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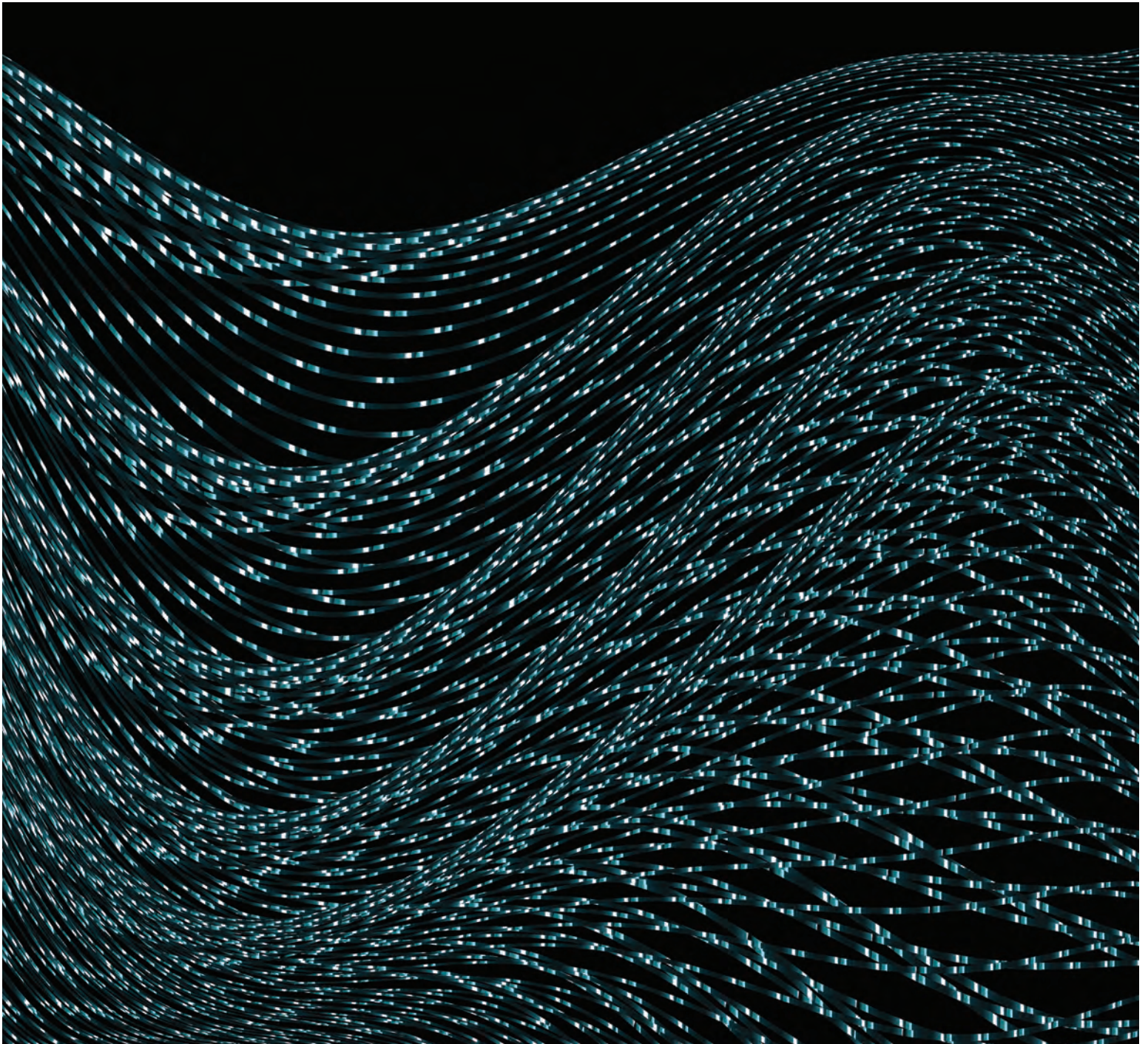
Out of Wonderland from *Diehr* to *Aatrix*: 3 Steps to Overcoming 101 Rejections

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INTRODUCTION

In June 2014, the United States Supreme Court in *Alice Corporation Pty. Ltd. v. CLS Bank International, et al.*¹ removed the presumption that software operating on standard hardware components could avoid being deemed an abstract idea, even though the claim language was sufficiently tied to a machine. Many in the industry saw *Alice* as a turning point marking the dramatic rollback of patent eligibility under 35 U.S.C. §101 for many software-based inventions.

