

Shearman & Sterling's Digest on Federal Circuit Jurisprudence Concerning the 'Abstract Idea' Exception to 35 U.S.C. § 101



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Introduction

At first glance, the development of Section 101 jurisprudence appears chaotic. The Supreme Court captured several different kinds of problems in *Alice* and its earlier patentable-subject-matter opinions, and the Federal Circuit's post-*Alice* approach has multiplied the problem by tangling several different legal threads in a way that has not so far resulted in clear, consistent statements of law. In this article, we attempt to describe and characterize the primary threads of the current view of Section 101, as illustrated in appellate opinions to date.

One problem is easily recognized and should be quickly dismissed: confusion between prior-art invalidity and ineligible subject matter. While it is possible to use a prior-art analysis to inform a Section 101 determination—and both the Federal Circuit and the Supreme Court have done so, as described below—it isn't necessary, and tends to confuse the issues, as other Federal Circuit opinions have noted. If what is described in the claims is not novel, or is only an obvious variation on the prior art, then it should be unpatentable for those reasons, without the need to consider Section 101. The converse is true as well. Of course, procedural and evidentiary issues can in some cases make segregating the two problems sound easier than it is.

A core issue is functional claim language. One commonality between many claims that were found ineligible, especially method claims and software-related claims, is that they mainly recite the function to be performed, not how to do it. Claims held to be directed to abstract ideas often contain limitations like, "facilitate a user selection of

content,”¹ “generating a rule for monitoring audit log data representing at least one of transactions or activities that are executed in the computer environment . . . the rule comprising at least one criterion related to accesses . . .,”² or “deriving a composite indicator of reliability that is an indicator of power grid vulnerability and is derived from a combination of one or more real time measurements or computations of measurements.”³ But because the claims themselves do not describe how to “facilitate” user selection, “generate” the rule or “derive” the indicator, they cover a nearly infinite set of ways of performing those functions. Such claims usually can be saved from ineligibility, if at all, only if the “how” is imported into the claims by claim construction, and sometimes only then if the “how” involves an unconventional approach.

Another core issue is claim language describing mental steps. The mental-step prohibition is a product exclusively of judicial decisions. Unlike claims reciting purely functional language (which can be seen as literally outside of Section 101 because, without a “how,” they are describing neither processes nor machines), claims determined to be ineligible because they are directed to mental steps—which are a kind of algorithm, also a forbidden class of subject matter—fall within what is literally an exception to the statute’s broad “process” language. They are ineligible despite the fact that they literally describe a “process.”

Sometimes these threads are not apparent in the text of judicial opinions, but when one goes beyond the court’s characterization or reasoning and takes a careful look at the claim language in question, usually one or more of these threads do appear. As such, this article looks back at some of the Federal Circuit’s most noteworthy post-*Alice* decisions in a search for guiding principles that separate eligible from ineligible subject matter.⁴

¹ *Affinity Labs of Texas, LLC v. Amazon.com Inc.*, 838 F.3d 1266 (Fed. Cir. 2016) (“*Affinity Labs I*”).

² *FairWarning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089 (Fed. Cir. 2016).

³ *Electric Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350 (Fed. Cir. 2016).

⁴ Some commentators—including former PTO Director David Kappos—have called for the abolition of Section 101 altogether. See, e.g., <https://www.law360.com/articles/783604/kappos-calls-for-abolition-of-section-101-of-patent-act>. Judge Newman has all but urged as much as well.

Section 101 and *Alice*, Revisited

Section 101 broadly states:

Whoever invents or discovers any new and useful process, machine, manufacture, composition of matter or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

Nonetheless, the Supreme Court has “long held that this provision contains an important implicit exception. ‘Laws of nature, natural phenomena, and abstract ideas are not patentable.’”⁵ The primary concern driving this exclusionary principle is pre-emption; patent law should not “inhibit further discovery by improperly tying up the future use of” these building blocks of human ingenuity.”⁶

In *Alice*, the claims-at-issue concerned a computerized scheme for mitigating “settlement risk”—i.e., the risk that only one party to an agreed-upon financial exchange will satisfy its obligation. The agreed-upon representative method claim recited:

A method of exchanging obligations as between parties, each party holding a credit record and a debit record with an exchange institution, the credit records and debit records for exchange of predetermined obligations, the method comprising the steps of:

- (a) creating a shadow credit record and a shadow debit record for each stakeholder party to be held independently by a supervisory institution from the exchange institutions;
- (b) obtaining from each exchange institution a start-of-day balance for each shadow credit record and shadow debit record;
- (c) for every transaction resulting in an exchange obligation, the supervisory institution adjusting each respective party’s shadow credit record or shadow debit record, allowing only these transactions that do not result in the value of the shadow debit record being less than the value of the shadow credit record at any time, each said adjustment taking place in chronological order; and
- (d) at the end-of-day, the supervisory institution instructing on[e] of the exchange institutions to exchange credits or debits to the credit record and debit record of

⁵ *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 70 (2012) (quoting *Diamond v. Diehr*, 450 U.S. 175, 185 (1981)).

⁶ *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014) (quoting *Mayo*, 566 U.S. at 85).

the respective parties in accordance with the adjustments of the said permitted transactions, the credits and debits being irrevocable, time invariant obligations placed on the exchange institutions.

The Supreme Court held that the claims-at-issue are patent ineligible. In doing so, the Court applied a two-step test:

(1) determine whether the claims at issue are directed to one of [the] patent ineligible concepts; and

(2) if so, then do the claims, considering the elements individually and as an ordered combination contain anything else that would transform them into a patent-eligible application?⁷

At step 1 of this test, the Court held that the claims-at-issue in *Alice* are drawn to the abstract idea of intermediated settlement, which the Court determined to be “a fundamental economic practice long prevalent in our system of commerce.”⁸ Use of a computer as a third-party intermediary does not change the analysis because “[t]he use of a third-party intermediary (or ‘clearing house’) is also a building block of the modern economy.”⁹

Nonetheless, the Court cautioned that it must “tread carefully” in construing the judicially-created exceptions to Section 101 “lest it swallow all of patent law.”¹⁰ As such, the Court framed the application of the Section 101 exception as a test in distinguishing “between patents that claim the building blocks of human ingenuity and those that integrate the building blocks into something more, thereby transforming them into a patent-eligible invention.”¹¹

As for the second step—which the Court described as a search for an “inventive concept”—the Court held that the claimed use of a computer does not transform an abstract idea into a patent-eligible invention. The Court contrasted its decision in *Diamond v. Diehr*, 450 U.S. 175 (1981), where the claims themselves recite an abstract idea—a “‘well-known’ mathematical equation”—but apply that abstract idea in a process designed to solve a technological problem (*i.e.*, recording constant

⁷ *Alice*, 134 S. Ct. at 2356.

⁸ *Id.* at 2351.

⁹ *Id.* at 2356.

¹⁰ *Id.* at 2354.

¹¹ *Id.*

temperature measurements inside the rubber mold in order to calculate remaining cure time). According to the *Alice* court, “the claims in *Diehr* were patent eligible because they improved an existing technological process, not because they were implemented on a computer.”¹²

The ‘Decisional Mechanism’ and the Blurred Line Between *Alice* Steps

As outlined above, the *Alice* Court articulated a now familiar two-step test for determining patent-eligibility. However, the Federal Circuit has, on occasion, blended the *Alice* two-step test into a single step. For example, in *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*,¹³ the court simply compared the “device profile” claims-at-issue to claims in a prior case—*In re Nuijten*,¹⁴—and concluded that they are “even broader” and therefore “do not encompass eligible subject matter.”¹⁵ In *Elec. Power Grp., LLC v. Alstom S.A.*, the court stated that, “the two stages involve overlapping scrutiny of the content of the claims . . . [and] there can be close questions about when the inquiry should proceed from the first stage to the second.”¹⁶ While many decisions still adhere to the two-step *Alice* framework—including more recently, the court’s reversals on Section 101 grounds in *Smartflash LLC v. Apple Inc.*,¹⁷ and in *Prism Techs. LLC v. T-Mobile USA, Inc.*¹⁸—there appears to be a trend towards a blended one-step analysis that focuses on a comparison of the claims-at-issue with those at issue in prior Section 101 cases.

¹² *Id.* at 2358. As discussed below, the Federal Circuit has frequently focused on whether the claims “improve[] an existing technological process” as it grapples with Section 101 eligibility.

¹³ *Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1350 (Fed. Cir. 2014).

¹⁴ *In re Nuijten*, 500 F.3d 1346, 1351 (Fed. Cir. 2007).

¹⁵ *Digitech*, 758 F.3d at 1350.

¹⁶ *Elec. Power*, 830 F.3d at 1353.

¹⁷ *Smartflash LLC v. Apple Inc.*, 680 Fed. Appx. 977 (Fed. Cir. Mar. 1, 2017).

¹⁸ *Prism Techs. LLC v. T-Mobile USA, Inc.*, No. 2016-2031, -2049, 2017 WL 2705338 (Fed. Cir. June 23, 2017).

In *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*—one of the handful of Federal Circuit cases that reversed a patent ineligibility ruling—the court explicitly endorsed a “decisional mechanism” involving “an examination of eligible and ineligible claims of a similar nature from past cases [as compared to the claims-at-issue].”¹⁹

The panel majority’s focus on this decisional mechanism arguably derives from the difficulty in delineating clear rules about what constitutes an “abstract idea” or an “inventive concept”; in the Federal Circuit’s own words, “at present, there is no such single, succinct, usable definition or test . . . to the extent the efforts so far have been unsuccessful it is because they often end up using alternative but equally abstract terms or are overly narrow.”²⁰

Nor can claims be clearly segregated based on whether they are directed to hardware or software. In *Enfish, LLC v. Microsoft Corp.*, the Federal Circuit held that certain software claims are not abstract since they are “directed to a specific improvement to the way computers operate.”²¹ The court stated:

We do not read *Alice* to broadly hold that all improvements in computer-related technology are inherently abstract and, therefore, must be considered at step two. Indeed, some improvements in computer-related technology when appropriately claimed are undoubtedly not abstract, such as a chip architecture, an LED display, and the like. Nor do we think that claims directed to software, as opposed to hardware, are inherently abstract and therefore only properly analyzed at the second step of the *Alice* analysis.²²

In *Amdocs*, the Federal Circuit majority reviewed “claims of a similar nature” from past cases, before ultimately deciding that the challenged claims are patent eligible. However, the majority never explained what makes claims of different patents “similar” or “dissimilar,” and ultimately rested its decision on a narrow interpretation of the claim language (which requires a purportedly novel computer architecture)

¹⁹ *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 841 F.3d 1288, 1294–96 (Fed. Cir. 2016); see also *Alice*, 134 S. Ct. at 2357; *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1334 (Fed. Cir. 2016) (“Both this court and the Supreme Court have found it sufficient to compare claims at issue to those claims already found to be directed to an abstract idea in previous cases”).

