United States Court of Appeals for the Federal Circuit

AMDOCS (ISRAEL) LIMITED,
Plaintiff-Appellant

v.

OPENET TELECOM, INC.,
OPENET TELECOM LTD.,
Defendants-Appellees

2015-1180

Appeal from the United States District Court for the Eastern District of Virginia in No. 1:10-cv-00910-LMB-TRJ, Judge Leonie M. Brinkema.

Decided: November 1, 2016

S. CALVIN WALDEN, Wilmer Cutler Pickering Hale and Dorr LLP, New York, NY, argued for plaintiff-appellant. Also represented by BRITTANY BLUEITT AMADI, GREGORY H. LANTIER, JAMES QUARLES III, Washington, DC.

BRIAN PANDYA, Wiley Rein, LLP, Washington, DC, argued for defendants-appellees. Also represented by SCOTT A. FELDER, JAMES HAROLD WALLACE, JR., ERIC HAROLD WEISBLATT.

Before NEWMAN, PLAGER, and REYNA, *Circuit Judges*.

Opinion for the court filed by *Circuit Judge* PLAGER.

Dissenting opinion filed by *Circuit Judge* REYNA.

PLAGER, *Circuit Judge*.

This is a patent case, in which the outcome turns on the application of the 'abstract idea' test, a judicially-created limitation on patent eligibility under § 101 of the Patent Act, 35 U.S.C. § 101.

Plaintiff-Appellant Amdocs (Israel) Limited ("Amdocs") sued Defendants-Appellees Openet Telecom, Inc. and Openet Telecom Ltd. (collectively, "Openet") for infringing four U.S. Patents, Nos. 7,631,065 ("'065 patent"); 7,412,510 ("'510 patent"); 6,947,984 ("'984 patent"); and 6,836,797 ("'797 patent"). In the wake of *Alice Corp. v. CLS Bank International*, 134 S. Ct. 2347 (2014), the district court granted Openet's motion for judgment on the pleadings, finding that the patents were not directed to patent eligible subject matter under § 101. Amdocs appeals.

For the reasons we shall explain, we reverse and remand for further proceedings.

BACKGROUND

Prosecution History and Technology

Although we need not recapitulate every detail of these patents, we describe them sufficiently for purposes of this opinion. Additional background is available in our opinion from the prior appeal in this case. *See Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 761 F.3d 1329, 1331–36 (Fed. Cir. 2014) ("*Amdocs I*").

The patents in suit concern, inter alia, parts of a system designed to solve an accounting and billing problem faced by network service providers. Each patent descends from U.S. Patent Application No. 09/442,876,

which issued as U.S. Patent No. 6,418,467. One of the patents in suit, the '797 patent, issued as a result of a continuation-in-part application, while the other three patents issued as a result of continuation applications.

The '065 patent concerns a system, method, and computer program for merging data in a network-based filtering and aggregating platform as well as a related apparatus for enhancing networking accounting data records. The '510 patent concerns a system, method, and computer program for reporting on the collection of network usage information. The '984 patent concerns a system and accompanying method and computer program for reporting on the collection of network usage information from a plurality of network devices. The '797 patent concerns a system, method, and computer program for generating a single record reflecting multiple services for accounting purposes.

Each patent's written description describes the same system, which allows network service providers to account for and bill for internet protocol ("IP") network communications. The system includes network devices; information source modules ("ISMs"); gatherers; a central event manager ("CEM"); a central database; a user interface server; and terminals or clients. *See, e.g.*, '065 patent at 4:29–33, 43–54.