Applying the two-step test developed in the biotechnology decision *Mayo*,² *Alice* extended the *Mayo* test to determine patent eligibility for computer software inventions: step one, known as the “filter step,” is whether the claims at issue are directed to a patent-ineligible concept, such as an abstract idea. If the claims are deemed abstract in step one, then the inquiry passes to step two, which tests whether the elements of the claim contain an inventive concept sufficient to transform the abstract idea determined in filter step one into a patent-eligible invention. To determine step two, the court may look at individual claim limitations or the ordered combination of claim limitations to test whether there is “something more” than the performance of well-understood routine and conventional activities previously performed manually or already known in the industry. While the *Alice* court noted that software using conventional computer hardware to produce new functions is not subject-matter eligible, the Court did not provide specific guidance on when a claim reciting those conventional components is or is not patent eligible.

Not surprisingly, *Alice* has led to some confusion, among both practitioners and patent examiners at the United States Patent and Trademark Office (“PTO”), about how to apply it from a practical standpoint. For practitioners attempting to patent software, there is plenty of guidance.³ First, a substantial body of District Court and Federal Circuit cases have construed *Alice*. Because many of the patents in those cases were written before *Alice* was decided, many of the earlier cases found against the patentee. Second, there have been a number of cases (especially since the beginning of 2018) that have gone the other way, giving patent owners a glimmer of hope and, more critically, cogent arguments to counter subject matter eligibility rejections by the PTO.

All the same, it is hard to draw clear conclusions from post-*Alice* case law other than that the cases are heavily fact dependent and no bright-line test appears evident. Indeed as the Federal Circuit recently wrote: “[T]he problem with articulating a single, universal definition of ‘abstract idea’ is that it is difficult to fashion a workable definition to be applied to as-yet unknown cases with as-yet unknown inventions. Instead of a definition, then, the decisional mechanism courts now apply is to examine earlier cases in which a similar or parallel descriptive nature can be seen...”⁴

Closely following post-*Alice* case developments, the PTO issued various examination guidelines and quick reference tools in 2014, 2015, 2016, 2017, and 2018.⁵ Not surprisingly, the PTO guidelines are lengthy—over 200 pages of instruction, examples, and reference tools in multiple documents including the life sciences. The guidelines, which were released over time, attempt to create order out of cases that are often too confusing, inconsistent, and hard to follow to develop a clear picture. It is not entirely surprising, therefore, that some patent examiners are just as confused as practitioners when it comes to dealing with Section 101 and computer software-related inventions.

1. 134 S. Ct. 2347 (2014).

2. *Mayo Collaborative Services v. Prometheus Laboratories, Inc.*, 566 U.S. 66, 77-79 (2012).

3. It should be noted that this confusion also extends to non-U.S. practitioners. For example, prior to *Alice*, the European Patent Office (“EPO”) was seen as having the more restrictive test for software patent eligibility. Despite the express provision excluding the patentability of software under Article 52 of the European Patent Convention (“EPC”), the EPO has applied a de minimus approach favoring claims evidencing a “technical character,” as long as “any demonstration and degree of ‘technical character’ is shown, such as the ‘mere use’ of a computer.” Since *Alice*, however, the U.S. subject matter test is stricter—which some practitioners see as a role reversal for the United States.

4. *AmDocs*, 841 F.3d 1288, 1294 (Fed. Cir. 2016).

5. Specifically, the PTO issued: 2014 Interim Guidance on Patent Subject Matter Eligibility; July 2015 Update: Subject Matter Eligibility; May 2016 Memo; Enfish and TLI Memo; Rapid Litigation Management and Sequenom Memo; McRO and BASCOM Memo; Abstract Idea Examples 1-8; Nature-based Product Examples 9-18; Abstract Idea Examples 21-27; Life Sciences Examples 28-33; Business Method Examples 34-36; Index of Examples; Summary of 2014 IEG; Summary of July 2015 Update; Decisions holding claims eligible and identifying abstract ideas; and Chart of subject matter eligibility court decisions.

The purpose of this paper is to draw some conclusions about how to effectively handle software inventions in the post-*Alice* era before the PTO. Set out below are a few steps that may help alleviate some of the confusion and hopefully provide guidance in overcoming a 101 rejection.

KNOW THESE 12 CASES

In developing arguments concerning an outstanding 101 rejection, it is important to begin by knowing those cases that are supportive of patent eligibility. Here is a shorthand guide to the one Supreme Court case and the 11 Federal Circuit decisions that have upheld patent eligibility. The Federal Circuit decisions are organized by which part of the two-step *Alice* test allowed the claims in those decisions to pass legal muster, then by date.

CASE 1

***Diamond v. Diehr*, 450 U.S. 175 (1981): Technically Significant Control of Another Device for Improved Performance**

Diamond v. Diehr predates *Alice* by 37 years, but represents the *only* time the U.S. Supreme Court recognized computer software claims as being patent eligible subject matter under 35 U.S.C. § 101. *Diehr* is still good law and should be used as a basis for supporting your claims, if possible.