²⁰ *Amdocs*, 841 F.3d at 1294.

²¹ *Enfish*, 822 F.3d at 1336.

²² *Id.* at 1335.

rather than on any specifically-articulated comparison of the nature of the claims to those at issue in prior cases.²³

What is an ‘Abstract Idea’ Anyway?

In theory, the abstract idea exception prevents patenting a result where “it matters not by what process or machinery the result is accomplished.”²⁴ However, in practice, the Supreme Court has declined to “delimit the precise contours of the ‘abstract ideas’ category,”²⁵ making it difficult for lower courts to apply the exception in practice.²⁶

Perhaps the most challenging aspect of the “abstract idea” analysis is simply assessing and characterizing the scope of the claims themselves; “[a]t some level, ‘all inventions . . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.’”²⁷ To this end, the Federal Circuit has “cautioned that courts ‘must be careful to avoid oversimplifying the claims’ by looking at them generally and failing to account for the specific requirements of the claims.”²⁸ With this understanding of the inherent challenges, certain categories of “abstract ideas” have emerged from Federal Circuit jurisprudence. Claims held to be directed to these categories of abstract ideas have been found to be ineligible, absent recitation of an “inventive concept.”

²³ *Amdocs*, 841 F.3d at 1300–02.

²⁴ *McRO, Inc. v. Bandai Namco Games Am. Inc.*, 837 F.3d 1299, 1312 (Fed. Cir. 2016) (citing *O’Reilly v. Morse*, 56 U.S. 62, 113 (1854)).

²⁵ *Alice*, 134 S. Ct. at 2357.

²⁶ See, e.g., *MySpace, Inc. v. GraphOn Corp.*, 672 F.3d 1250, 1259 (Fed. Cir. 2012) (The “effort to descriptively cabin § 101 jurisprudence is reminiscent of the oenologists trying to describe a new wine. They have an abundance of adjectives—earthy, fruity, grassy, nutty, tart, woody, to name just a few—but picking and choosing in a given circumstance which ones apply and in what combination depends less on the assumed content of the words than on the taste of the tongue pronouncing them.”); see also *Enfish*, 822 F.3d at 1334 (“The Supreme Court has not established a definitive rule to determine what constitutes an ‘abstract idea’ sufficient to satisfy the first step of the *Mayo/Alice* inquiry.”).

²⁷ *Alice*, 134 S. Ct. at 2354 (citing *Mayo*, 566 U.S. at 71).

²⁸ *McRO*, 837 F.3d at 1313 (citing *In re TLI Commc’ns LLC Patent Litig.*, 823 F.3d 607, 611 (Fed. Cir. 2016)).

Mental Processes

In *CyberSource Corp. v. Retail Decisions, Inc.*, the Federal Circuit held that mental processes are “a subcategory of unpatentable abstract ideas.”²⁹ The court explained:

Methods which can be performed entirely in the human mind are unpatentable not because there is anything wrong with claiming mental method steps as part of a process containing non-mental steps, but rather because computational methods which can be performed entirely in the human mind are the types of methods that embody the “basic tools of scientific and technological work” that are free to all men and reserved exclusively to none.³⁰

Post-*Alice*, the Federal Circuit continues to “treat[] analyzing information by steps people go through in their minds, or by mathematical equations, without more, as essentially mental processes within the abstract-idea category.”³¹

In *Synopsys, Inc. v. Mentor Graphics Corp.*, the asserted patents relate to a logic circuit design process. The patents describe hardware description languages (HDLs), that is, computer code languages that allow circuit designers to specify only the function of a logic circuit, without having to specify the actual individual components and interconnections of the logic circuit. More particularly, the patents (and claims) focus on control flow graphs, and “assignment conditions” that provide a scheme to translate HDL-based functional descriptions of logic circuits into hardware component descriptions of those same circuits. *Synopsys* disputed that the claims recite abstract “mental processes” but the Federal Circuit disagreed, holding that the “basic thrust” of the claims is the mental process of “translating a functional description of a logical circuit into a hardware component description of the logical circuit.”³²

Data Collection, Analysis, and Display

Numerous Federal Circuit decisions have held claims directed to data collection, analysis and display to be patent ineligible. For example, in *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat’l Ass’n*, the court affirmed the district court’s dismissal under Rule 12(b)(6) of plaintiff CET’s claims relating to extracting

²⁹ *CyberSource Corp. v. Retail Decisions, Inc.*, 654 F.3d 1366, 1371 (Fed. Cir. 2011).

³⁰ *Id.* at 1373 (emphasis in original and quoting *Gottschalk v. Benson*, 409 U.S. 63, 67 (1972)).

³¹ *Elec. Power Grp.*, 830 F.3d at 1354; see also *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1146–47 (Fed. Cir. 2016) (same).

³² *Synopsys*, 839 F.3d at 1150.

and recognizing information from hard copy documents using a digitized unit such as a scanner.³³

Claim 1 of one of the asserted patents recites:

A method of processing information from a diversity of types of hard copy documents, said method comprising the steps of:

- (a) receiving output representing a diversity of types of hard copy documents from an automated digitizing unit and storing information from said diversity of types of hard copy documents into a memory, said information not fixed from one document to the next, said receiving step not preceded by scanning, via said automated digitizing unit, of a separate document containing format requirements;
- (b) recognizing portions of said hard copy documents corresponding to a first data field; and
- (c) storing information from said portions of said hard copy documents corresponding to said first data field into memory locations for said first data field.

The district court granted a motion to dismiss under Fed. R. Civ. P. 12(b)(6), on the ground that each claim of the asserted patents is invalid as patent-ineligible.³⁴ The Federal Circuit affirmed, reasoning that the claims are drawn to the abstract idea of (1) collecting data, (2) recognizing certain data within the collected data set and (3) storing those recognized data in a memory.³⁵

CET argued that its claims are different than those in *Alice* because they require not just a computer but also a scanner, and that the human mind is unable to process and recognize the stream of bits output by a scanner. The Federal Circuit disagreed. The claims failed *Alice* step one because they are drawn to the basic concept of data recognition and storage and merely use a scanner as one tool to achieve that abstract idea.³⁶

³³ *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343, 1345 (Fed. Cir. 2014).

³⁴ *Id.* at 1346.

³⁵ *Id.* at 1347.

³⁶ *Id.*

The court also held that the claims failed at the second *Alice* step, since CET conceded that the use of scanners to extract data was well-known at the time of filing, as was the ability of computers to translate the shapes on a physical page into typeface characters.

Similarly, in *FairWarning IP, LLC v. Iatric Sy., Inc.*, the Federal Circuit affirmed a district court’s dismissal of a litigation asserting patents that disclose systems and methods for detecting fraud committed by an otherwise-authorized user of a patient’s protected health information (“PHI”).³⁷ The representative method claim requires generation of an audit rule specifying criterion related to unusual activity, and providing notifications when the rule is met. The court held that the claim is directed to the abstract idea of “collecting and analyzing information to detect misuse and notifying a user when misuse is detected.”³⁸ The court distinguished *McRO*, which also involved claims reciting “rules,” because the *McRO* claims, when considered as a whole, are directed to a “specific asserted improvement in computer animation, i.e., the automatic use of rules of a particular type.”³⁹ The *McRO* claims involve an improvement in allowing accurate and realistic lip synchronization and facial expressions that previously could only be produced by human animators. The *FairWarning* court explained that, unlike the claims-at-issue, the “claimed rules in *McRO* transformed a traditionally subjective process performed by human artists into a mathematically automated process executed on computers.”⁴⁰

In *Elec. Power Grp., LLC v. Alstom S.A.*,⁴¹ the claims-at-issue relate to methods for collecting electric power grid data, as well as other power system data, analyzing in real time the data relative to various dynamic stability metrics, displaying the results of the analysis, and deriving indicators of grid reliability and vulnerability based upon the measured data and dynamic stability metrics. The Federal Circuit held the claims to be ineligible, as directed to the concept of “collecting information, analyzing it, and displaying certain results.”⁴² The Federal Circuit endorsed the district court’s description of the claims as purporting to “monopolize every potential solution” to the

³⁷ *FairWarning*, 839 F.3d at 1091.

³⁸ *Id.* at 1094.

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ *Elec. Power*, 830 F.3d at 1350.

⁴² *Id.* at 1353.

electric grid monitoring problem, rather than a “specific way of enabling a computer to monitor data from multiple sources across an electric power grid.”⁴³

In *Intellectual Ventures I LLC v. Capital One Financial Corp.*, the patent-at-issue concerns a system and method for editing XML documents, which are documents using a specialized mark-up computer language.⁴⁴ More specifically, the patent describes a system for ensuring the compatibility of a shared XML document by creating a second document—a “dynamic document”—which is based upon data extracted from the original XML document. According to the patent, a user can then make changes to the data displayed in the dynamic document and the changes will be dynamically propagated back into the original XML document. Representative claim 21 recites:

An apparatus for manipulating XML documents, comprising:

- a processor;
- a component that organizes data components of one or more XML documents into data objects;
- a component that identifies a plurality of primary record types for the XML documents;
- a component that maps the data components of each data object to one of the plurality of primary record types;
- a component that organizes the instances of the plurality of primary record types into a hierarchy to form a management record type;
- a component that defines a dynamic document for display of an instance of a management record type through a user interface; and
- a component that detects modification of the data in the dynamic document via the user interface, and in response thereto modifies a data component in an XML document.⁴⁵

The Federal Circuit determined that, “[s]tripped of excess verbiage, the claim creates the dynamic document based on ‘management record types’ (‘MRTs’) and ‘primary record types’ (‘PRTs’),” which are each inventor-coined terms used to describe the

⁴³ *Id.* at 1356.

⁴⁴ *Intellectual Ventures I LLC v. Capital One Financial Corp.*, 850 F.3d 1332 (Fed. Cir. 2017) (“*IV I*”).