Network devices represent any devices that could be included on a network, including application servers, and also represent the source of information accessed by the ISMs. *Id.* at 5:10–26. The ISMs act as an interface between the gatherers and the network devices and enable the gatherers to collect data from the network devices. *Id.* at 5:33–35. The ISMs represent modular interfaces that send IP usage data in real time from network devices to gatherers. *Id.* at 5:35–39. Gatherers can be hardware and software installed on the same network segment as a network device or on an application

server itself to minimize the data traffic impact on a network; gatherers "gather the information from the ISMs." *Id.* at 6:54, 58–64. Gatherers also normalize data from the various types of ISMs and serve as a distributed filtering and aggregation system. *Id.* at 7:5–8. The CEM provides management and control of the ISMs and gatherers, and the CEM can perform several functions including performing data merges to remove redundant data. *Id.* at 8:13–67. The central database is the optional central repository of the information collected by the system and is one example of a sink for the data generated by the system. *Id.* at 9:1–5. The user interface server allows multiple clients or terminals to access the system, and its primary purpose is to provide remote and local platform independent control for the system. *Id.* at 10:5–12.

Importantly, these components are arrayed in a distributed architecture that minimizes the impact on network and system resources. *Id.* at 3:56–65. Through this distributed architecture, the system minimizes network impact by collecting and processing data close to its source. *Id.* The system includes distributed data gathering, filtering, and enhancements that enable load distribution. *Id.* at 4:33–42. This allows data to reside close to the information sources, thereby reducing congestion in network bottlenecks, while still allowing data to be accessible from a central location. *Id.* at 4:35–39. Each patent 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. *See, e.g.*, *id.* at 4:39–42.

Procedural History

In 2010, Amdocs sued Openet for patent infringement in the United States District Court for the Eastern District of Virginia. Amdocs asserted that Openet infringed

claims 1, 4, 7, 13, and 17 of the '065 patent; claims 16, 17, and 19 of the '510 patent; claims 1, 2, 7, 8, and 13 of the '984 patent; and claims 1, 2, 7, 8, and 19 of the '797 patent.

In its answer and counterclaim, Openet alleged invalidity, unenforceability, and non-infringement. The parties filed motions addressing claim construction and summary judgment. The district court granted Openet's motion for summary judgment of non-infringement and Amdocs's motion for summary judgment of no inequitable conduct. Upon motions of the parties, which the court granted, certain claim constructions were made. However, the court denied the parties' motions for summary judgment with respect to validity. The court later issued an opinion explaining its bases for its non-infringement and inequitable conduct summary judgment rulings, while also providing its claim constructions. Amdocs appealed the trial court's judgment to this court.

On appeal, we affirmed two claim constructions and vacated and modified another construction. We approved of the district court's construction of "enhance" to mean "to apply a number of field enhancements in a distributed fashion." *Amdocs I*, 761 F.3d at 1338–40. In so doing, we approved of the district court's "reading the 'in a distributed fashion' and the 'close to the source' of network information requirements into the term 'enhance.'" *Id.* at 1340. We also approved of the construction of "completing" to mean "enhance a record until all required fields have been populated." *Id.*

However, we vacated the district court's construction of "single record represents each of the plurality of services" as "one record that includes customer usage data for each of the plurality of services used by the customer on the network" but not including records that aggregated usage data. *Id.* We substituted a plain meaning interpretation that allowed for the inclusion of a plurality of

services by aggregation. *Id.* at 1340–41. As a result, we reversed the grant of summary judgment with respect to the '065 patent, the '510 patent, and the '984 patent and vacated the grant of summary judgment with respect to the '797 patent. *Id.* at 1341–43.

During the time the case was before us on appeal from the district court, the Supreme Court issued its opinion in *Alice*. Following the remand from this court in *Amdocs I*, Openet moved for judgment on the pleadings by arguing that, pursuant to *Alice*, all asserted claims were ineligible under § 101. In response, Amdocs argued that Openet's motion was procedurally barred and contrary to the law of the case.

The district court permitted the motion because it had not resolved whether the patents were directed to ineligible subject matter under § 101 and because, even if the issue had been addressed, the court stated that *Alice* "represented a change, or a significant clarification, of the law." *Amdocs (Israel) Ltd. v. Openet Telecom, Inc.*, 56 F. Supp. 3d 813, 819 (E.D. Va. 2014).

