



**The Effect of *Alice Corp. v. CLS Bank Int'l*: Recent Developments in the "Abstract Idea" Exception to Patent Eligibility Under 35 U.S.C. § 101**

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## Alice Analysis: Two-Steps

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- The **first step** in the analysis is determining whether the claims at issue are directed to an "abstract idea."
- If the claims are determined to be directed to an "abstract idea," the **second step** is determining whether the claims recite additional elements constituting an "inventive concept" that is sufficient to transform the abstract idea into a patent-eligible application. The Court stated that the claims at issue in the *Benson*, *Flook*, and *Bilski* decisions recited abstract ideas.

## Alice Analysis: Abstract Idea

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What is an abstract idea?

- The Court did not provide any clear guidance and expressly declined to "delimit the precise contours of the 'abstract ideas' category."
- The Court stated that the claims at issue in the *Benson*, *Flook*, and *Bilski* decisions recited abstract ideas.
- The claims at issue in *Alice* were held to be abstract because they were similar to *Bilski* in that intermediated settlement is also "a fundamental economic practice long prevalent in our system of commerce."
- The Court rejected Alice's proposal that the "abstract idea" exception should be limited to "pre-existing fundamental truths that exist in principle apart from any human action."

# Alice Analysis: Transformative Inventive Concept

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If the claim is directed to an abstract idea, does it contain an inventive concept that is sufficient to transform the idea into a patent-eligible application of an idea?

- Is there an "inventive concept" that amounts to "to significantly more than a patent upon the [ineligible concept] itself."
- The Court explained this step in view of its prior decisions.
- The *Mayo* claims did not supply a transformative inventive concept because they only appended conventional steps to an abstract idea, which were specified at a high level of generality.

## Alice Analysis: Transformative Inventive Concept

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- The *Benson* and *Flook* claims did not include a transformative inventive concept because they represented the implementation of a patent ineligible mathematical formula on a conventional computer.
- *Diehr* is the only case in which a claim directed to an abstract idea was found to include a transformative inventive concept.
- The *Diehr* claims were patent eligible because the claims implemented a patent ineligible equation by using temperature data taken at a particular location within the tire mold, which allowed a more accurate determination of the cure time.

## *Alice*: Summary

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- The Court held that intermediated settlement is an "abstract idea" because it is a "fundamental economic practice long prevalent in our system of commerce."
- The computer implementation in the *Alice* claims did not add a sufficient "inventive concept" to render the method patent eligible – it merely said "apply it" with a conventional computer.
- In the non-method claims, the additional limitations merely link the method to a particular technological environment – namely implementation via computers.
- Three justices opined that no business methods should be patent eligible.

## Post-Alice Federal Circuit cases

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- *Planet Bingo v. VKGS* (August 26, 2014) (claims directed to computer-aided management of Bingo games were held to be patent ineligible as an abstract idea with generic computer implementation, similar to *Alice* and *Bilski*.)
- *Digitech Image Tech v. Electronics For Imaging* (July 11, 2014) (method claims for processing image data were held to be patent ineligible because the claims were "so abstract and sweeping" they would preempt all uses of the concept).

## Post-Alice Federal Circuit cases

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- *BuySafe v. Google* (September 3, 2014) (claims for guaranteeing a party's performance of its online transaction held to be patent ineligible based on *Alice* and *Bilski* as directed to merely "creating familiar commercial arrangements by use of computers and networks.")
- *Ultramercial, Inc. v. Hulu, LLC* (November 14, 2014) ((i) the concept embodied by the majority of the limitations describes only the abstract idea of displaying an advertisement before delivering free content, and (ii) the extra-solution steps of updating an activity log, requiring a request from the consumer to view the ad, restrictions on public access, and use of the Internet do not transform the abstract idea into patent-eligible subject matter because they simply instruct the practitioner to implement the abstract idea with routine, conventional activity.



## Post-Alice Federal Circuit cases

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- *DDR Holdings, LLC v. Hotels.com* (December 5, 2014):
  - The Court did not specifically determine whether the claims were directed to an abstract idea under the first step of the *Alice* analysis. Instead, the Court found that even if the claims were directed to an abstract idea, the claims recited a patent-eligible application of the abstract idea under the second step of the *Alice* analysis
  - The Court reasoned that the claims “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.” The Court further reasoned that “the claimed solution is necessarily rooted in computer-technology in order to overcome a problem specifically arising in the realm of computer networks.”
  - The Court distinguished the claims at issue in *Ultramercial*, by reasoning that “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.”