⁴⁵ *Id.* at 1339.

organizational structure of the data at issue.⁴⁶ According to the court, this is effectively an abstract idea, namely, collecting, displaying and manipulating data. The court compared claim 21 to the claims in *Content Extraction and Elec. Power*. The court rejected plaintiff IV’s argument that the specific data structures—the PRTs and MRTs—provide a concrete solution to XML incompatibility through a component that detects modifications to the dynamic document and, in response thereto, propagates these changes back to the underlying XML document. “Although these data structures add a degree of particularity to the claims, the underlying concept embodied by the limitations merely encompasses the abstract idea itself of organizing, displaying, and manipulating data of particular documents.”⁴⁷

Organizing Human Activity

Three patents were at issue in *Intellectual Ventures I LLC v. Symantec Corp.*⁴⁸ One of those patents—the ’142 patent—recites a “post office” system for filtering and distributing emails according to a database of business rules. In finding this idea abstract, the Federal Circuit relied on the ’142 patent’s own specification and IV’s representation to the district court during a technology tutorial that, “[c]onceptually, this post office is not much different than a United States Postal Service office that processes letters and packages, except that the process is all computer-implemented . . .”⁴⁹ Thus, “the ’142 patent itself demonstrates that the claimed systems and methods of screening messages are abstract ideas . . . and ‘methods of organizing human activity.’”⁵⁰

Encoding and Decoding

In *RecogniCorp, LLC v. Nintendo Co., Ltd.*,⁵¹ the Federal Circuit held that claims directed to encoding and decoding encompass an abstract idea. The claims-at-issue relate to manipulation of facial feature elements from a first image into a second image

⁴⁶ *Id.*

⁴⁷ *IV I*, 850 F.3d at 1339; see also *EasyWeb Innovations, LLC v. Twitter, Inc.*, No. 2016-2066, 2017 WL 1969492 (Fed. Cir. May 12, 2017) (holding claims to be abstract because they use generic computer technology to perform data collection, analysis and publication and do not recite an improvement to a particular computer technology).

⁴⁸ *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307 (Fed. Cir. 2016) (“*IV II*”).

⁴⁹ *Id.* at 1318.

⁵⁰ *Id.* (citations omitted).

⁵¹ *RecogniCorp, LLC v. Nintendo Co., Ltd.*, 855 F.3d 1322 (Fed. Cir. 2017).

using assigned codes and mathematical formulas. The Federal Circuit held that this is no different from patent-ineligible ideas like “Morse code, ordering food at a fast food restaurant via a numbering system, and Paul Revere’s ‘one if by land, two if by sea’” signaling system.⁵²

Specific Case Studies on Categories of Eligible Claims

The DDR-Type Cases: Claims That Address Problems That Did Not Exist Pre-Internet or Pre-Computer Age

The first post-*Alice* Federal Circuit decision to hold claims patent eligible upon a Section 101 challenge was *DDR Holdings, LLC v. Hotels.com, L.P.*⁵³ The plaintiff and patent holder, DDR Holdings, won a jury verdict of infringement and validity, and was awarded damages. The Federal Circuit affirmed the district court’s denial of defendant National Leisure Group’s motion for judgment as a matter of law that the claims are ineligible under Section 101.⁵⁴ The patents-at-issue are directed to systems and methods of generating a composite web page that combines certain visual elements of a “host” website with content of a third-party merchant.

Representative claim 19 of the asserted ’399 patent recites:

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

⁵² *Id.* at 1327.

⁵³ *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014).

⁵⁴ The Federal Circuit found the asserted claims of one patent to be anticipated and so only focused on eligibility under Section 101 with respect to the remaining asserted patent.

(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.⁵⁵

The specification explains that prior art systems allowed third-party merchants to “lure the host website visitor traffic away” from the host website because visitors would be taken to the third-party merchant’s website when they clicked on the merchant’s advertisement on the host site. The patent discloses a system that provides a solution to this problem (for the host) by creating a new web page that permits a website visitor, in a sense, to be in two places at the same time. On activation of a hyperlink on a host website—such as an advertisement for a third-party merchant—instead of taking the visitor to the merchant’s website, the system generates and directs the visitor to a composite web page that displays product information from the third-party merchant, but retains the host website’s “look and feel.” Thus, the host website can display a third-party merchant’s products, but retain its visitor traffic by displaying that product information from within a generated web page that “gives the viewer of the page the impression that she is viewing pages served by the host” website.⁵⁶

⁵⁵ *Id.* at 1249–50.

⁵⁶ *See id.* at 1248–49.

The Federal Circuit held the claims patent eligible. The court distinguished prior cases, stating that:

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.

The Federal Circuit noted that the claims “address the problem of retaining website visitors that, if adhering to the routine, conventional functioning of Internet hyperlink protocol, would be instantly transported away from a host’s website after ‘clicking’ on an advertisement and activating a hyperlink.”⁵⁷

The court contrasted the claimed invention from pre-Internet analogs, such as a “warehouse store that contains a kiosk for selling a third-party partner’s cruise vacation packages” on the grounds that such prior concepts “did not have to account for the ephemeral nature of an Internet ‘location’ or the near-instantaneous transport between these locations made possible by standard Internet communication protocols, which introduces a problem that does not arise in the ‘brick and mortar’ context.”⁵⁸ In particular, in the brick-and-mortar prior art example, there is no possibility that “the customer will be suddenly and completely transported outside the warehouse store and relocated to a separate physical venue.”⁵⁹

The court also distinguished *Ultramercial, Inc. v. Hulu, LLC*—in which the claims-at-issue are directed to using advertising as a currency on the Internet—on the grounds that DDR’s claims do not broadly and generically claim “use of the Internet” to perform an abstract business practice.⁶⁰

Judge Mayer in *DDR* dissented on the Section 101 issue, opining that “the patents fail to meet the demands of section 101 because they describe a goal—confusing consumers by making two web pages look alike—but disclose no new technology, or ‘inventive concept.’”⁶¹ “[M]uch of what they disclose is so rudimentary that it borders

⁵⁷ *Id.* at 1257.

⁵⁸ *Id.* at 1258.

⁵⁹ *Id.*

⁶⁰ *Id.* (citing *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715–16 (Fed. Cir. 2014)).

⁶¹ *DDR*, 773 F.3d at 1264.

on the comical.”⁶² Judge Mayer also noted that the potential scope of the patents is “staggering, arguably covering vast swaths of Internet commerce,” as evidenced by the numerous lawsuits DDR had already brought.

To date, the Federal Circuit has distinguished nearly all subsequent attempts by patentees to follow the *DDR* model (i.e., attempts to avoid a finding of patent ineligibility by asserting that the claims address a problem unique to the Internet).⁶³

For example, in *FairWarning*, discussed above, the claims address rules for identifying fraud and misuse by otherwise authorized users with respect to private patient health information. The patentee analogized its claims to the claims in *DDR*, arguing that these claims solve technical problems unique to the computer environment. The Federal Circuit disagreed, reasoning that—unlike in *DDR*—the claims simply allow analysis of information from multiple sources. “The mere combination of data sources . . . does not make the claims patent eligible.”

The Federal Circuit also distinguished *DDR* in its opinion in *Intellectual Ventures I LLC v. Symantec Corp.*, discussed above. Representative claim 9 of the ’050 patent in that case recites:

A method for identifying characteristics of data files, comprising:

receiving, on a processing system, file content identifiers for data files from a plurality of file content identifier generator agents, each agent provided on a source system and creating file content IDs using a mathematical algorithm, via a network;

determining, on the processing system, whether each received content identifier matches a characteristic of other identifiers; and

outputting, to at least one of the source systems, responsive to a request from said source system, an indication of the characteristic of the data file based on said step of determining.⁶⁴

IV asserted that the invention is used for filtering emails and that it addresses the Internet-specific problems of spam email and the use of email to deliver computer viruses. The Federal Circuit held that this claim is directed to the abstract idea of

⁶² *Id.*

⁶³ In *Amdocs*, discussed above and below, the Court held that the claims are not patent-ineligible, noting (without much explanation) that they were similar to those in *DDR Holdings*. 841 F.3d at 1300.

⁶⁴ *IV II*, 838 F.3d at 1314.

characterizing email, which, but for use of a generic computer, is fundamentally no different from the long-prevalent practice of people receiving paper mail and discarding certain pieces, without opening them, from certain sources (and for that reason is unlike the claims in *DDR*).

Use of Algorithms and Rules: Differentiating the *Diamond v. Diehr*-Type of Eligible Claims From Ineligible Claims

The Supreme Court has long distinguished between claims directed to mathematical formulas and algorithms, which are patent ineligible, and those that apply the algorithm to solve a technological problem, which are patent eligible. The most notable such example is *Diamond v. Diehr*.⁶⁵ In that case, the Supreme Court found patent eligible claims directed to a method of constantly recording temperature measurements inside a rubber mold and using those measurements in combination with “Arrhenius’s equation” in order to calculate remaining cure time. “Arrhenius’s equation is not patentable in isolation, but when a process for curing rubber is devised which incorporates it in a more efficient solution of the equation, that process is at the very least not barred at the threshold by 101.”⁶⁶ As noted above, the *Alice* court later characterized the *Diehr* claims as “patent eligible because they improved an existing technological process, not because they were implemented on a computer.”

The Federal Circuit has offered further guidance on this distinction. In *Thales Visionix Inc. v. United States*, the patent-at-issue discloses an inertial tracking system, using an inertial sensor such as an accelerometer or a gyroscope.⁶⁷ Per the patent, in prior art inertial tracking systems, inertial sensors tracked the motion of an object relative to Earth. However, error correction sensors—additional sensors in an internal tracking system such as optical magnetic sensors, which periodically correct errors in measurements of acceleration or angular velocity—would track motion relative to the moving platform. Fusion of this data produced inconsistent position information when the moving platform accelerated or turned.⁶⁸

⁶⁵ *Diamond v. Diehr*, 450 U.S. 175 (1981).

⁶⁶ *Id.* at 188.

⁶⁷ *Thales Visionix Inc. v. United States*, 850 F.3d 1343, 1345 (Fed. Cir. 2017).

⁶⁸ *Id.*

The patent discloses inertial sensors that measure the gravitational field in the platform frame. Inertial sensors in the object of interest (*e.g.*, helmet) then calculate the helmet's position relative to the frame of the moving platform.⁶⁹

Independent claim 1 recites:

A system for tracking the motion of an object relative to a moving reference frame, comprising:

a first inertial sensor mounted on the moving reference frame;

a second inertial sensor mounted on the moving reference frame; and

An element adapted to receive signals from said first and second inertial sensors and configured to determine an orientation of the object relative to the moving reference frame based on the signals received from the first and second inertial sensors.⁷⁰

The patent owner (TVI) sued the government and asserted that the helmet mounted display system in the F-35 Joint Strike Fighter infringed claim 1 (among others). The Court of Federal Claims granted the defendants' motion for judgment on the pleadings and held all claims patent-ineligible under Section 101.⁷¹

The Federal Circuit reversed, ruling that, for purposes of patent-eligibility, the claims are indistinguishable from those in *Diamond v. Diehr*, and therefore are not directed to an abstract idea (at *Alice* Step 1). According to the court, like the claims in *Diamond v. Diehr*, which recite use of a mathematical equation to calculate the optimal cure time for rubber, the claims in *Thales Visionix* use the placement of inertial sensors and the laws of physics to reduce errors in an inertial system that tracks an object on a moving platform. In other words, the claimed systems apply principles of mathematics and physics to achieve an improved technological result—mitigation of errors in relative position determinations.