In due course, the district court granted Openet's motion and invalidated the asserted claims of all four patents as ineligible under § 101. Amdocs appeals. We have jurisdiction pursuant to 28 U.S.C. § 1295(a)(1).

DISCUSSION

We review a grant of judgment on the pleadings under the procedural law of the regional circuit. *Allergan, Inc. v. Athena Cosmetics, Inc.*, 640 F.3d 1377, 1380 (Fed. Cir. 2011). The Fourth Circuit reviews a grant of judgment on the pleadings without deference, applying the same standard as a motion to dismiss pursuant to Fed. R. Civ. P. 12(b)(6). *Burbach Broad. Co. of Del. v. Elkins Radio Corp.*, 278 F.3d 401, 405–06 (4th Cir. 2002). Therefore, we assume the facts alleged in the complaint are true and draw all reasonable factual inferences in favor of the non-

movant. *Id.* We review the district court's determination of patent eligibility under § 101 without deference, as a question of law. *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1255 (Fed. Cir. 2014).

1.

The Doctrine: The statutory rule governing patent eligibility—that is, the criteria for identifying inventions that are eligible to be patented—is found in § 101 of the Patent Act. As recodified by Congress in 1952, § 101 provides that "[w]hoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title."

It is obvious that the subject matter described in § 101 is expansive. As the Supreme Court has observed, the "subject-matter provisions of the patent law have been cast in broad terms to fulfill the constitutional and statutory goal of promoting 'the Progress of Science and the useful Arts.'" *Diamond v. Chakrabarty*, 447 U.S. 303, 315 (1980) (quoting U.S. Const. art. I, § 8, cl. 8).

Despite this broad mandate, judicial gloss on the law of patent eligibility has long recognized that certain fundamental principles are not included in that broad statutory grant. Though over the years these principles have been described in differing terms, in today's vernacular these exceptions are called "[l]aws of nature, natural phenomena, and abstract ideas." *Alice*, 134 S. Ct. at 2354 (quotation marks and citation omitted); *see also Le Roy v. Tatham*, 55 U.S. 156, 183 (1853) (Nelson, J., dissenting) (tracing the "proper subject-matter of a patent" to at least the British case of *Boulton v. Bull*, 2 H. Bl. 463, 126 Eng. Rep. 651 (C.P. 1795)).

The two-step framework, set out by the Supreme Court for distinguishing patents that claim so-called laws

of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts, is now familiar law. *See Alice*, 134 S. Ct. at 2355 (following *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012)). This framework is sometimes collectively referred to as *Alice/Mayo*.

First, we determine whether "the claims at issue are directed to one of those patent-ineligible concepts." *Id.* If so, we next consider 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." *Id.* (quoting *Mayo*, 132 S. Ct. at 1298, 1297).

The Court describes step two of this analysis as a search for an "inventive concept"—i.e., an element or ordered combination of elements that is "sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself." *Id.* (quoting *Mayo*, 132 S. Ct. at 1294).

2.

The Cases: Our cases generally follow the step one/step two Supreme Court format, reserving step two for the more comprehensive analysis in search of the 'inventive concept.' Recent cases, however, suggest that there is considerable overlap between step one and step two, and in some situations this analysis could be accomplished without going beyond step one. *See Enfish, LLC, v. Microsoft Corp.*, 822 F.3d 1327, 1334–36 (Fed. Cir. 2016); *see also Elec. Power Grp., LLC v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016) ("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); *BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1349 (Fed. Cir. 2016) ("[T]he claims and their specific limitations do not readily lend them-

selves to a step-one finding that they are directed to a nonabstract idea. We therefore defer our consideration of the specific claim limitations' narrowing effect for step two.").