The claims at play in *Diehr* involved the computerized application of the 19th-century Arrhenius equation to automated timing and operation of a rubber tire mold. By way of example, claim 1 in *Diehr* recites, in pertinent part:

1. A method of operating a rubber-molding press for precision molded compounds with the aid of a digital computer, comprising:
providing said computer with a database for said press...
repetitively calculating in the computer, at frequent intervals during each cure, the Arrhenius equation for reaction time during the cure...
repetitively comparing in the computer at said frequent intervals during the cure each said calculation of the total required cure time calculated with the Arrhenius equation and said elapsed time, and
opening the press automatically when a said comparison indicates equivalence.

The *Diehr* claim strategy focused on how to describe an abstract mathematical expression in a manner that provided significant machine control steps. Of paramount importance was to avoid the trap of *Parker v. Flook*⁶ where the claim was characterized as reciting insignificant post-solution activity. As such, *Diehr* provided detailed machine control steps, such as “opening the press automatically” when the compared calculated cure time was equivalent to the elapsed time in the tire mold. *Diehr* should be used where the software invention involves systems or methods using an output signal to control the operations of a machine (other than the computer itself), such as an engine, a printer, a heater, etc., and the software improves the internal operations of that controlled device. Evidence of a control signal alone will not necessarily meet *Alice*, but the control signal combined with an argument explaining why the machine’s operation is improved by the invention as claimed when compared to manual methods is likely to be persuasive to examiners. For instance, if the claimed software involves control of an automobile engine, then the use of a computer and equations tied to the computer along with an argument explaining why such use improves technical engine performance over the prior art, and why the same result could not be accomplished manually, should help to establish that the claimed invention is patent eligible.

6. *Parker v. Flook*, 437 U.S. 584 (1978).

FEDERAL CIRCUIT DECISIONS UNDER ALICE STEP 1: THE “FILTER TEST”

CASE 2

***DDR Holdings v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014): Internet Technological Improvements**

DDR Holdings involved a patent covering Internet technology regarding a composite web page. According to the Court, the claimed system was patent eligible because it solved a problem necessarily rooted in computer technology and specifically arising in the realm of computer networks. Claim 13 in *DDR* recites in pertinent part:

13. An e-commerce outsourcing system comprising:
 - a) a data store including a look and feel description associated with a host web page having a link correlated with a commerce object; and
 - b) a computer processor coupled to the data store and in communication through the Internet with the host web page and programmed, upon receiving an indication that the link has been activated by a visitor computer in Internet communication with the host web page, to serve a composite web page to the visitor computer wit[h] a look and feel based on the look and feel description in the data store and with content based on the commerce object associated wit[h] the link.

According to the Court, the claimed system solved a problem necessarily rooted in computer technology and specifically arising in the realm of computer networks. In its claim analysis, the Federal Circuit was careful to differentiate the *DDR* claims from examples of prior art manual systems, such as the brick and mortar kiosk within a store (exemplified in Judge Mayer’s dissent). The Court also distinguished the *DDR* claims from those in its *Ultramercial* decision which were found to be abstract and ineligible.⁷ The claims in *DDR* did more than broadly and generically describe use of the Internet, and they did not preempt the idea of increasing sales by making two web pages look the same. The Court concluded that the claims recited a specific way to automate creation of a composite web page by an “outsource provider” that incorporates elements from multiple sources in order to solve a problem faced by websites on the Internet. While the claims were not technologically complex, they were nonetheless specific and thus more technologically justifiable—since they described “how interactions with the Internet are manipulated to yield a desired result.” From a claim-drafting perspective, a useful application of *DDR* is to develop a claim recitation that avoids preemption by breaking down the invention into processing steps that collectively recite interacting with Internet data, developing a composite construct, describing how data is used to create that construct, and explaining how the processing steps are activated.

From a claim-drafting perspective, a useful application of *DDR* is to develop a claim recitation that avoids preemption by breaking down the invention into processing steps that collectively recite interacting with Internet data, developing a composite construct, describing how data is used to create that construct, and explaining how the processing steps are activated.

7. *Ultramercial, Inc. v. Hulu LLC*, 772 F.3d 709 (Fed. Cir. 2014)

CASE 3

***Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016): Logical Improvement in Computer Database**

In *Enfish v. Microsoft*, the Federal Circuit found that a new logical organization for a database was patent eligible under Step 1 of *Alice*, even though all of the improvements were tied to the database’s internal logic. The Court in *Enfish* emphasized that the key question is whether the focus of the claims is on the specific asserted improvement in computer capabilities or instead on a process in which computers are invoked merely as a tool. As in its later decision in *Trading Tech* (see below, Note 11), the Court was convinced that the claims at issue improved the functionality of the computer, or, more specifically, the computer database. However, *Enfish* differs from *Trading Tech* in that it is the organizational logic of the database, rather than a software process modifying the operations of display hardware, that ultimately carried the day. *Enfish* claim 17 exemplifies this in pertinent part below:

17. A data storage and retrieval system for a computer memory, comprising:
 means for configuring said memory according to a logical table, said logical table including:
 a plurality of logical rows, each said logical row including an object identification number (OID)...;
 a plurality of logical columns intersecting said plurality of logical rows to define a plurality of logical cells..., and
 means for indexing data stored in said table.