The Federal Circuit reached a similar conclusion in *McRO*.⁷² The asserted patents in *McRO* relate to automating part of a preexisting 3-D animation method. According to the patent background, the admitted prior art method used multiple 3-D models of a character's face to depict various facial expressions made during speech. A "neutral

⁶⁹ *Id.*

⁷⁰ *Id.* at 1345–46.

⁷¹ *Id.* at 1346.

⁷² *McRO*, 837 F.3d at 1302–03.

model” is the 3-D representation of the resting, neutral facial expression, while the “morph targets” each represent that face as it makes a particular phenome (sound). The difference between the neutral model and the morph target is referred to as a “delta set” of vectors representing the change in location of vertices between the two models. In the prior art, animation of character and lip synchronization was generally accomplished by a human animator, who, using subjective judgment and the help of a computer, would manually set the “morph weight,” *i.e.*, the percentage of the vector to apply to key frames. A computer program would then interpolate between the key frames.⁷³

The claimed invention, on the other hand, applies a set of rules to the time-aligned phonetic transcription to determine the morph weight outputs, while “taking into consideration the differences in mouth positions for similar phonemes based on context.”⁷⁴ One example disclosed in the specification is an automated rule providing for insertion of a “transition” starting shortly before the first syllable, which an animator practicing the prior art would have had to subjectively identify and apply. Representative claim 1 provides:

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 as a function of phoneme sequence and time of said phoneme sequence;

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 by evaluating said plurality of sub-sequences against said first set of rules;

generating a final stream of output morph weight sets at a desired frame rate from said intermediate stream of output morph weight sets and said plurality of transition parameters; 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.⁷⁵

⁷³ See *id.* at 1303–05 (describing background of invention).

⁷⁴ *Id.* at 1303–07.

⁷⁵ *Id.* at 1307.

The district court held that the claims are ineligible under Section 101, but the Federal Circuit reversed, noting that “courts ‘must be careful to avoid oversimplifying the claims’ by looking at them generally and failing to account for the specific requirements of the claims.”⁷⁶ The court reasoned that the claims are limited to rules with specific characteristics, such as a narrowly-defined morph weight set stream, and that the risk of preemption is minimal given the limited scope of the claims.⁷⁷ The court noted that the set of rules analyzes morph sets differently than human animators would, by evaluating sub-sequences, and generating and applying transition parameters.⁷⁸ On this basis, the claims are different than those at issue in *Alice*, *Bilski*, and *Flook*,⁷⁹ where the claimed computerized processes and prior art methods were carried out in a similar way.

In contrast, the Federal Circuit reached a different conclusion with respect to similar claims in *FairWarning*, discussed above. The representative claim-at-issue in *FairWarning* relates to a method of using rules to detect improper access to a patient’s health information. The *FairWarning* court distinguished *McRO* on the ground that the *McRO* claims “transformed a traditionally subjective process performed by human artists into a mathematically automated process executed on computers.”⁸⁰ On the other hand, the court reasoned that “*FairWarning*’s claims merely implement an old practice in a new environment.”⁸¹

In the authors’ view, it is difficult to draw a meaningful legal distinction between the claims in *McRO* and those in *FairWarning*; in both cases, the claims relate to the automation of a manual process and likely achieve efficiencies or different results by doing so. There is no type of technical result that can be achieved by the computerized process claimed in the patents-at-issue in *McRO* (at least not one articulated by the Federal Circuit) that is not theoretically possible using only non-computerized prior art methods.

⁷⁶ *Id.* at 1312 (citing *TLI*, 823 F.3d at 611).

⁷⁷ *Id.* at 1313.

⁷⁸ *Id.*

⁷⁹ *Alice*, 134 S. Ct. at 2356; *Bilski v. Kappos*, 561 U.S. 593, 610–11 (2010); *Parker v. Flook*, 437 U.S. 584, 585–86 (1978).

⁸⁰ *FairWarning*, 839 F.3d at 1094.

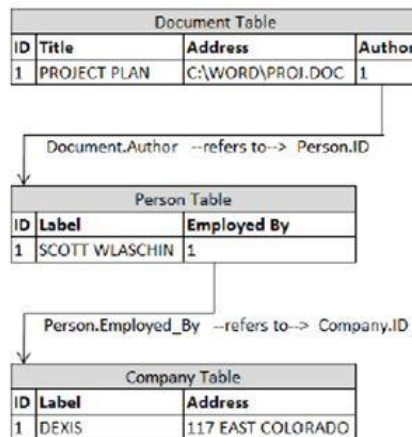
⁸¹ *Id.*

Improvements to the Functionality of a Computer: Enfish and Its Progeny

In *Enfish, LLC v. Microsoft Corp.*, the Federal Circuit found that the challenged software claims are directed to a “specific improvement to the way computers operate” and are patent eligible under Supreme Court precedent.⁸²

Enfish had sued Microsoft in the court below for infringement of several patents relating to a “self-referential” database. The district court had held all claims invalid on summary judgment as ineligible under Section 101—a ruling from which Enfish appealed.⁸³

The asserted patents are directed to a logical model for a computer database, which is a model of data explaining how various elements of information are related to one another.⁸⁴ Contrary to conventional logical models, the patented logical model includes all data entities in a single table with column definitions provided by rows in the same table. The patent describes this as the “self-referential property of the database.” In other words, traditional “relational” models store separate entities (*i.e.*, types of information) in separate tables. For instance, a relational model for a corporate file repository might include the following tables:



In contrast, the patented self-referential model has two features that are not found in the relational model: first, it can store all entity types in a single table, and second, the self-referential model can define the table’s columns by rows in the same table. For

⁸² *Enfish*, 822 F.3d at 1335.

⁸³ *Id.* at 1334–35.

⁸⁴ See *id.* at 1330–34 (discussing patent background).

example, the self-referential model corresponding to the example relational model set out above might look like the following:

SELF-REFERENTIAL TABLE						
ID	Type	Title	Label	Address	Employed By (#4)	Author
#1	DOCUMENT	PROJECT PLAN		C:\WORD\PROJ.DOC		#2
#2	PERSON		SCOTT WLASCHIN		#3	
#3	COMPANY		DEXIS	117 EAST COLORADO		
#4	FIELD		EMPLOYED BY			

The patents teach that multiple benefits flow from this design. First, the patents disclose an indexing technique that allows for faster searching of data than would be possible with the relational model. Second, the patents teach that the self-referential model allows for more effective storage of data other than structured text, such as images. Last, the patents teach that the self-referential model allows more flexibility in configuring the database, for example, by eliminating pre-launch modeling and configuration of the various tables and relationships.

Representative claim 17 of one of the asserted patents recites:

A data storage and retrieval system for a computer memory, comprising:

means for configuring said memory according to a logic table, said logical table including:

a plurality of logical rows, each said logical row including an object identification number (OID) to identify each said logical row, each said logical row corresponding to a record of information;

a plurality of logical columns intersecting said plurality of logical rows to define a plurality of logical cells, each said logical column including an OID to identify each said logical column; and

means for indexing data stored in said table.

The district court construed the “means for configuring” language as a four-step algorithm, effectively requiring the creation of a self-referential table, as outlined above and described in the specification.⁸⁵ The district court found that the claims are directed to the abstract idea of “storing, organizing, and retrieving memory in a logical table” or, more simply, “the concept of organizing information using tabular formats.”⁸⁶

⁸⁵ *Id.* at 1334–35.

⁸⁶ *Id.*

The Federal Circuit reversed the district court’s ruling, holding that the patents are not directed to an abstract idea. The court characterized the first step of the *Alice* inquiry as “whether the focus of the claim is on the specific asserted improvement in computer capabilities . . . or, instead, on a process that qualifies as an ‘abstract idea’ for which computers are invoked merely as a tool.”⁸⁷ With respect to Enfish’s claims, the court held that the claims’ focus is on a “specific improvement to the way computers operate, embodied in the self-referential table.”⁸⁸

The Federal Circuit disagreed with the district court’s characterization of the claims as directed to a “concept of organizing information using tabular formats.”⁸⁹ Rather, the court reasoned that the claims are not simply directed to any form of storing tabular data, but instead are specifically directed to a self-referential table for a computer database, which is designed to improve the way a computer stores and retrieves data in memory.⁹⁰ This, the court reasoned, is an improvement to an existing technology, and not an abstract idea, as evidenced by the specification’s numerous pronouncements about the advantages of self-referential tables over prior art databases.⁹¹

As mentioned above, many patentees have tried and failed to argue that their claims are patent eligible in a manner similar to *Enfish*. But see *Visual Memory LLC v. NVIDIA Corp.*, discussed below.⁹² For example, in *Tranxition, Inc. v. Lenovo (United States) Inc.*, the claim-at-issue is directed to the automatic migration of computer settings from one computer to another, and more specifically to extraction of particular configuration settings and generation of a “transition plan” for performing the migration.⁹³ The Federal Circuit rejected *Tranxition*’s argument that the claim is directed to an improvement in computer functionality, stating that, “there is nothing in the claim to suggest that, once settings have been transitioned, the target computer will be any more efficient.”⁹⁴ The claim merely ‘transitions’ data from one computer to

⁸⁷ *Id.* at 1335.

⁸⁸ *Id.* at 1336.

⁸⁹ *Id.* at 1337.

⁹⁰ The Federal Circuit criticized the district court’s oversimplification of the claims: “describing the claims at such a high level of abstraction and untethered from the language of the claims all but ensures that the exceptions to § 101 swallow the rule.” *Id.*

⁹¹ *Id.* at 1338.

⁹² *Visual Memory LLC v. NVIDIA Corp.*, No. 2016-2254, 2017 WL 3481288 (Fed. Cir. Aug. 15, 2017).

⁹³ *Tranxition, Inc. v. Lenovo (United States) Inc.*, 664 Fed. Appx. 968, 970–71 (Fed. Cir. Nov. 16, 2016).

⁹⁴ *Id.* at 972.

another and thus automate the migration process. Therefore, the claim is directed to the abstract idea of migration, or transitioning, of settings.”⁹⁵

In *RecogniCorp, LLC v. Nintendo Co., Ltd.*, the Federal Circuit distinguished the claims-at-issue from those in *Enfish* on the ground that the claims, which relate to building a composite facial image using constituent parts, do not recite a software method that improves the functionality of a computer.⁹⁶

Claim 1 of the asserted patent recites:

A method for creating a composite image, comprising:

displaying facial feature images on a first area of a first display via a first device associated with the first display, wherein the facial feature images are associated with facial feature element codes;

selecting a facial feature image from the first area of the first display via a user interface associated with the first device, wherein the first device incorporates the selected facial feature image into a composite image on a second area of the first display, wherein the composite image is associated with a composite facial image code having at least a facial feature element code and wherein the composite facial feature image code is derived by performing at least one multiplication operation on a facial code using one or more code factors as input parameters to the multiplication operation; and

reproducing the composite image on a second display based on the composite facial image code.