## *Alice* USPTO Guidelines

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- On December 16, 2014 the USPTO released comprehensive "Interim Guidance on Patent Subject Matter Eligibility"
- The USPTO—for now—appears to be limiting what it considers to be patent ineligible abstract ideas to the following categories identified in *Alice*:
  1. fundamental economic practices;
  2. certain methods of organizing human activities;
  3. an idea of itself; and
  4. mathematical relationships and formulas.

## Alice USPTO Guidelines

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- The Guidelines suggest three very broad categories of things that could transform an abstract idea into patent-eligible subject matter:
  1. improvements to another technology or technical field;
  2. improvements to the functioning of the computer itself; and
  3. meaningful limitations beyond generally linking the use of an abstract idea to a particular technological environment (e.g., computer implementation).

## *Alice* USPTO Guidelines

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- On January 27, 2015, the USPTO released examples of computer-implemented claims that it considers to be patent-eligible (four examples) and computer-implemented claims that it considers to be ineligible (four examples) under the *Alice* analysis.

# Alice USPTO Guidelines

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- **Example 1 - Isolating and Removing Malicious Code from Electronic Messages**

1. A computer-implemented method for protecting a computer from an electronic communication containing malicious code, comprising executing on a processor the steps of:

receiving an electronic communication containing malicious code in a computer with a memory having a boot sector, a quarantine sector and a non-quarantine sector;

storing the communication in the quarantine sector of the memory of the computer, wherein the quarantine sector is isolated from the boot and the non-quarantine sector in the computer memory, where code in the quarantine sector is prevented from performing write actions on other memory sectors;

extracting, via file parsing, the malicious code from the electronic communication to create a sanitized electronic communication, wherein the extracting comprises

scanning the communication for an identified beginning malicious code marker, flagging each scanned byte between the beginning marker and a successive end malicious code marker,

continuing scanning until no further beginning malicious code marker is found, and

creating a new data file by sequentially copying all non-flagged data bytes into a new file that forms a sanitized communication file;

transferring the sanitized electronic communication to the non-quarantine sector of the memory; and

deleting all data remaining in the quarantine sector.

## Alice USPTO Guidelines

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- The claim is patent eligible because it is not an abstract idea under the first step of the Alice analysis.
- The claim is directed towards physically isolating a received communication on a memory sector and extracting malicious code from that communication to create a sanitized communication in a new data file, which does not describe an abstract concept, or a concept similar to those found by the courts to be abstract, such as a fundamental economic practice, a method of organizing human activity, an idea itself (standing alone), or a mathematical relationship.
- The invention claimed here is directed towards performing isolation and eradication of computer viruses, worms, and other malicious code, a concept inextricably tied to computer technology and distinct from the types of concepts found by the courts to be abstract.

# Alice USPTO Guidelines

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- **Example 2 - E-Commerce Outsourcing System Generating a Composite Web Page (based on *DDR Holdings*)**

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;

- wherein each of the first web pages belongs to one of a plurality of web page owners;
- 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
- 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:

- 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;
- automatically identify as the source page the one of the first web pages on which the link has been activated;
- in response to identification of the source page, automatically retrieve the stored data corresponding to the source page; and
- 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.

# Alice USPTO Guidelines

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- The claim is patent eligible because it is not an abstract idea under the first step of the Alice analysis and under the second step has additional limitations that amount to significantly more than the abstract idea.
- **Step 1:** the claim is directed to automatically generating and transmitting a web page in response to activation of a link using data identified with a source web page having certain visually perceptible elements. The claim does not recite a mathematical algorithm; nor does it recite a fundamental economic or longstanding commercial practice. The claim addresses a business challenge (retaining website visitors) that is particular to the Internet. The claimed invention does 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. No idea similar to those previously found by the courts to be abstract has been identified in the claim. (This is different from the Court's analysis in *DDR* which declined to decide whether the claim was directed to an abstract idea and instead went directly to the second step.)



## Alice USPTO Guidelines

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- **Step 2:** the claims recites a system that, among other things, 1) stores “visually perceptible elements” corresponding to numerous host websites in a database, with each of the host websites displaying at least one link associated with a product or service of a third-party merchant, 2) on activation of this link by a website visitor, automatically identifies the host, and 3) instructs an Internet web server of an “out-source provider” to construct and serve to the visitor a new, hybrid web page that merges content associated with the products of the third-party merchant with the stored “visually perceptible elements” from the identified host website. These limitations amount to significantly more than the abstract idea and would transform the abstract idea into a patent-eligible application of an abstract idea.