The *Enfish* Court found particular meaning in the means plus function claim language covering the self-referential feature, which while not explicit in the claim language itself, is part of the “means for configuring” term as defined in the specification. Thus the Court was more readily able to tie technical description in the specification to the claim since it had a narrower range of equivalents.

The Court also relied on the improvements over the prior art that rendered the computer database more efficient and provided reasons why it was thus. It was the technological aspects of the patent description and their differentiation from the prior art that allowed *Enfish* to avoid the dilemma striking other patents: the lack of a detailed technological reason tied to computer hardware performance that distinguishes the invention over the prior art. In sum, *Enfish* was written from the inside—the internal logical operations of a computer database were described from a technological perspective, not from the viewpoint of the end user. *Enfish* therefore is a good case to use to the extent there are internal logic features that can be tied to arguments of improvement in computer functionality over the prior art.

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CASE 4

***McRO, Inc. dba Planet Blue v. Bandai Namco Games America Inc.,* 837 F.3d 1299 (Fed. Cir. 2016): Application of Rules to Improve a Technical Process**

A lesson of *McRO* is that in the event the software invention produces a result that is only displayed or is otherwise internal to the operations of the computer itself, the software needs to include the application of technical rules in order to be deemed non-abstract. The Federal Circuit's *McRO* decision provides the best legal rationale supporting such claims. Claim 1 in *McRO* provides in pertinent part:

1. A method for automatically animating lip synchronization and facial expression of three-dimensional characters comprising:
obtaining a first set of rules that define output morph weight set stream...
obtaining a timed data file of phonemes having a plurality of sub-sequences;
generating an intermediate stream of output morph weight sets and a plurality of transition parameters between two adjacent morph weight sets...;
generating a final stream of output morph weight sets...; and
applying said final stream of output morph weight sets to a sequence of animated characters to produce lip synchronization and facial expression control of said animated characters.

The *McRO* court was impressed that processing rules tied to the automation of lip synchronization solved a technical problem—automating face animation using specified rules and morph weights. The Court was satisfied, as in *Diehr*, that the problem being solved was not abstract, even though the process was entirely performed by software operating on a general purpose computer. What appeared to be compelling to the *McRO* court was that the lip synchronization rules were detailed and presented through an approach that could not be accomplished manually, and solved a technological problem in the art.

To adequately capture the technological rules evidenced in *McRO*, it is important to write the application and draft claims describing the software from a technologist standpoint or, stated differently, avoiding description of the software from the perspective of an end user. The software should be broken down and described in detail such that a programmer would understand, at almost the pseudo code level, the internal logic of the software. From this level of description, technical rules, such as those described and claimed in *McRO*, will be more easily ascertained.

It is important to distinguish *McRO* from other rules-based software method claims that are directed to the analysis of information that could be tied to the steps that people go through in their minds. For example, in the Federal Circuit's *FairWarning*⁸ decision, method claims were drawn to computer software rules for the analysis of records of human activity in order to detect suspicious behavior. The claim in *FairWarning* recites in pertinent part:

1. A method of detecting improper access of a patient's protected health information (PHI) in a computer environment, the method comprising:
generating a rule for monitoring audit log data representing at least one of transactions or activities...;
applying the rule to the audit log data to determine if an event has occurred, the event occurring if the at least one criterion has been met;
storing, in a memory, a hit if the event has occurred; and
providing notification if the event has occurred.

8. *FairWarning IP, LLC v. Iatric Sys.*, 839 F.3d 1089 (Fed. Cir. 2016).

Like *McRO*, the claims in *FairWarning* recite detailed processing rules. In *FairWarning*, however, the Court likened the rules to manual techniques for logging data already in use that were merely computerized. The Court further distinguished *McRO* in that the rules in *FairWarning* were directed to the analysis of gathered data rather than improving a technological computer process. The Court also characterized the claims as merely implementing an old practice in a new environment, which the Court held to be dealing with “the same questions... that humans in analogous situations detecting fraud have asked for decades, if not centuries.”