In December 2015, without issuing a claim construction ruling, the district court granted defendant Nintendo’s motion for judgment on the pleadings that the claims are ineligible under Section 101. The Federal Circuit affirmed.

First, the Federal Circuit characterized the claimed idea as a method whereby a user displays images on a first display, assigns image codes to the images through an interface using a mathematical formula, and then reproduces the images based on codes.⁹⁷ The court reasoned that this method reflects basic encoding and decoding, and is patent-ineligible.⁹⁸ The court found that claim 1 is closer to the claims in *Digitech*—

⁹⁵ *Id.* (internal citations omitted).

⁹⁶ *RecogniCorp*, 855 F.3d at 1327.

⁹⁷ *Id.* at 1326.

⁹⁸ *Id.*

which relate to “a process of taking two data sets and combining them into a single data set” simply by organizing existing data into a new form—than to the claims in *Enfish*.⁹⁹ The *RecogniCorp* court reasoned that a “process that started with data, added an algorithm, and ended with a new form of data was directed to an abstract idea.”¹⁰⁰

With respect to the second *Alice* step, the court held that adding a mathematical formula to an otherwise abstract idea does not make a claim patent eligible. Moreover, the patentee did not allege a particularized application of encoding and decoding image data.¹⁰¹

Most recently, in *Visual Memory v. Nvidia Corp.*, Visual Memory successfully argued that its claims are like those in *Enfish*, and won a reversal at the Federal Circuit of a district court order dismissing its claims for failure to claim eligible subject matter.¹⁰²

Visual Memory brought suit for alleged infringement of a patent that teaches that prior computer systems frequently used a three-tiered memory hierarchy—of various speeds and costs—to enhance performance.¹⁰³ According to the patent, while these prior art memory systems allowed quick access to data at relatively low cost, they lacked versatility because they were designed and optimized based on the specific type of processor selected for use in that system. Visual Memory’s patent purports to overcome these deficiencies by creating a memory system with programmable operational characteristics that can be tailored for use with multiple different processors without the accompanying reduction in performance. The described system includes multiple high speed caches, each of which is programmable based on the type of processor connected to the memory system. Claim 1 recites:

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, wherein said system is connectable to said processor by a bus, said system comprising:

A main memory connected to said bus; and

⁹⁹ *Id.* at 1327.

¹⁰⁰ *Id.*

¹⁰¹ *Id.* at 1327–28.

¹⁰² *Visual Memory*, 2017 WL 3481288, at *4.

¹⁰³ See *id.* at *1–2 (discussing patent and case background).

A cache connected to said bus;

Wherein a programmable operational characteristic of said system determines a type of data stored by said cache.

The dependent claims further define the programmable operational characteristic, for example, whether the cache buffers data from both the bus master and the processor.

The district court granted NVIDIA’s motion to dismiss, concluding that the claims are directed to the “abstract idea of categorical data storage.”¹⁰⁴ The Federal Circuit reversed, holding that the claims “are directed to an improved computer memory system, not to the abstract idea of categorical data storage.”¹⁰⁵ As in *Enfish* and *Thales*, the court relied heavily on the specification’s description of how the “programmable operational characteristics” of the claimed system resulted in an advancement over the prior art.¹⁰⁶ NVIDIA argued that the claims are directed to no more than a “desired result” and that the “programmable operational characteristic” is purely functional. The court disagreed, reasoning that even the broadest claim required particular memory elements where the memory system is “configured . . . to store a type of data in the cache memory based on the type of processor connected to the memory system.”¹⁰⁷

Judge Hughes—the author of the *Enfish* opinion—dissented, arguing that the claims are written at a high level of abstraction without any recitation of specific means of implementing the “programmable operational characteristic”; it was effectively a “black box.”¹⁰⁸ The majority responded that Judge Hughes was merely raising a factual issue that (i) should not be resolved on a motion to dismiss and (2) is more relevant to enablement under Section 112 than eligibility under Section 101.¹⁰⁹

New Computer Architectures: Amdocs and Bascom

In a manner somewhat similar to *Enfish*, the Federal Circuit has found claims to be patent eligible if they are directed to specific new computer architecture.

¹⁰⁴ *Id.* at *4.

¹⁰⁵ *Id.*

¹⁰⁶ *Id.*

¹⁰⁷ *Id.* at *5.

¹⁰⁸ *Id.* at *7.

¹⁰⁹ *Id.* at *5.

In *Bascom Global Internet Servs., Inc. v. AT&T Mobility LLC*, the Federal Circuit reversed a district court dismissal under Rule 12(b)(6) of claims directed to filtering certain internet content.¹¹⁰

Bascom sued AT&T for infringement of a patent filed in 1997.¹¹¹ According to the patent, at that time, corporations had the need to prevent their employees from accessing websites with certain types of information, while allowing them to continue to access “technical or business sites.” Parents similarly had the need to prevent family members from accessing certain types of websites. Prior art solutions to this problem—per the patent specification—involved one or more filtering mechanisms, either by “black listing” certain inappropriate websites, or “white listing” those websites deemed acceptable. These prior art solutions permitted filtering either on a local computer, or on a local or remote server. The patent explains that the local computer approach was time-consuming, and also subject to work-arounds by computer-savvy users. The server-side approach suffered from the drawback that it only permitted a single set of filtering criteria for all applicable users.

The patent purports to solve the prior art filtering problems with a remote-filtering solution that correlates a request for website access with particular user login credentials that can be filtered by Internet Service Providers (ISPs). In this manner, different filtering mechanisms can be applied to different users, without the risks and inefficiency associated with local installation. The patent also describes a related embodiment using individual-customizable sets of exclusive and inclusive lists in combination with master-inclusive lists applicable to all users accessing a particular server or set of servers.

Claim 1 of the '606 patent is representative of the embodiment involving individually-customizable lists:

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 generated network access requests for said individual controlled access network accounts;

at least one filtering scheme;

¹¹⁰ *Bascom Global Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1343 (Fed. Cir. 2016).

¹¹¹ See *id.* at 1343–47 (discussing case and patent background).

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 receives said network access requests from said client computer and executing said associated filtering scheme utilizing said associated set of logical filtering elements.

The district court granted AT&T's 12(b)(6) motion, finding that the claims are directed to the abstract idea of "filtering content" because "content provided on the Internet is not fundamentally different from content observed, read, and interacted with through other mediums like books, magazines, television or movies." The Federal Circuit agreed with the district court's determination that the claims are directed to an abstract idea, but nonetheless reversed, ruling that Bascom had sufficiently alleged that the claims recited an "inventive concept" as an ordered combination.¹¹² Specifically, Bascom had argued that the inventive concept rests on taking advantage of the ability of at least some ISPs to identify individual accounts that communicate with the ISP server, and to associate a request for Internet content with a specific individual account. The Federal Circuit held that, "[o]n this limited record, this specific method of filtering Internet content cannot be said, as a matter of law, to have been conventional or generic."¹¹³ The court reasoned that the claims do not merely "recite the abstract idea of filtering content along with the requirement to perform it on the Internet, or to perform it on a set of generic computer components."¹¹⁴ Rather, they recite a specific, and non-preemptive, implementation of the abstract idea of filtering content.

In *Amdocs*, the Federal Circuit reached a similar conclusion, albeit after an earlier appeal had resolved certain claim construction disputes.¹¹⁵

The patents-at-issue each describe a system which allows network service providers to account for and bill for Internet protocol ("IP") network communications.¹¹⁶ The system includes network devices, information source modules ("ISMs"), gatherers, a

¹¹² *Id.* at 1343–49.

¹¹³ *Id.* at 1350.

¹¹⁴ *Id.*

¹¹⁵ *Amdocs*, 841 F.3d at 1290–91.

¹¹⁶ See *id.* at 1291–93 (discussing patent and case background).

central event manager (“CEM”), a central database, a user interface server and terminals or clients. According to the common written description, the components are arrayed in a distributed architecture that minimizes the impact on network and system resources by collecting and processing data close to their source, thereby reducing congestion in network bottlenecks. Each patent specification explains that this is an advantage over prior art systems that stored information in one location, which made it difficult to keep up with massive record flows from the network devices and which required huge databases.

Claim 1 of one of the patents (the ’065 patent) recites as follows:

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 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 Federal Circuit noted prior cases—*Digitech*, *Context Extraction* and *TLI*—where the court found that somewhat similar claims involving the mere collection and manipulation of information do not satisfy Section 101.¹¹⁷ The court also looked to *Enfish*, where “facially-similar” claims directed to an improvement in computer functionality passed step one of *Alice*, and to those claims in *DDR Holdings* and *Bascom*, which pass muster because they purport to solve a technology-based problem (albeit with conventional, generic components).¹¹⁸ The court then concluded, without much explicit reasoning, that the ’065 patent claims are much closer to those in *DDR* and *Bascom* than to those in *Digitech*, *Content Extraction* or *TLI*.¹¹⁹ The court pointed to its earlier claim construction decision where it had construed “enhance” as meaning “to apply a number of field enhancements in a distributed fashion,” and then relied on the specification’s explanation of how the “distributed enhancement” is a critical advancement over the prior art and “reduce[s] congestion in network bottlenecks but

¹¹⁷ *Id.* at 1300.

¹¹⁸ The court did not explain what it meant by “facially-similar” claims. *Id.* at 1300–01.

¹¹⁹ *Amdocs*, 841 F.3d at 1300.

still allow[s] the data to be accessible from a central location.”¹²⁰ The court reasoned that “the claim’s enhancing limitation necessarily requires that the generic components operate in an unconventional manner to achieve an improvement in computer functionality.”¹²¹ As a result, the court held that the claims of the ’065 patent (and other similar claims from other asserted patents) are patent eligible, without pedantically walking through the *Alice* framework.

Judge Reyna dissented, focusing in his opinion—as he often does in Section 101 appeals—on the distinction between the claims-as-issue that merely recite the “result or effect produced” (which can never be patent eligible) and claims that teach a specific “means or method of producing a certain result, or effect” (which may be patent eligible).¹²²

Financial-Industry Patents CAN Be Patent-Eligible!

Despite the common misperception to the contrary, the Federal Circuit has held financial-industry claims to be patent eligible under Section 101. In *Trading Techs.*, the Federal Circuit affirmed a district court ruling denying defendant’s motion for judgment as a matter of law that the asserted claims are ineligible under Section 101.¹²³ The challenged patents describe a method and system for electronic trading of stocks, bonds, futures, options and other similar products.¹²⁴ The patents describe “a method and system for reducing the time it takes for a trader to place a trade when electronically trading on an exchange, thus increasing the likelihood that the trader will have orders filled at desirable prices and quantities.” The described trading system uses a graphical user interface that “displays the market depth of a commodity traded in a market, including a dynamic display for a plurality of bids and for a plurality of asks in the market for the commodity and a static display of prices corresponding to the plurality of bids and asks.” A representative method claim recites:

¹²⁰ *Id.* at 1303.