Whether the more detailed analysis is undertaken at step one or at step two, the analysis presumably would be based on a generally-accepted and understood *definition* of, or test for, what an 'abstract idea' encompasses. However, a search for a single test or definition in the decided cases concerning § 101 from this court, and indeed from the Supreme Court, reveals that at present there is no such single, succinct, usable definition or test. The problem with articulating a single, universal definition of 'abstract idea' is that it is difficult to fashion a workable definition to be applied to as-yet-unknown cases with as-yet-unknown inventions. That is not for want of trying; 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.[1]

Instead of a definition, then, the decisional mechanism courts now apply is to examine earlier cases in which a similar or parallel descriptive nature can be seen—what prior cases were about, and which way they were decided. *See*, *e.g.*, *Elec. Power Grp.*, 830 F.3d at

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[1] For examples, compare *In re Bilski*, 545 F.3d 943, 955–56 (Fed. Cir. 2008) (en banc), reaffirming 'machine-or-transformation' as *the* § 101 test for process claims, with *Bilski v. Kappos*, 561 U.S. 593, 604 (2010), indicating that 'machine-or-transformation' is perhaps one possible test, but not the only one. See also the several opinions in this court's *CLS Bank International v. Alice Corp.*, 717 F.3d 1269 (Fed. Cir. 2013) (en banc).

1353–54.[2] That is the classic common law methodology for creating law when a single governing definitional context is not available. *See generally* Karl N. Llewellyn, The Common Law Tradition: Deciding Appeals (1960). This more flexible approach is also the approach employed by the Supreme Court. *See Alice*, 134 S. Ct. at 2355–57. We shall follow that approach here.

The dissent, in its discussion of the majority opinion's approach, states that the analysis in which the majority engages involves a comparison "of the asserted claims in this case to the claims at issue in some, but not all, of the cases where we have addressed patent eligibility." Dissent at 1. As earlier noted, applying prior precedents of the court to the current case is indeed the common law approach for deciding cases, including patent cases—i.e., applying the law to comparable facts. *See, e.g.*, *Alice*, 134 S. Ct. at 2355–60 (relying on precedent with respect to step one and step two); *Elec. Power Grp.*, 830 F.3d at 1353–56 (same). Furthermore, discussing in an opinion only the most relevant prior opinions, rather than every prior opinion in an actively-litigated field, is a necessary discipline if opinions are to be read, rather than just written.

The dissent offers a different paradigm for identifying an abstract idea: "it is apparent that a desired goal (i.e., a

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[2] See also Robert W. Bahr, Deputy Comm'r for Patent Examination Policy, USPTO, Recent Subject Matter Eligibility Decisions (*Enfish, LLC v. Microsoft Corp. and TLI Commc'ns LLC v. A.V. Automotive, LLC*) (2016) at 2: "In summary, when performing an analysis of whether a claim is directed to an abstract idea (Step 2A), examiners are to continue to determine if the claim recites (i.e., sets forth or describes) a concept that is similar to concepts previously found abstract by the courts."

'result or effect'), absent structural or procedural means for achieving that goal, is an abstract idea." Dissent at 6–7. The dissent focuses on the difference between 'means' and 'ends.' *Id.* at 6. We note that, though not in terms of 'abstract idea' but rather adequacy of definition, years ago the Supreme Court outlawed such broad 'ends' or function claiming as inconsistent with the purposes of the Patent Statute.[3] Congress, however, a few years later softened the rule. Patentees could write claim language to broadly describe the purpose or function of their invention, and when they did the claim would not cover the bare function or goal, however performed, but only as limited to the particular means (and equivalents) for implementing that function or goal as described by the patentee in the patent's "specification."