CASE 5

***Thales Visionix Inc., v. United States*, 850 F.3d 1343 (Fed. Cir. 2017): Improved Efficiency Using Inertial Sensors**

The patent in *Thales Visionix* involved the use of a new system of inertial sensors that directly measure the gravitational field of a platform frame and allow positional information to be calculated without reference to vehicle attitude or position of the moving platform. The sensors thus measure position and orientation more accurately than the prior art. System claim 1 recites in pertinent part:

1. A system for tracking the motion of an object relative to a moving reference frame, comprising:
 - a first inertial sensor mounted on the tracked object;
 - a second inertial sensor mounted on the moving reference frame;
 - an element adapted to receive signals from said first and second inertial sensors...to determine an orientation of the object relative to the moving reference frame....

The Court first analogized claim 1 to the claims in *Diehr*, in that both claim sets utilize mathematical equations to create an improved technological system: in *Thales Visionix*, the system “reduces errors in an inertial system that tracks an object on a moving platform[,]” and therefore “use[s] inertial sensors in a non-conventional manner to reduce errors.” As such, the claims were not purely directed to a patent ineligible natural law or abstract idea, but to a “useful technique to more efficiently track an object on a moving platform.” The Court then drew a parallel to *Enfish*, in that *Enfish*’s technique made the internal operations of a database more efficient, just as *Thales Visionix*’s new technique for using sensors to track an object on a moving platform improved efficiency. As a consequence, the *Thales* claims survived *Alice* step 1. For cases where known hardware elements are used in a new system that improves overall system efficiencies, *Thales* provides good legal basis for supporting arguments countering a 101 rejection.

CASE 6

***Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253 (Fed. Cir. 2017): Improved Computer Memory System Is Not Abstract**

The *Visual Memory* Court follows the *Enfish/Thales* line of opinions. Like the patents at issue in *Enfish* and *Thales*, the *Visual Memory* patent specification discusses advantages offered by a technological improvement. The patent at issue in *Visual Memory* involves a self-configuring programmable cache memory system that can be tailored to accommodate different processors without compromising individual processor performance. Claim 1 of the *Visual Memory* patent recites in pertinent part:

1. A computer memory system connectable to a processor and having one or more programmable operational characteristics, said characteristics being defined through configuration by said computer based on the type of said processor...said system comprising:
 - a main memory connected to said bus; and
 - a cache connected to said bus, wherein a programmable operational characteristic of said system determines a type of data stored by said cache.

In *Visual Memory*, the Court first asked whether the claims are directed to an improvement to computer functionality or an abstract idea. Citing *Enfish* and *Thales*, the Court concluded that the memory system at issue was a technological improvement in the capabilities of computing. In its analysis, the Court relied heavily on the specification's description of the improvements over prior art memory systems and also contrasted the technology bound description in *Visual Memory* with other cases which instead used hardware in a conventional manner and invoked a computer merely as a tool. Finally, the Court responded to the dissent, which characterized the invention as a black box solution, by relying on the detailed appendix of computer code, and held that the sufficiency of disclosure to one of ordinary skill in the art was not an inquiry under Section 101. For practitioners, *Visual Memory* can be cited when new data analysis can be tied to improved internal computer functionality over the prior art.

CASE 7

***Finjan, Inc. v. Blue Coat Systems, Inc.*, 2018 WL 341882 (Fed. Cir. 2018): Improved Virus Scan**

The patent at issue in *Finjan* provides a method that improves computer security where a security profile is attached to the downloaded item. The independent method claim in *Finjan* recites:

A method comprising:
receiving by an inspector a Downloadable;
generating by the inspector a first Downloadable security profile that identifies suspicious code in the received Downloadable;
linking by the inspector the first Downloadable security profile to the Downloadable before a web server makes the Downloadable available to web clients.

The Court distinguished *Finjan*'s method from the virus scan claimed in *Intellectual Ventures v. Symantec*⁹ because *Finjan*'s "Downloadable security profile" deployed a behavioral-based scan, rather than a direct code comparison, which enabled the computer scan to be applied more flexibly and set up more efficiently. The Court also likened this feature to the self-referential database in *Enfish* since the profile record enabled a computer to do things it could not do before—tailor security to different users and identify threats before files reach a user's computer. Finally, the Court further distinguished the case from *Apple*, *Affinity Labs*, and *Intellectual Ventures*¹⁰ by finding that the claims did not recite only the result but described generating a security profile and linking it to a Downloadable. As a result, according to the Court, the claimed method passed muster under *Alice* step 1 and there was "no need to set forth a further inventive concept for implementing the invention." For practitioners, *Finjan* should be helpful where the logical feature or function is used in an unconventional manner distinguishable from the prior art and it can be tied to improved computer performance.