¹²¹ *Id.* at 1301.

¹²² *Id.* at 1309 (Reyna, dissenting). Panel decisions penned by Judge Reyna frequently focus on this result-oriented approach. See, e.g., *Apple Inc. v. Ameranth, Inc.*, 842 F.3d 1229, 1244 (Fed. Cir. 2016) (“Generally, a claim that merely describes an ‘effect or result disassociated from any method by which [it] is accomplished’ is not directed to patent-eligible subject matter.”) (internal citation and quotation omitted); *McRO*, 837 F.3d at 1312 (“The abstract idea exception prevents patenting a result where ‘it matters **not** by what process or machinery the result is accomplished.’” (emphasis in original and quoting *Morse*, 56 U.S. at 113)).

¹²³ *Trading Techs. Int’l, Inc. v. CQG, Inc.*, 675 Fed. Appx. 1001, 1002 (Fed. Cir. Jan. 18, 2017).

¹²⁴ See *id.* at 1002–04 (discussing patent and case background).

A method for displaying market information relating to and facilitating trading of a commodity being traded in an electronic exchange having an inside market with a highest bid price and a lowest ask price on a graphical user interface, the method comprising:

dynamically displaying a first indicator in one of a plurality of locations in a bid display region, each location in the bid display region corresponding to a price level among a common static price axis, the first indicator representing quantity associated with at least one order to buy the commodity at the highest bid price currently available in the market;

dynamically displaying a second indicator in one of a plurality of locations in an ask display region, each location in the ask display region corresponding to a price level among the common static price axis, the second indicator representing quantity associated with at least one order to sell the commodity at the lowest ask price currently available in the market;

displaying the bid and ask display regions in relation to fixed price levels positioned along the common static price axis such that when the inside market changes, the price levels along the common static price axis do not move and at least one of the first and second indicators moves in the bid or ask display regions relative to the common static price axis;

displaying an order entry region comprising a plurality of locations for receiving commands to send trade orders, each location corresponding to a price level along the common static price axis; and

in response to a selection of a particular location of the order entry region by a single action of a user input device, setting a plurality of parameters for a trade order relating to the commodity and sending the trade order to the electronic exchange.

The Federal Circuit agreed with the district court's characterization that the "claims require a specific, structured graphical user interface paired with a prescribed functionality directly related to the graphical user interface's structure that is addressed to and resolves a specifically identified problem in the prior state of the art."¹²⁵ It was of no moment to the court that the claimed method is used in the facilitation of financial transactions or that it involves a method of displaying information.

¹²⁵ *Id.* at 1004.

In many other instances, the Federal Circuit has held claims relating to financial-industry technology to be ineligible. For example, in *LendingTree, LLC v. Zillow, Inc.*, the court reversed a district court's denial of judgment as a matter of law and held claims directed to a "process for coordinating loans on a loan processing computer over the Internet" to be ineligible.¹²⁶ One of the representative claims recites as follows:

A method for coordinating an electronic credit qualification form between an Internet user and a plurality of lending institutions via the Internet, comprising the steps of:

- (a) receiving selection criteria from the plurality of lending institutions;
- (b) storing the selection criteria in a database;
- (c) displaying a plurality of documents in a web site;
- (d) receiving a plurality of credit data sent from the Internet user;
- (e) applying said credit data to a filter comprising the plurality of selection criteria of the database to select without manual intervention each one of said plurality of lending institutions associated with a match of said credit data to said selection criteria;
- (f) determining an appropriate transfer method to transmit said electronic credit qualification form to the lending institutions associated with a match of said credit data;
- (g) transmitting said electronic qualification form comprising said credit data to said plurality of lending institutions associated with a match of said credit data via said appropriate transfer method, the transmission of said electronic qualification form comprising said credit data occurring without a delay for reception of any credit decisions from said lending institutions;
- (h) receiving a plurality of positive credit decisions from said plurality of lending institutions associated with a match of said credit data regarding an offer of credit or a loan to the Internet user;
- (i) simultaneously displaying the plurality of positive credit decisions to the Internet user on the web site;
- (j) receiving via the web site at least one decision from the Internet user regarding at least one of the positive credit decisions, the Internet user's decision

¹²⁶ *Lending Tree, LLC v. Zillow, Inc.*, 656 Fed. Appx. 991, 992–93 (Fed. Cir. July 25, 2016).

comprising an acceptance, denial or request for more information regarding a positive decision for one of said lending institutions associated with a match of said credit data; and

(k) transmitting the at least one Internet user's decision to at least one lending institution corresponding with a positive credit decision so that said Internet user can obtain credit or a loan from one of said lending institutions associated with a match of said credit data,

Whereby said lending institutions associated with a match of said credit data compete with each other for business with the Internet user.¹²⁷

The Federal Circuit held that the claims are directed to the abstract idea of a “loan-application clearinghouse or, more simply, coordinating loans,” and compared it to the “fundamental economic practices” found abstract in *Alice* and other Federal Circuit decisions such as *OIP* and *Ultramercial*, discussed below.¹²⁸ The court also rejected *LendingTree's* argument that limitation (i), relating to “simultaneous competition,” amounts to an inventive concept. “[U]sing a generic computer to display a ‘plurality of positive credit decisions’ as recited in claim 1 . . . is not meaningfully different from using a generic computer to . . . issue instructions [as in *Alice*].”¹²⁹

In *OIP Techs., Inc. v. Amazon.com, Inc.*, the asserted patent purports to address a disconnect between merchandisers and real-time supply and demand by using a “price optimization method that helps vendors automatically reach better pricing decisions through automatic estimation and measurement of actual demand to select prices.”¹³⁰

More specifically, the claims recite pre-sale price-testing with a set of potential customers, using statistics from the testing to map a demand curve over time for a given product, and automatically selecting and offering a new price based on the estimated outcome. The Federal Circuit held that the claims are ineligible—as directed to the abstract idea of offer-based price optimization coupled with “well-understood, routine conventional activities.”¹³¹ The court also noted that the specification and prosecution history emphasize that the “key distinguishing feature of the claims is the

¹²⁷ The district court construed the “whereby” clause to mean “the selected lending institutions simultaneously compete by providing offers for credit to the computer user via the computer network.” *Id.* at 994, n. 2.

¹²⁸ *Id.* at 996.

¹²⁹ *Id.* at 997.

¹³⁰ *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1361 (Fed. Cir. 2015).

¹³¹ *Id.* at 1363.

ability to automate or otherwise make more efficient traditional price-optimization methods,” and held that “relying on a computer to perform routine tasks more quickly or more accurately is insufficient to render a claim patent eligible.”¹³²

In many ways, the claims in *Lending Tree*, *OIP* and *Trading Techs.* are similar; all involve display and/or transmission of financial information. The difference, however, appears to be that the claims in *Trading Techs.* involve novel elements of a user interface beyond mere display of information, namely, a static price axis and display of order entry regions corresponding to that axis. In other words, although the claims involve financial data and economic practices (trading commodities), they are limited to a particular user interface display that goes beyond just displaying or transmitting particular types of information.

Areas of Ongoing Confusion

Overlap Between Novelty and Eligibility

In *Amdocs*, Judge Reyna issued a dissent asserting that novelty and eligibility are mutually-exclusive issues:

To be clear, the concept of inventiveness is distinct from that of novelty. Novelty is the question of whether the claimed invention is new. Inventiveness is the question of whether the claimed matter is invention at all, new or otherwise. The inventiveness inquiry of § 101 should therefore not be confused with the separate novelty inquiry of § 102 or the obviousness inquiry of § 103.¹³³

While Judge Reyna’s vision is laudable, it is hard to seriously dispute that the “abstract idea” jurisprudence has developed in a way that intermingles questions of novelty and nonobviousness.¹³⁴ In *Alice* and *Bilski*, for example, the claims were held to be abstract partly because they are directed to an economic practice “long prevalent” in our system of commerce. The Federal Circuit has continued the Supreme Court’s practice of taking notice of “long prevalent” or existing technology. For example, in *Intellectual Ventures I LLC v. Symantec Corp.*, one of the three patents-at-issue—the

¹³² *Id.*; see also *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709 (Fed. Cir. 2014) (holding, before claim construction, that methods for displaying advertisements along with copyrighted video or music, as a consumer alternative to purchasing that copyrighted material, without having to view an advertisement, are abstract and patent ineligible).

¹³³ *Amdocs*, 841 F.3d at 1307.

¹³⁴ In *Visual Memory*, the majority criticized the dissent (Hughes) for intermingling concepts of enablement and eligibility. *Visual Memory*, 2017 WL 3481288, at *5.

'610 patent—relates to a method of computer virus screening.¹³⁵ Although the idea of virus screening originated in the computer era, the Federal Circuit nevertheless held that it is abstract because (1) the patent itself acknowledges that virus screening was long prevalent in the field of computers, and (2) the Federal Circuit panel majority found that the asserted claim does not claim a new method of virus screening.¹³⁶ Judge Stoll dissented, focusing on the patent specification's characterization that the claimed invention represents a “fundamental architectural shift from prior-art virus screening, which occurred locally on an end user's computer rather than centrally as in the invention [which places it in the cloud].”¹³⁷ Judge Stoll noted the jury had found the '610 patent not invalid over the prior art, which—in her view—undermines the majority's conclusion that the asserted claims are “perfectly conventional.”¹³⁸

And, on numerous other occasions, the Federal Circuit has hinged its ineligibility ruling on a determination (at various procedural stages) that technology is “routine” or “conventional.”¹³⁹

Using the same approach, the Federal Circuit in *Amdocs* found the claims were found to be patent eligible because they recite generic components in an “unconventional manner to achieve an improvement in computer functionality.”¹⁴⁰ And, in *Bascom*, the Federal Circuit held that, “[o]n this limited record, this specific method of filtering Internet content cannot be said, as a matter of law, to have been **conventional or generic**.”¹⁴¹

Judge Newman has led the way in criticizing the way in which the court's decisions have mixed concepts of novelty with eligibility.

¹³⁵ *IV II*, 838 F.3d at 1319.

¹³⁶ *Id.* at 1319–21.

¹³⁷ *Id.* at 1329–30.

¹³⁸ *Id.*

¹³⁹ *TLI*, 823 F.3d at 611 (affirming district court's dismissal of case where asserted patents were ineligible for claiming “the use of conventional or generic technology in a nascent but well-known environment, without any claim that the invention reflects an inventive solution to any problem presented by combining the two.”); *see also OIP*, 788 F.3d at 1362–63 (affirming district court's finding on a motion to dismiss that “offer-based price optimization” is a fundamental economic concept and that the claimed computer-based implementation of that idea is routine and conventional).