# Alice USPTO Guidelines

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- **Example 3 - Digital Image Processing**

3. A system for halftoning a gray scale image, comprising:

a processor that generates a blue noise mask by encoding changes in pixel values across a plurality of blue noise filtered dot profiles at varying gray levels;

a first memory for storing the blue noise mask; and

a second memory for storing a received gray scale image;

wherein the processor further compares, on a pixel-by-pixel basis, each pixel of the gray scale image to a threshold number in the corresponding position of the blue noise mask to produce a binary image array and converts the binary image array to a halftoned image.

# Alice USPTO Guidelines

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- The claim is patent eligible because, although it is directed to an abstract idea under the first step of the Alice analysis, under the second step, it has additional limitations that amount to significantly more than the abstract idea because they show (i) an improvement in the functioning of the computer itself, and (ii) an improvement to another technology/technical field.
- **Step 1:** The claim recites the step of generating a blue noise mask, which is defined in the background as being produced through an iterative mathematical relationship. Mathematical relationships are one category of abstract idea.
- **Step 2:** The steps recited in addition to the blue noise mask improve the functioning of the claimed computer itself by allowing the computer to use to less memory than required for prior masks, providing faster computation time without sacrificing the quality of the resulting image as occurred in prior processes, and producing an improved digital image. These are also improvements in the technology of digital image processing

# Alice USPTO Guidelines

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- **Example 4 – GPS System**

1. A system for calculating an absolute position of a GPS receiver and an absolute time of reception of satellite signals comprising:

a mobile device comprising a GPS receiver, a display, a microprocessor and a wireless communication transceiver coupled to the GPS receiver, the mobile device programmed to receive PN codes sent by a plurality of GPS satellites, calculate pseudo-ranges to the plurality of GPS satellites by averaging the received PN codes, and transmit the pseudo-ranges, and

a server comprising a central processing unit, a memory, a clock, and a server communication transceiver that receives pseudo-ranges from the wireless communication transceiver of the mobile device, the memory having location data stored therein for a plurality of wireless towers, and the central processing unit programmed to:

estimate a position of the GPS receiver based on location data for a wireless tower from the memory and time data from the clock,

calculate absolute time that the signals were sent from the GPS satellites using the pseudo-ranges from the mobile device and the position estimate,

create a mathematical model to calculate absolute position of the GPS receiver based on the pseudo-ranges and calculated absolute time,

calculate the absolute position of the GPS receiver using the mathematical model, and

transmit the absolute position of the GPS receiver to the mobile device, via the server communication transceiver, for visual representation on the display.

# Alice USPTO Guidelines

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- The claim is patent eligible because, although it is directed to an abstract idea under the first step of the Alice analysis, it has additional elements that amount to significantly more than the abstract idea because they show an improvement to another technology or technical field.
- **Step 1:** The claim recites mathematical operations (e.g., calculating pseudo-ranges and absolute times, and the mathematical model). Mathematical relationships are one category of abstract idea.
- **Step 2:** Limiting performance of the mathematical calculations to a general purpose CPU, absent more, is not sufficient to transform the recited judicial exception into a patent-eligible invention. But, when the function of the CPU is considered with the features of the mobile device, the combination of elements impose meaningful limits in that the mathematical operations are applied to improve an existing technology (global positioning) by improving the signal-acquisition sensitivity of the receiver to extend the usefulness of the technology into weak-signal environments and providing the location information for display on the mobile device. These are also improvements in the technology of global positioning.

# Alice USPTO Guidelines

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- **Example 5** – Digital Image Processing (based on *Digitech Image Tech*)

10. 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.

- This claim is ineligible because it is directed to an abstract idea and does not have any additional elements that could amount to more than the abstract idea itself.

# Alice USPTO Guidelines

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- **Step 1:** The gathering and combining merely employs mathematical relationships to manipulate existing information to generate additional information in the form of a device profile, without limit to any use of the device profile. Manipulating information using mathematical relationships has been found by the courts to be an abstract idea.
- **Step 2:** The claim does not include additional elements beyond the abstract idea of gathering and combining data. Therefore, the claim does not amount to more than the abstract idea itself.