CASE 8

***Core Wireless Licensing S.A.R.L. v. LG Electronics, Inc.*, 2016-2684, 2017-1922 (Fed. Cir. 2018): Improved GUI for Mobile Devices**

The inventions in *Core Wireless* involved mobile device display having an application summary window showing common functions and data which can be reached directly from the main menu in two steps: first launch the main menu, second, launch the summary window which displays the application in an unlaunched state. The Court found that while the generic idea of summarizing information certainly existed prior to the invention, these claims are directed to a particular manner of summarizing and presenting information in electronic devices rather than using conventional user interface methods. Claim 1 recites in pertinent part:

9. *Intellectual Ventures v. Symantec*, 838 F.3d 1307 (Fed. Cir. 2016).

10. *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229 (Fed. Cir. 2016), *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253 (Fed. Cir. 2016), and *Intellectual Ventures*, see note 9.

1. computing device comprising a display screen, the computing device being configured to display on the screen a menu listing one or more applications, and additionally being configured to display on the screen an application summary that can be *reached directly* from the menu, ... and wherein the application summary is displayed while the one or more applications are in an un-launched state.

The Court noted that the *Core Wireless* display was an improvement over prior art interfaces which had many deficits relating to efficient functioning, and that the invention improved the efficiency of the mobile device. For practitioners, *Core Wireless* provides another technology example of a GUI claim that was found to be non-abstract—along with the *McRO*, *DDR* and *Trading Techs* (non-precedential)¹¹ line of cases.

DECISIONS FINDING SUBJECT MATTER ELIGIBILITY UNDER ALICE STEP 2: AN INVENTIVE CONCEPT THAT TRANSFORMS AN ABSTRACT IDEA INTO A PATENT ELIGIBLE INVENTION

CASE 9

***Bascom Global Internet Services v. AT&T Mobility LLC*, 827 F.3d 1341 (Fed. Cir. 2016): Content Filtering Using Remote ISP**

Bascom involves 1997-era customizable filtering on a remote Internet service provider (“ISP”) server for multiple Internet accounts. Claim 1 recites an individually customizable filter, as follows:

1. A content filtering system for filtering content retrieved from an Internet computer network by individual controlled access network accounts, said filtering system comprising:
 - a local client computer generating network access requests for said individual controlled access network accounts;
 - at least one filtering scheme;
 - a plurality of sets of logical filtering elements; and
 - a remote ISP server coupled to said client computer and said Internet computer network, said ISP server associating each said network account to at least one filtering scheme and at least one set of filtering elements, said ISP server further receiving said network access requests from said client computer and executing said associated filtering scheme utilizing said associated set of logical filtering elements.

In *Bascom*, the Court found that, under *Alice* filtering step 1, the invention was an “abstract idea” because it involved filtering, which is a “long-standing, well-known method for organizing human behavior, similar to concepts previously found to be abstract.” However, the claims as a whole recited a discrete implementation of an abstract idea that was a technical improvement over prior art ways of filtering content. The inventive concept harnessed a specific technical feature of the Internet Protocol, which enabled a technologically improved filtering scheme that was not conventional or generic. The claims thus provided for an eligible technology-based solution as well as a software-based invention that improves on the performance of the computer itself and thereby transforms an abstract idea into a patent eligible invention.

11. Of note is *Trading Techs, Int’l, Inc. v. CQG, Inc.*, 2016-1616, Fed. App. 1001(Fed. Cir. 2017), a non-precedential Federal Circuit case involving an improved computer display. In *Trading Techs*, the method claims describe software-directed operations of a structured graphical user interface (“GUI”) for trading commodities. The Court found that the claims were directed to the operation of computer hardware and are not abstract so long as the claims are rooted in computer technology and overcame a problem specifically arising in computer technology. The method was found to be non-abstract because the software addresses and resolves “a specifically identified problem in the prior art relating to the speed, accuracy, and usability found in prior art GUIs that have no pre-electronic trading analog.”

CASE 10

***Amdocs v. Openet Telecom*, 841 F.3d 1288 (Fed. Cir. 2016): Improved Computer Accounting Program**

The invention in *Amdocs* involves a system which allows network service providers to account for and bill for Internet protocol (“IP”) network communications and includes information source modules, gatherers, a central event manager, a central database, a user interface, servers, and terminals. Representative claim 1 recites:

1. A computer program product embodied on a computer readable storage medium for processing network accounting information comprising:
computer code for receiving from a first source a first network accounting record;
computer code for correlating the first network accounting record with accounting information available from a second source; and
computer code for using the accounting information with which the first network accounting record is correlated to enhance the first network accounting record.

The Court concluded that claim 1 was narrowly drawn to not preempt generic enhancement of data and instead purposely arranges the components in a distributed architecture to achieve a technological solution specific to computer networks. More specifically, the distributed architecture of the claims solved the technological problem of large record flows to a central location by enhancing the distributed data matching capabilities of the network. Although the subcomponents were generic, the claims have them working together in a new distributed manner. As such, the distributed architecture provides “something more” than the performance of well-understood routine and conventional activities previously known in the industry. The Court compared the claim at issue favorably with those of *Bascom* and *DDR Holdings* which were technical improvements over the prior art and served to improve the performance of the system itself.