This, of course, is the "means-plus-function" practice codified in 35 U.S.C. § 112 ¶ 6 (now § 112(f)). The dissent's paradigm would seem similar, but differs in significant respects. Though § 112 ¶ 6 permits the 'means' to be found in the patentee's "specification," meaning the written description and the claims of the patent, the dissent would save the patent's eligibility under § 101 only if the claim at issue itself explicitly states the necessary 'means.' In the dissent's step two, we must find "a particular means for accomplishing an underlying goal" through careful "limitation-by-limitation analysis" of the claim. *Id.* at 9. We commend the dissent for seeking a creative way of incorporating aspects of well-known doctrine in the search for what is an 'abstract idea,' but that is not now the law, either in statute or in court

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[3] *See Halliburton Oil Well Cementing Co. v. Walker*, 329 U.S. 1 (1946).

decision.[4] At best, as this court has previously stated, the dissent's analysis may be "one helpful way of double-checking the application of the Supreme Court's framework to particular claims—specifically, when determining whether the claims meet the requirement of an inventive concept *in application*." *Elec. Power Grp.*, 830 F.3d at 1356.

3.

We begin, then, with an examination of eligible and ineligible claims of a similar nature from past cases. For example, in *Digitech*, one of the representative claims described a process of organizing information through mathematical correlations with merely generic gathering and processing activities. *See Digitech Image Techs., LLC v. Elecs. for Imaging, Inc.*, 758 F.3d 1344, 1350 (Fed. Cir. 2014). The claim at issue:

> A method of generating a device profile that describes properties of a device in a digital image reproduction system for capturing, transforming or rendering an image, said method comprising:
>
> generating first data for describing a device dependent transformation of color information content of the image to a device independent color

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[4] We state our concern lest the dissent's generalizations of law may mislead the reader. In the complexities of § 101, the law is evolving into greater certitude based on experience, not on generalizations. Words out of context are less useful—especially if inapt. For example, the Court's rejection of Samuel Morse's notorious claim 8, regarding the use of electromagnetism, was for overbroad preemption of a natural law, not because it was an "abstract idea." *See, e.g.*, *Mayo*, 132 S. Ct. at 1294 (citing *O'Reilly v. Morse*, 56 U.S. 62, 112–20 (1854)).

> space through use of measured chromatic stimuli and device response characteristic functions;
>
> generating second data for describing a device dependent transformation of spatial information content of the image in said device independent color space through use of spatial stimuli and device response characteristic functions; and
>
> combining said first and second data into the device profile.

Id. at 1351 (quoting patent at issue).

While the court did not parse the analysis into discrete step one and step two stages, it found that this claim recited an "ineligible abstract process of gathering and combining data that does not require input from a physical device" and that "the two data sets and the resulting device profile are ineligible subject matter." *Id.* The court observed that "[w]ithout additional limitations, a process that employs mathematical algorithms to manipulate existing information to generate additional information is not patent eligible." *Id.* The court determined that the claim was ineligible.

Similarly, in *Content Extraction*, the court examined a representative claim reciting:

> 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.

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

Under step one, the court characterized all of the claims at issue (which were similar to the representative claim) as being directed to the abstract idea of "1) collecting data, 2) recognizing certain data within the collected data set, and 3) storing that recognized data in a memory." *Id.* at 1347. The court commented that data collection, recognition, and storage were "undisputedly well-known." *Id.* Under step two, the court found no limitations[5] that, considered alone and in an ordered combination, transformed the claim into a patent-eligible application of an abstract idea. *Id.* at 1347–48. The court observed that the role of a computer in a computer-implemented invention would only be meaningful in a § 101 analysis if it involved more than the performance of "well-understood, routine, [and] conventional activities previously known to the industry." *Id.* (quoting *Alice*, 134 S. Ct. at 2359). The court noted that all of the limitations

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[5] Though the Supreme Court does not uniformly adhere to the practice, this court often has used the term "limitation" to refer to requirements stated in a patent claim, and the term "element" to refer to the parts of an entity accused of infringing. We will follow that practice here.

at issue involved well-known, routine, and conventional functions of computers and scanners. *Id.* at 1348–49. The claims were ineligible.