¹⁴⁰ *Amdocs*, 841 F.3d at 1300–01.

¹⁴¹ *Bascom*, 827 F.3d at 1350 (emphasis added).

For example, in *Bascom*, Judge Newman concurred, all but urging the abolition of the judicially-created “abstract idea” exception.¹⁴² She opined that Title 35 of the 1952 Patent Act discarded judge-made usage of “invention” and “flash of creative genius,” both considered meaningless terms by the drafters, and replaced it with the statutory standard of unobviousness.¹⁴³ She stated that, “[o]n this history, the emphasis on eligibility has led to erratic implementations in the courts,” for example with respect to the “inventive concept” inquiry. Judge Newman argued for a return to the broad letter of Section 101, and a shift towards resolution of claims directed to “abstract ideas” on application of the requirements and conditions of patentability, rather than eligibility.¹⁴⁴ Of note, Judge Newman opined that an initial determination of patentability “always resolves or moots eligibility.”¹⁴⁵

Judge Newman also authored the court’s opinion in *Trading Technologies* and wrote that “the public interest in innovative advance is best served when close questions of eligibility are considered along with the understanding flowing from review of the patentability criteria of novelty, unobviousness, and enablement, for when these classical criteria are evaluated, the issue of subject matter eligibility is placed in the context of the patent-based incentive to technological process.”¹⁴⁶

Characterizing the Claims and Invention: Tension Between Different Federal Circuit Decisions

Nearly all of the Federal Circuit’s decisions under Section 101 have based eligibility determinations on simplified characterizations of a single, representative claim or at most, a few representative claims. These simplified characterizations are then bucketed into abstract or non-abstract ideas. For example, as set out above, the Federal Circuit characterized the claims in *Synopsys*, which describe schemes for translating HDL-based functional descriptions of logic circuits into hardware component descriptions, as abstract mental processes. The court simply determined that the “basic thrust” of the claims is the mental process of “translating a functional description of a

¹⁴² *Id.* at 1352.

¹⁴³ *Id.* at 1353.

¹⁴⁴ While courts sometimes use “patentability” and “ineligibility” interchangeably, in this case, Judge Newman used the term “patentability” to refer to the criteria outlined in Sections 102, 103 and 112.

¹⁴⁵ *Bascom*, 827 F.3d at 1353; *compare IV II*, 838 F.3d at 1329–30 (holding claims patent ineligible as reciting “generic” and “well known” technology despite jury finding of novelty and nonobviousness).

¹⁴⁶ *Trading Techs.*, 675 Fed. Appx. at 1006.

logical circuit into a hardware component description of the logical circuit.”¹⁴⁷ And, in *Intellectual Ventures I LLC v. Capital One Financial Corp.*, described above, the patent-at-issue concerns a system for ensuring compatibility of shared XML documents by creating a second document—a “dynamic document”—which is based upon data extracted from an original XML document. The Federal Circuit found that, “[s]tripped of excess verbiage, the claim creates the dynamic document based on ‘management record types’ (‘MRTs’) and ‘primary record types’ (‘PRTs’),” which are each inventor-coined terms to describe the organizational structure of the data at issue.¹⁴⁸ The court then characterized this pared-down summary of the claim as an obviously abstract idea, namely, collecting, displaying, and manipulating data, and held the claims to be ineligible.¹⁴⁹

On the other hand, in *Thales Visionix Inc.*, many of the claims-at-issue are directed to a system for tracking the motion of an object relative to a moving reference frame.¹⁵⁰ However, the representative claim does not actually require any tracking, but rather just two sensors and an element adapted to “determine” an orientation of an object based on the sensor signals.¹⁵¹ The court could have easily characterized this claim as “abstract,” for example, as a method of collecting and manipulating data, but instead held that the claims are similar to those in *Diehr* and therefore not abstract.

Much of the industry confusion surrounding Section 101 jurisprudence stems from the somewhat subjective nature of courts’ claim characterizations. Unfortunately, neither the Supreme Court nor the Federal Circuit has offered much guidance on this issue. Recently, Judge Hughes—distinguishing *Enfish* in his *Visual Memory* dissent—asserted that, “when we assess what the claims are directed to, we must do so at the same level of generality or abstraction expressed in the claims themselves.”¹⁵² However, even this task proved difficult in *Visual Memory*, where the majority and dissent had starkly different views about the scope of the claims and their level of “generality.”

¹⁴⁷ *Synopsys*, 839 F.3d at 1150–51.

¹⁴⁸ *IVI*, 850 F.3d at 1339–40.

¹⁴⁹ *Id.* at 1341.

¹⁵⁰ *Thales*, 850 F.3d at 1345.

¹⁵¹ *Id.*

¹⁵² *Visual Memory*, 2017 WL 3481288, at *6-7.

Key Lessons for Prosecutors and Litigators

It's the Claims, Stupid . . . and the Specification

On numerous occasions, the Federal Circuit has held claims invalid under Section 101 because the claims themselves do not require what the patentee claims to be the eligible idea.

For example, in *Tranxition, Inc. v. Lenovo (United States) Inc.*, the claims-at-issue are directed to the automatic migration of computer settings from one computer to another, and more specifically to extraction of particular configuration settings and generation of a “transition plan” for performing the migration. The patentee argued that the claims are directed to an inventive concept because a process of manual setting migration would necessarily capture all of the configuration settings in a computer. The Federal Circuit rejected this argument, reasoning that, “[t]hough a computer could potentially have dozens, if not hundreds of settings across numerous applications, the claim language only requires one or more configuration settings.”¹⁵³

One of the patents-at-issue in *Intellectual Ventures I LLC v. Symantec Corp.*—the ’050 patent—describes a method of screening emails and other data files for unwanted content.¹⁵⁴ Representative claim 9 recites:

a method for identifying characteristics of data files, comprising:

receiving, on a processing system, file content identifiers for data files from a plurality of file content identifier generator agents, each agent provided on a source system and creating file content IDs using a mathematical algorithm, via a network;

determining, on the processing system, whether each received content identifier matches a characteristic of other identifiers; and

outputting, to at least one of the source systems, responsive to a request from said source system, an indication of the characteristic of the data file based on said step of determining.

IV argued that the claim contains an “inventive concept” because it (1) “shrinks” the “period of time between identification of a computer virus by an anti-malware provider and distribution of that knowledge to its users” (the “protection gap”); and (2)

¹⁵³ *Tranxition*, 664 Fed. Appx. at 972.

¹⁵⁴ *IV II*, 838 F.3d at 1313-14.

moots the problem of “exponential growth in malware and spam,” which increases the amount of antivirus signatures to be downloaded (the “volume problem”).¹⁵⁵ The Federal Circuit rejected this argument because the “asserted claims do not contain any limitations that address the protection gap or volume problem, e.g., by requiring automatic updates to the antivirus or antispam software or the ability to deal with a large volume of such software.”¹⁵⁶ Although a claim is eligible if it contains an inventive concept, “when a claim directed to an abstract idea ‘contains no restriction on how the result is accomplished . . . and the mechanism is not described, although this is stated to be the essential innovation,’ then the claim is not patent-eligible.”¹⁵⁷

Similarly, in *Synopsys, Inc. v. Mentor Graphics Corp.* (discussed above), the asserted patents relate to the logic circuit design process. Although the claims themselves don’t recite any computer or hardware, *Synopsys* disputed that they recite abstract “mental processes” because the “complexity” of the claimed methods would make it effectively impossible for a skilled logic circuit designer to perform the methods mentally or with pencil and paper.¹⁵⁸ The Federal Circuit avoided this “complexity” distinction because representative claim 1 could be infringed by converting just one functional description into a hardware component via simple assignment conditions. In other words, the claims do not require the complexity that *Synopsys* asserts, even if—in practice—that is their industry application.¹⁵⁹

On the other hand, patentees have saved claims from ineligibility based on clever claim construction positions. For example, in *Amdocs*, the patents-at-issue each describe a system including network devices, ISMs, gatherers, a CEM, a central database, a user interface server and terminals or clients. According to the common written description, the components are arrayed in a distributed architecture.

The Federal Circuit held that the claims in these patents are patent-eligible, relying mainly on its earlier decision in the litigation construing the claims as requiring the distributed architecture disclosed in the specification.¹⁶⁰ The court relied on the specification’s explanation of how the “distributed enhancement” is a critical

¹⁵⁵ *Id.* at 1316.

¹⁵⁶ *Id.*

¹⁵⁷ *Id.* (citing *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1347–48 (Fed. Cir. 2015)).

¹⁵⁸ *Synopsys*, 839 F.3d at 1147.

¹⁵⁹ *Id.*

¹⁶⁰ *Amdocs*, 841 F.3d at 1300.

advancement over the prior art and “reduce[s] congestion in network bottlenecks but still allow[s] the data to be accessible from a central location.”¹⁶¹ The court reasoned that “the claim’s enhancing limitation necessarily requires that the generic components operate in an unconventional manner to achieve an improvement in computer functionality.”¹⁶²

And, in *Visual Memory*, the specification’s description that the patent represents an advancement over the prior art was key to the eligibility determination:

The specification explains that multiple benefits flow from the ’740 patent’s improved memory system . . . like the patents at issue in *Enfish* and *Thales*, the specification discusses the advantages offered by the technological improvement. Accordingly, this is not a case where the claims merely recite the “use of an abstract mathematical formula on any general purpose computer,” “a purely conventional computer implementation of a mathematical formula,” or “generalized steps to be performed on a computer using conventional computer activity.”¹⁶³

As evidenced by this decision, and those discussed above, it is critical to draft the claims—and the specification—in a manner that identifies and captures the technological advancement over the prior art.

The Problem With Functional Claim Language

Numerous claims have fallen as patent ineligible under Section 101 for reciting purely functional language. In *TLI*, the Federal Circuit rejected the patentee’s arguments that the claims are directed to an improvement in computer functionality, reasoning that the recited physical components in the claims are described in the specification in “purely functional terms.”¹⁶⁴

¹⁶¹ *Id.*

¹⁶² *Id.* at 1300–01.

¹⁶³ *Visual Memory*, 2017 WL 3481288, at *4 (citing *Enfish*, 822 F.3d at 1338).

¹⁶⁴ *TLI*, 823 F.3d at 612.