CASE 11

***Berkheimer v. HP Inc.*, No. 2017-1437, 2018 U.S. App. LEXIS 3040 (Fed. Cir. Feb. 8, 2018): Evidence Required for Well-Understood, Routine, and Conventional Activity**

Berkheimer is a departure from other Federal Circuit cases in that it offers a new weapon against those PTO rejections that conclude, without support, that the invention merely computerizes well-understood, routine, and conventional activities.

The patent at issue relates to processing and archiving files in a digital asset management system. Pertinent portions of claims 1 and 4 of the *Berkheimer* patent are set forth below:

1. A method of archiving an item comprising in a computer processing system:
presenting the item to a parser...;
parsing the item into a plurality of multi-part object structures...
evaluating the object structures...;
presenting an evaluated object structure for manual reconciliation...
4. The method as in claim 1 which includes storing a reconciled object structure in the archive without substantial redundancy.

The *Berkheimer* Court analyzed claims 1 and 4 under *Alice* step 1 and concluded that they recited the abstract concepts of parsing and storing data. Under *Alice* step 2, the Court looked at whether or not the additional elements transform the nature of the claim into a patent eligible concept. In construing claim 1, the Court concluded that it did not disclose any of the unconventional activities disclosed in the specification (which the inventor admitted existed for years before his patent). However, claim 4 recites a “reconciled object structure” which the patent specification explained involved a one-to-many editing capability that substantially reduces efforts to update files, and which is described as unconventional. The Court found that there was a genuine issue of material fact whether or not claims 4–7 performed well-understood, routine, and conventional activities or whether they were transformative unconventional techniques that improve computer functionality. The Court concluded that facts pertinent to the invalidity conclusion must be proven by clear and convincing evidence, and the mere fact that something is disclosed in a piece of prior art does not necessarily mean it was well-understood, routine, and conventional. The court vacated the grant of summary judgment on claims 4–7 and remanded for further fact finding.

For practitioners, *Berkheimer* provides a basis for challenging unsupported conclusions by the Examiner that the claims recite conventional use of hardware. More critically, *Berkheimer* also can support a challenge to such a conclusion by the Examiner even when the Examiner does cite to some prior art. *Berkheimer*, however, may also be seen as an outlier, and it well may be further tested *en banc*.

CASE 12

***Aatrix Software, Inc. v. Green Shades Software, Inc.*, 2017-1452, 2018 U.S. App. LEXIS 3463 (Fed. Cir. Feb. 14, 2018). Factual Basis Required for Rule 12(b)(6) Dismissal under 101**

The *Aatrix* decision follows *Berkheimer* regarding the proper factual and procedural basis required by the Federal Circuit to warrant early dismissal—in this case under F.R. 12(b)(6). The technology in *Aatrix* relates to systems for creating viewable forms and reports. Representative claim 1 reads in pertinent part as follows:

A data processing system for designing, creating, and importing data into, a viewable form viewable by the user of the data processing system, comprising:
a form file that models the physical representation of an original paper form...;
a form file creation program that imports a background image from an original form...;
a data file containing data from a user application for populating the viewable form; and
a form viewer program ... to perform calculations, allow the user of the data processing system to review and change the data, and create viewable forms and reports.

At the District Court, defendant Green Shades moved to dismiss under Section 101 as the claims were “not directed to any tangible embodiment.” The Federal Circuit first analyzed claim 1 and found that it was tangible since it fulfilled one of the four statutory categories under Section 101 by containing a data processing system, a means for viewing changing data, and a means for viewing forms. The Court then found error in the District Court’s denial of leave to amend the complaint since the proposed complaint added specific allegations that are directed to improvements over the prior art that improve the functioning of computers. Moreover, the Court followed its reasoning in *Berkheimer*, concluding that there was insufficient basis for the District Court to decide under *Alice* step 2 that the data file limitation was well understood and routine. The dismissal was vacated and remanded, although with Judge Reyna’s strongly worded dissent, it would come as no surprise that *Berkheimer* and *Aatrix* would be reviewed *en banc*. For practitioners, *Aatrix* also provides, at least for the time being, a basis (like *Berkheimer*) for challenging unsupported conclusions by the Examiner that the claims recite conventional use of hardware.

FOLLOW THESE THREE STEPS

Step 1: Develop a Set of Proposed Claims

Using guidance from the 12 cases discussed above, treat your 101 rejection as a stand-alone issue. A successful response to a PTO rejection may require a case-law-justified approach aimed at giving the Examiner a legal basis on which to justify withdrawal.¹² Accordingly, the first step is to compare your specification to some of the drafting factors set out below and, if possible, amend your claims to better match or amplify those factors. It may be helpful in working with some Examiners to use the amended claims as part of a draft proposal submitted in advance of the interview.