# Alice USPTO Guidelines

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- **Example 6 –**  
Bingo Game (based  
on *Planet Bingo*)

Claim 1. A system for managing a game of Bingo which comprises:

- (a) a computer with a central processing unit (CPU) and with a memory and with a printer connected to the CPU;
- (b) an input and output terminal connected to the CPU and memory of the computer; and
- (c) a program in the computer enabling:
  - (i) input of at least two sets of Bingo numbers which are preselected by a player to be played in at least one selected game of Bingo in a future period of time;
  - (ii) storage of the sets of Bingo numbers which are preselected by the player as a group in the memory of the computer;
  - (iii) assignment by the computer of a player identifier unique to the player for the group having the sets of Bingo numbers which are preselected by the player wherein the player identifier is assigned to the group for multiple sessions of Bingo;
  - (iv) retrieval of the group using the player identifier;
  - (v) selection from the group by the player of at least one of the sets of Bingo numbers preselected by the player and stored in the memory of the computer as the group for play in a selected game of Bingo in a specific session of Bingo wherein a number of sets of Bingo numbers selected for play in the selected game of Bingo is less than a total number of sets of Bingo numbers in the group;
  - (vi) addition by the computer of a control number for each set of Bingo numbers selected for play in the selected game of Bingo;
  - (vii) output of a receipt with the control number, the set of Bingo numbers which is preselected and selected by the player, a price for the set of Bingo numbers which is preselected, a date of the game of Bingo and optionally a computer identification number; and
  - (viii) output for verification of a winning set of Bingo numbers by means of the control number which is input into the computer by a manager of the game of Bingo.



# Alice USPTO Guidelines

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- The claim is not patent eligible because it is directed to an abstract idea and has additional elements that do not amount to significantly more than the abstract idea.
- **Step 1:** The claim recites program elements (i) through (viii) that describe the steps of managing a game of Bingo, including for example inputting and storing two sets of Bingo numbers, assigning a unique player identifier and control number, and verifying a winning set of Bingo numbers. Managing the game of Bingo can be performed mentally or in a computer and is a kind of organizing human activity.
- **Step 2:** The claim requires the additional limitations of a computer with a CPU, memory, a printer, an input and output terminal, and a program. These generic computer components perform their basic functions of storing, retrieving and processing data through the program that enables the management of the game of Bingo. These limitations amount to mere instructions to implement the abstract idea on a computer, which is insufficient to transform the abstract idea into a patent-eligible application.

# Alice USPTO Guidelines

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- **Example 7 - E-Commerce providing Transaction Performance Guaranty (based on *BuySafe*)**
  1. A method, comprising:
    - receiving, by at least one computer application program running on a computer of a safe transaction service provider, a request from a first party for obtaining a transaction performance guaranty service with respect to an online commercial transaction following closing of the online commercial transaction;
    - processing, by at least one computer application program running on the safe transaction service provider computer, the request by underwriting the first party in order to provide the transaction performance guaranty service to the first party,
    - wherein the computer of the safe transaction service provider offers, via a computer network, the transaction performance guaranty service that binds a transaction performance guaranty to the online commercial transaction involving the first party to guarantee the performance of the first party following closing of the online commercial transaction.
- The claim is not patent eligible because it is directed to an abstract idea and has additional elements that do not amount to significantly more than the abstract idea.

# Alice USPTO Guidelines

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- **Step 1:** The steps of creating a contract, including receiving a request for a performance guaranty (contract), processing the request by underwriting to provide a performance guaranty and offering the performance guaranty merely describe the creation of a contractual relationship, which falls within the abstract idea category of a fundamental economic practice.
- **Step 2:** 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, which do not amount to significantly more than the abstract idea itself.

# Alice USPTO Guidelines

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- **Example 8 – Distribution of Products over the Internet (based on *Ultramercial*)**

1. 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.

# Alice USPTO Guidelines

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- The claim is not patent eligible because it is directed to an abstract idea and has additional elements that do not amount to significantly more than the abstract idea.
- **Step 1:** The claim describes the concept of using advertising as an exchange or currency. This concept is similar to the concepts involving human activity relating to commercial practices (e.g., hedging in *Bilski*) that have been found by the courts to be abstract ideas
- **Step 2:** The additional limitations such as accessing and updating an activity log, requiring a request from the consumer to view the advertising, restricting public access, and using the Internet as an information transmitting medium, either viewed individually, or together represent insignificant pre-solution and post-solution activity that is necessary and routine in implementing the concept of using advertising as an exchange or currency, or merely limit the invention to the Internet—none of which add significantly more to the abstract idea of using advertising as an exchange or currency.

# Recommendations

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- Focus on novel method steps or combinations of method steps—this is important to demonstrate, for example, an improvement in a technological field (*Alice* step 2);
- If the method is arguably based in part on an abstract idea but not previously implemented on a computer, focus on details of the computer or of the recited steps that improve on the method or improve the computer itself;
- Focus on details of how or where in a technical process input data is derived or output data is used;

# Recommendations

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- When explaining why a claim is eligible analogize the claim to the claims at issue in Supreme Court cases (i.e., *Diehr*), Federal Circuit Cases (i.e., *DDR Holdings*), and Examples 1-4 from the USPTO's examples. (This has been a successful strategy for us so far.)

Questions?