A similar result was reached in *Affinity Labs of Texas, LLC v. Amazon.com Inc.*¹⁶⁵ There, the patent-in-suit describes a method for “targeted advertising” in which an advertisement is selected for delivery to the user of a portable device based on at least one piece of demographic information about the user.¹⁶⁶ As summarized by the Federal Circuit, the representative claim “is directed to a network-based media system with a customized user interface, in which the system delivers streaming content from a network-based resource upon demand to a handheld wireless electronic device having a graphical user interface.”¹⁶⁷ The court held that this represents an abstract idea, since, as in *TLI*, the claims recite “the use of conventional or generic technology in a nascent but well-known environment, without any claim that the invention reflects an inventive solution to any problem presented by combining the two.”¹⁶⁸ With respect to *Alice* step two, the court found that the claims lack an “inventive concept.” In this regard, the court noted that the claims are written in mostly functional terms, and lack any “concrete way” of employing the claimed features.¹⁶⁹

Miscellaneous Issues

Does the Procedural Posture Matter?

The Federal Circuit has often affirmed dismissals of lawsuits under Rule 12(b)(6) where the claims of the asserted patents are directed to ineligible subject matter. For example, in *Content Extraction*, the Federal Circuit rejected plaintiff Content Extraction’s argument that the district court erred by dismissing the claims before claim construction and fact discovery, reasoning that, “[a]lthough the determination of patent eligibility requires a full understanding of the basic character of the claimed subject matter, claim construction is not an inviolable prerequisite to a validity

¹⁶⁵ *Affinity Labs I*, 838 F.3d at 1272.

¹⁶⁶ *Id.* at 1268.

¹⁶⁷ *Id.*

¹⁶⁸ *Id.* at 1269.

¹⁶⁹ *Id.* at 1271; see also *Affinity Labs of Texas, LLC v. DirecTV, LLC*, 838 F.3d 1253 (Fed. Cir. 2016) (“*Affinity Labs II*”) (holding that the claims are directed to an abstract idea because they are “entirely functional in nature,” and do not recite anything about “how to implement out-of-region broadcasting on a cellular telephone.”); *Apple*, 842 F.3d at 1244 (“Generally, a claim that merely describes an ‘effect or result dissociated from any method by which it is accomplished’ is not directed to patent eligible subject matter.” (citing *Internet Patents*, 790 F.3d at 1348)).

determination under § 101. The district court construed the terms identified by CET in the manner most favorable to [CET].”¹⁷⁰

Nonetheless, several decisions have come out differently at the motion to dismiss stage, where the specification itself or the patentee’s allegations were found to create a factual dispute relevant to eligibility questions. In *Bascom*, the Federal Circuit reversed the district court’s dismissal of the patentee’s claims, drawing factual disputes “in favor of the nonmovant” and holding that, “On this limited record, [the] specific method of filtering Internet content cannot be said, as a matter of law, to have been conventional or generic.”¹⁷¹

There are clearly conflicting views at the Federal Circuit about the appropriateness of early resolution on Section 101 grounds, with Judge Mayer on one end of the spectrum and Judge Newman on the other.

In *Ultramercial*, Judge Mayer wrote a concurring opinion to emphasize that Section 101 is a “threshold question” that must be addressed at the outset of litigation:

Section 101 is the gateway to the Patent Act for good reason. It is the sentinel, charged with the duty of ensuring that our nation’s patent laws encourage, rather than impede, scientific progress and technological innovation . . .

In this sense, the section 101 determination bears some of the hallmarks of a jurisdictional inquiry. Just as a court must assure itself of its own jurisdiction before resolving the merits of a dispute, it must likewise first assess whether claimed subject matter is even *eligible* for patent protection before addressing questions of invalidity or infringement . . . Indeed, if claimed subject matter does not fall within the ambit of section 101, any determination on validity or infringement constitutes an impermissible advisory opinion.¹⁷²

¹⁷⁰ *Content Extraction*, 776 F.3d at 1349; *see also TLI*, 823 F.3d at 609–10 (affirming Rule 12 dismissal on Section 101 grounds on the third round of decisions after two prior reversals were vacated by the Supreme Court in view of *Mayo* and later *Alice*); *The Cleveland Clinic Found. v. True Health Diagnostics LLC*, 859 F.3d 1352, 1360 (Fed. Cir. 2017) (affirming dismissal of claims on Section 101 grounds and stating, “we have repeatedly affirmed § 101 rejections at the motion to dismiss stage, before claim construction or significant discovery has commenced.”).

¹⁷¹ *Bascom*, 827 F.3d at 1350; *see also FairWarning*, 839 F.3d at 1097 (“plausible factual allegations may preclude dismissing a case under § 101 where, for example, nothing on the record . . . refutes those allegations as a matter of law or justifies dismissal under Rule 12(b)(6).” (internal citations omitted)). And, in *Visual Memory*, the majority criticized the dissent’s argument about the lack of disclosure in the specification as “improper when reviewing a dismissal under Rule 12(b)(6).” *Visual Memory*, 2017 WL 3481288, at *5.

¹⁷² *Ultramercial*, 772 F.3d at 718.

Judge Mayer identified three benefits of addressing section 101 issues at the outset: (1) conserving scarce judicial resources; (2) as a bulwark against vexatious infringement suits; and (3) protecting the public, since “subject matter eligibility challenges provide the most efficient and effective tool for clearing the patent thicket.”

He further asserted that, “[w]hile we must be mindful of extraneous fact finding outside the record, particularly at the motion to dismiss stage, here we need to only look to the specification, which describes the telephone unit and server as either performing basic computer functions such as sending and receiving data, or performing functions “known” in the art.”

Judge Mayer wrote a similar concurrence in OIP, addressing OIP’s argument that the district court erred in resolving the patent eligibility issue on the pleadings:

Addressing 35 U.S.C. § 101 at the outset not only conserves scarce judicial resources and spares litigants the staggering costs associated with discovery and protracted claim construction litigation, it also works to stem the tide of vexatious suits brought by the owners of vague and overbroad business method patents. Accordingly, where, as here, asserted claims are plainly directed to a patent ineligible abstract idea, we have repeatedly sanctioned a district court’s decision to dispose of them on the pleadings.

Judge Newman has offered a starkly different take, suggesting in *Trading Technologies* that “close questions of eligibility” should take a back seat to classical criteria of patentability. In *Bascom*, she wrote a concurrence that was far blunter, and—as noted above—all but urged the abolishment of the judicially-created “abstract idea” exception. Judge Newman argued for a return to the broad letter of Section 101, and a shift towards resolution of claims directed to “abstract ideas” on application of the requirements and conditions of patentability, rather than eligibility.¹⁷³

Use of Representative Claims

The Federal Circuit has often streamlined its Section 101 analysis by considering only representative claims. It is questionable whether this practice, as implemented, is consistent with Supreme Court precedent, which requires consideration of 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.”¹⁷⁴ Despite this language in *Alice*, the Federal Circuit has cited

¹⁷³ *Bascom*, 827 F.3d at 1353–54.

¹⁷⁴ *Alice*, 134 S. Ct. at 2355 (emphasis added).

that same decision as justification for its use of representative claims.¹⁷⁵ However, in doing so, the Federal Circuit has ignored the fact that the parties in *Alice* stipulated to representative claims.

In *Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, the court held that a district court decision on patent-ineligibility of system claims must be affirmed, because those claims offer “no meaningful limitations beyond the method claims that have been held patent-ineligible” and that were not appealed by Accenture.¹⁷⁶ “While it is not always true that related system claims are patent-ineligible because similar method claims are, when they exist in the same patent and are shown to contain insignificant meaningful limitations, the conclusion of ineligibility is inescapable.”¹⁷⁷

In *Content Extraction*, patent owner CET argued that certain dependent claims recite additional steps, rendering those claims patent-eligible. For instance, CET noted that one dependent claim additionally requires “defining a set of symbols which designate fields of information required by an application program; and detecting the presence of a particular one of said defined set of symbols on a hard copy document and extracting a field of information required by an application program based on said detecting.”¹⁷⁸ The Federal Circuit rejected CET’s argument, reasoning (without citation of evidence other than the oral argument transcript) that this limitation merely describes generic optical character recognition technology.¹⁷⁹ The court did not independently consider the dependent claim as an “ordered combination.”¹⁸⁰

Moreover, the Federal Circuit appears to have put the onus on the patent owner to explain why particular claims are not representative for Section 101 purposes. In *Affinity Labs of Texas, LLC v. Amazon.com Inc.*, the court noted that, “[a]lthough Affinity has not conceded that claim 14 is representative of the remaining claims, it has not shown how independent claims 1 and 8 differ materially from claim 14 . . .

¹⁷⁵ See *Mortgage Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1324, n. 6 (Fed. Cir. 2016) (“We have no need to address the four asserted claims individually. See *generally Alice*, 134 S. Ct. at 2359–60 (finding 208 claims to be patent-ineligible based on analysis of one representative claim).”).

¹⁷⁶ *Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1342 (Fed. Cir. 2013).

¹⁷⁷ *Id.* at 1344.

¹⁷⁸ *Content Extraction*, 776 F.3d at 1348–49.

¹⁷⁹ *Id.* at 1349.

¹⁸⁰ *Id.*; see also *Cleveland Clinic*, 859 F.3d at 1360 (rejecting plaintiff Cleveland Clinic’s argument that the dependent claims provide sufficient inventive concepts since “[e]ach limitation Cleveland Clinic raises . . . merely recites known methods of detecting MPO or MPO derivatives and applies the correlation between these biomarkers and cardiovascular health.”).

Because Affinity has failed to present any meaningful argument for the distinctive significance of any claim limitations other than those in claim 14, [*Elec. Power*, 830 F.3d at 1352], we treat claim 14 as representative of all the claims for purposes of this appeal.”¹⁸¹

Conclusion

Even after dozens of post-*Alice* decisions at the Federal Circuit, including several holding claims to be patent-eligible, it does not feel to the authors as if the court is any closer to developing clear guidelines for practitioners and stakeholders seeking to navigate the abstract idea minefield. The latest trend towards a “decisional mechanism” offers little hope; comparing disparate claims covering disparate technologies is itself subjective and difficult in application. Much of the current problem is not the Federal Circuit’s doing. The Supreme Court set the court down this path starting with its decision in *Bilski* and ending with its pronouncement in *Alice* of a two-part test, which in reality is less a test than an outline of general eligibility principles. Nevertheless, the Federal Circuit has taken the bait and applied the abstract idea exception to numerous technologies well beyond those claimed in *Alice* or *Bilski*. For practitioners and stakeholders alike, the best that can be done is to focus carefully on the claim language—avoiding purely functional language and claims directed to mental steps.

¹⁸¹ *Affinity Labs II*, 838 F.3d at 1267, n. 2; see also *TDE Petroleum Data Solutions, Inc. v. AKM Enter., Inc.*, 657 Fed. Appx. 991, 993 n. 1 (Fed. Cir. 2016) (“Although TDE asserted the other 114 claims contained in the ’812 patent, it made no attempt in either its briefs or at oral argument to distinguish those claims from representative claim 1, other than to state that the systems (reciting generic hardware) are different from the methods. Those arguments are insufficient to demonstrate eligibility under § 101.”).

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