Step 2: Interview the Patent Examiner.

Most PTO rejections apply the two-part *Alice* test in rather formalistic, conclusive, and somewhat vague terms. Since 101 rejections are case-law based, unlike 102 or 103 rejections, the practitioner may be left struggling with case law statements by the Examiner about what constitutes “an abstract idea” with few guideposts. Examiners are trained under the guidelines to issue clear rejections using case law support and examples. What they are not trained to do is assist the practitioner in developing claim language that would, in their estimation, overcome an abstract idea rejection. To some extent, this is not surprising, since many Examiners would conclude this is not part of their job. Fair enough. But as practitioners, there is also no reason why we cannot ask for their help, or at least cooperation, in developing claims that would pass Section 101 muster.

Interviews can help clear away some of the *Alice* “fog.” For example, during interviews some Examiners have candidly indicated their utter confusion with the *Alice* test and the PTO’s voluminous guidelines. In some instances, they have admitted that they are looking for “any” good rationale to justify the claims under 101 case law. In other instances, Examiners have clear ideas about acceptable claim language under 101, but will not necessarily suggest alternative language. More informed Examiners may have favorite cases or approaches to language that provide clearer lines for consideration. For example, an Examiner may be particularly interested in seeing a control signal to an external device (following the tire mold control in *Diamond v. Diehr*), or some in-depth claim language exposing the processing algorithms or rules (following the technical rules that convinced the Federal Circuit that the GUI in *McRO v. Bandai* involved technical software), or a good discussion regarding how and why the claims solve a technical problem that has hitherto not been addressed by the prior art (e.g., where the captive website solved a technical problem on the Internet in *DDR Holdings v. Hotels.com*). Finally, some of the more knowledgeable Examiners are looking for guidance from particular Federal Circuit decisions they find to be illustrative as a basis for supporting their rejection (or possible allowance). In any event, only a conversation with the Examiner will efficiently uncover his or her thinking (or bias) on the subject and at a minimum help clarify how to respond to a rejection.

12. A useful tool is the Index of Eligibility Examples currently available at www.uspto.gov/sites/default/files/documents/ieg-example-index.pdf.

Step 3: Tie Amended Claims and Your Remarks to Relevant 101 Cases

Regardless of the Examiner's attitude, it can be useful to draft your application or amend your claims to follow a clear case-law based foundation. This means following not only the *Alice* test in application, but also those cases where claims were determined to pass muster by courts whether applying the *Alice* test or *Diamond v. Diehr*. Moreover, it may be critical to shape your arguments based on how the invention has improved over the prior art from a technological standpoint. This is to avoid *Alice* step 2: the argument that all the patent does is computerize the prior art using standard components merely as "tools" to carry out the abstract idea itself. To the extent you want the claims to be tied to algorithms, rules, or structure in the specification, include means plus function language ("MPF") which is interpreted more narrowly. The MPF format was found to be helpful in *Enfish* since it provided a shortcut to ample technical support language in the patent specification. And if the Examiner rejects the claims based on mere conclusions, then by all means use the *Berkheimer* case, which to date has not made it to the ever-growing PTO guidelines. Finally, you may not be able to tie the claims to the algorithms and rules if they are not disclosed in the original specification, so, when possible, include specific technical features during patent drafting—details that might have been left out in a pre-*Alice* world. You may even want to consider adding source code in an Appendix (a key consideration in the *Visual Memory* case), which could provide flexibility later on in the event you want to avoid a new matter rejection.

CONCLUSION

Post-*Alice*, the PTO is aggressively rejecting software claims under the *Alice* two-part test, the parameters of which many Examiners are still trying to understand. By following the steps discussed here, you have the best shot at overcoming a non-statutory subject matter rejection:

1. Interview the Examiner to see if he or she has specific claim terms in mind.
2. Read the specification to find:
 - a. Technological details of the claimed invention;
 - b. Descriptions of the control of external hardware;
 - c. Specific processing rules or logic that improve hardware performance;
 - d. Descriptions of improved display interfaces; and
 - e. Clear differences from non-computer/non-Internet practices.
3. Revise claims with specificity, including using means or step plus function language where technological details are important, and avoiding the recitation of mere processing results.
4. Tie remarks into specific Federal Circuit cases.
5. Dispute conclusory statements asking for evidence by the Examiner by citing *Berkheimer* or by providing evidence through an expert affidavit.
6. If claims are allowed without remarks, add legal justification in subsequent filings to support claims on appeal or in litigation.

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For over 30 years, Jon Grossman has practiced in the areas of patent law, licensing work, and copyright with an emphasis on computer software issues, including:

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