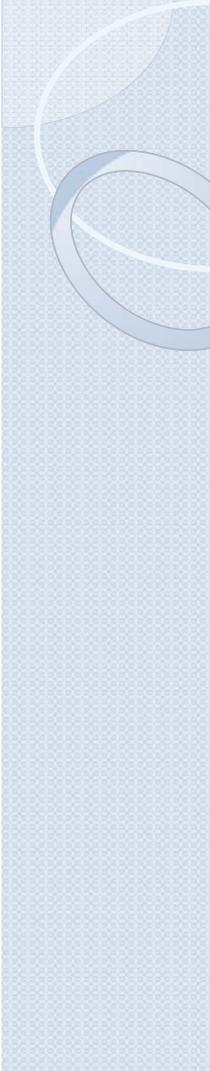
Examples of additional elements that amount to significantly more than the exception

1. Improvements to another technology or technical field;

2. Improvements to the functioning of the computer itself;

3. Applying the judicial exception with, or by use of, a particular machine;

4. Effecting a transformation or reduction of a particular article to a different state or thing;

5. Adding a specific limitation other than what is well-understood, routine and conventional in the field, or adding unconventional steps that confine the claim to a particular useful application;

6. Other meaningful limitations beyond generally linking the use of the judicial exception to a particular technological environment.
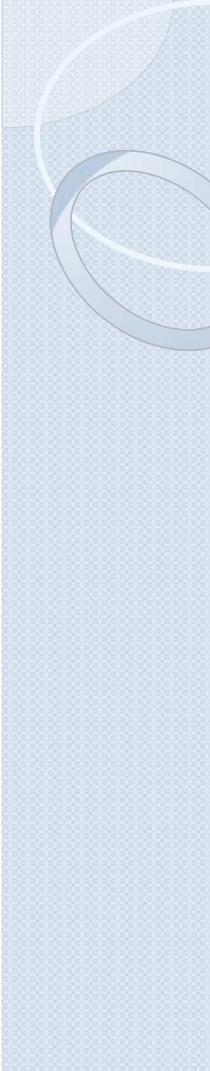
Takeaways

- Recite at least one inventive clause
  - Provides a technical solution to a technical problem.
  - Result of combining prior art structures is not normal, expected, or predictable.

- Confine the claim to a specific application

- Tie the claim to technological components
  - Generic computer can be used if the invention is rooted in computer hardware/software.
  - Otherwise, special-purpose components are required.
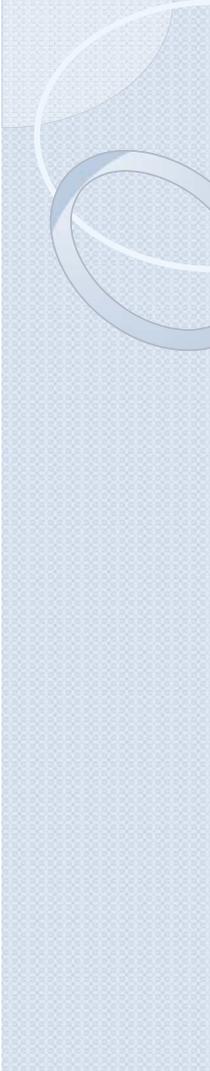
Hypothetical claims : patent-ineligible

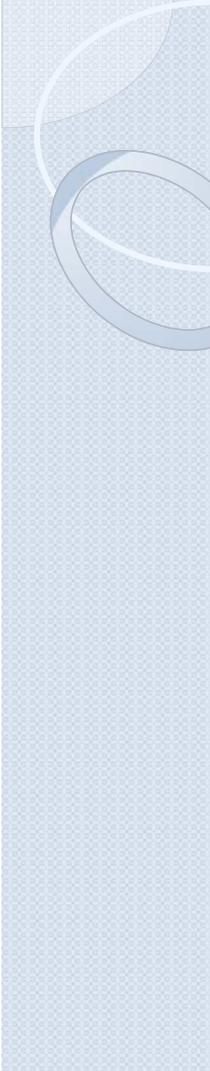A method of distributing stock quotes over a network to a remote subscriber computer, the method comprising:

receiving stock quotes at a transmission server sent from a data source over the Internet, the transmission server comprising a microprocessor and memory that stores the remote subscriber's preferences for information format, destination address, specified stock price values, and transmission schedule, wherein the microprocessor

filters the received stock quotes by comparing the received stock quotes to the specified stock price values;

generates a stock quote alert from the filtered stock quotes that contains a stock name, stock price and a universal resource locator (URL), which specifies the location of the data source;

formats the stock quote alert into data blocks according to said information format; and

transmits the formatted stock quote alert to a computer of the remote subscriber based upon the destination address and transmission schedule.

Hypothetical claims : patent-eligible

A method of distributing stock quotes over a network to a remote subscriber computer, the method comprising:

providing a stock viewer application to a subscriber for installation on the remote subscriber computer;

receiving stock quotes at a transmission server sent from a data source over the Internet, the transmission server comprising a microprocessor and a memory that stores the remote subscriber's preferences for information format, destination address, specified stock price values, and transmission schedule, wherein the microprocessor

filters the received stock quotes by comparing the received stock quotes to the specified stock price values;

generates a stock quote alert from the filtered stock quotes that contains a stock name, stock price and a universal resource locator (URL), which specifies the location of the data source;

formats the stock quote alert into data blocks according to said information format; and

transmits the formatted stock quote alert over a wireless communication channel to a wireless device associated with a subscriber based upon the destination address and transmission schedule, wherein the alert activates the stock viewer application to cause the stock quote alert to display on the remote subscriber computer and to enable connection via the URL to the data source over the Internet when the wireless device is locally connected to the remote subscriber computer and the remote subscriber computer comes online.
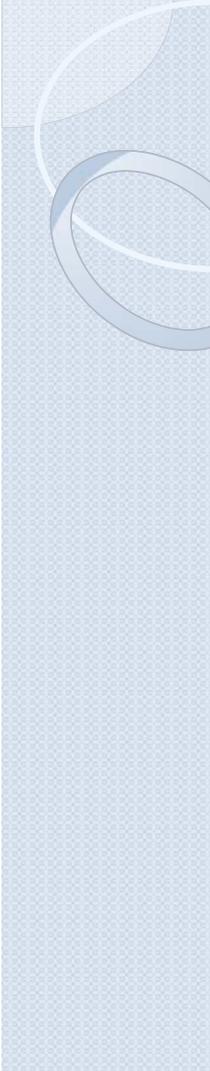
Takeaways

➢ "Rooted in XXXX technology/field" means the technical problem that the claimed invention overcomes is a problem specifically arising in such technology/field.

➢ For the computer/internet technologies, if the problem already exists in the pre-computer/internet era, it is unlikely to be "rooted" in a computer/network-related field.

➢ Need to emphasize in the specification that the problem overcome specifically arises in the technology/field.
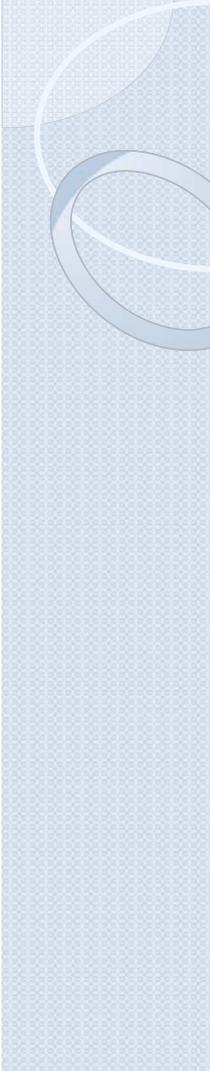
THANK YOU!!!

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