More recently, in *In re TLI*, the court examined a representative claim that recited:

> A method for recording and administering digital images, comprising the steps of:
>
> recording images using a digital pick up unit in a telephone unit,
>
> storing the images recorded by the digital pick up unit in a digital form as digital images,
>
> transmitting data including at least the digital images and classification information to a server, wherein said classification information is prescribable by a user of the telephone unit for allocation to the digital images,
>
> receiving the data by the server,
>
> extracting classification information which characterizes the digital images from the received data, and
>
> storing the digital images in the server, said step of storing taking into consideration the classification information.

In re TLI Commc'ns LLC Patent Litig., 823 F.3d 607, 610 (Fed. Cir. 2016).

Under step one, the court found that the claims were directed to the abstract idea of "classifying and storing digital images in an organized manner." *Id.* at 613. Also under step one, the court found that the claims were not directed to a specific improvement in computer functionality, but instead were directed to the "use of conventional or generic technology in a nascent, but well-known environment, without any claim that the invention reflect[ed]

an inventive solution to any problem presented by combining the two." *Id.* at 612. Under step two, the court found that the claims did not recite any limitations that when considered individually and as an ordered combination transformed the abstract idea into a patent-eligible application of that idea. Instead, the recited components and functions were well-understood, routine, conventional activities previously known in the industry. *See id.* at 613–14. The components were described in "vague, functional" terms that were insufficient to confer eligibility and failed to provide the requisite details to implement the claimed abstract idea. *Id.* at 615.

The ineligible claims in the preceding cases[6] may be contrasted with eligible claims in other cases. For example, in *DDR Holdings*, the court found that the asserted claims did not recite a step or function performed by a computerized mathematical algorithm but were instead focused on a challenge particular to the Internet. *DDR Holdings*, 773 F.3d at 1257. The representative claim recited:

> A system useful in an outsource provider serving web pages offering commercial opportunities, the system comprising:

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[6] For additional examples of ineligible claims post-*Alice*, see, e.g., *FairWarning IP, LLC v. Iatric Systems, Inc.*, No. 15-1985, 2016 WL 5899185 (Fed. Cir. Oct. 11, 2016); *Intellectual Ventures I LLC v. Symantec Corp.*, No. 15-1769, 2016 WL 5539870 (Fed. Cir. Sept. 30, 2016); *Affinity Labs of Texas, LLC v. DirecTV, LLC*, No. 15-1845, 2016 WL 5335501 (Fed. Cir. Sept. 23, 2016); *Affinity Labs of Texas, LLC v. Amazon.com Inc.*, No. 15-2080, 2016 WL 5335502 (Fed. Cir. Sept. 23, 2016); *Electric Power Group*, 830 F.3d 1350.

(a) a computer store containing data, for each of a plurality of first web pages, defining a plurality of visually perceptible elements, which visually perceptible elements correspond to the plurality of first web pages;

(i) wherein each of the first web pages belongs to one of a plurality of web page owners;

(ii) wherein each of the first web pages displays at least one active link associated with a commerce object associated with a buying opportunity of a selected one of a plurality of merchants; and

(iii) wherein the selected merchant, the out-source 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.

Id. at 1249–50.

The court observed that the "claimed solution [was] necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks." *Id.* at 1257. Analyzing the claims under step two, the court noted when the claim limitations were taken together as an ordered combination, they recited an invention that was not merely "the routine or conventional use of the Internet." *Id.* at 1259.

More recently, in *BASCOM*, the court examined several claims including the following claim:

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

BASCOM, 827 F.3d at 1345.

In *BASCOM*, the court found that the claims were directed to an abstract idea under step one. *Id.* at 1347–49. Under step two, the court construed the claims in favor of

the non-movant and found that the limitations of the claims, taken individually, recited generic computer, network, and Internet components which were not inventive by themselves. *Id.* at 1349–52. However, the court found that the ordered combination of these limitations provided the requisite inventive concept. *Id.* The claimed and described inventive concept was the "installation of a filtering tool at a specific location, remote from the end-users, with customizable filtering features specific to each end user." *Id.* at 1350. This design permitted the filtering tool to have "both the benefits of a filter on a local computer and the benefits of a filter on the [Internet Service Provider] server." *Id.* This was not conventional or generic, and the claims did not preempt all ways of filtering content on the Internet—instead, the patent claimed and explained how a particular arrangement of elements was "a technical improvement over prior art ways of filtering such content." *Id.* The court thus distinguished ineligible "abstract-idea-based solutions[s] implemented with generic technical components in a conventional way" from the eligible "technology-based solution" and "'software-based invention[ ] that improve[s] the performance of the computer system itself.'" *Id.* at 1351 (citation omitted). The court therefore vacated the district court's dismissal under Fed. R. Civ. P. 12(b)(6).[7]

4.

With this background in mind, we turn to an examination of the claims in the patents at issue to determine whether the trial court was correct in ruling them all to be invalid under § 101. In addition to taking into consid-

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[7] For additional examples of eligible claims post-*Alice*, see *McRO, Inc. v. Bandai Namco Games America Inc.*, No. 15-1080, 2016 WL 4896481 (Fed. Cir. Sept. 13, 2016); *Enfish*, 822 F.3d 1327.

eration the approved claim constructions, we examine the claims in light of the written description. *See, e.g.*, *Enfish*, 822 F.3d at 1335 (applying step one involves considering the claims "in light of the specification"); *In re TLI Commc'ns*, 823 F.3d at 611–15 (examining the claims in light of the written description under steps one and two).

a. '065 Patent

Amdocs asserted claims 1, 4, 7, 13, and 17 of the '065 patent. Claim 1 is representative:

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

'065 patent at 16:4–14.

Under step one, the district court determined that this claim was directed to the abstract idea of "correlating two network accounting records to enhance the first record." *Amdocs*, 56 F. Supp. 3d at 820. Under step two, the district court found that claim 1 did not add a sufficient 'inventive concept' to confer eligibility.

We recognize, as the district court recognized, that "[*a*]*t some level*, 'all inventions . . . embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.'" *Alice*, 134 S. Ct. at 2354 (quoting *Mayo*, 132 S. Ct. at 1293) (emphasis added). What relative level

of abstraction should we employ? From a macroscopic perspective, claim 1 could be described as focusing on correlating two network accounting records to enhance the first record. Claim 1 could also be described in several other ways—such as focusing on a computer program that includes computer code for receiving initial information, for correlating that initial information with additional information, and for using that additional information to enhance the initial information.

We have previously explained that somewhat (at least facially) similar claims do not satisfy § 101—under either step one or step two. *See, e.g.*, *Digitech*, 758 F.3d at 1350 (abstract idea of "organizing information through mathematical correlations"); *Content Extraction*, 776 F.3d at 1347 (abstract idea of "1) collecting data, 2) recognizing certain data within the collected data set, and 3) storing that recognized data in a memory"); *In re TLI Commc'ns*, 823 F.3d at 613 (abstract idea of "classifying and storing digital images in an organized manner").

In contrast, we have found eligibility when somewhat facially-similar claims are directed to an improvement in computer functionality under step one, *see Enfish*, 822 F.3d at 1335, or recite a sufficient inventive concept under step two—particularly when the claims solve a technology-based problem, even with conventional, generic components, combined in an unconventional manner. *See DDR Holdings*, 773 F.3d at 1256–59; *see also BASCOM*, 827 F.3d at 1349–52.

In this case, the claims are much closer to those in *BASCOM* and *DDR Holdings* than those in *Digitech*, *Content Extraction*, and *In re TLI Commc'ns*. Indeed, even if we were to agree that claim 1 is directed to an ineligible abstract idea under step one, the claim is eligible under step two because it contains a sufficient 'inventive concept.' Claim 1 requires "computer code for using the accounting information with which the first

network accounting record is correlated to enhance the first network accounting record." '065 patent at 16:12–14. In *Amdocs I*, we construed "enhance" as being dependent upon the invention's distributed architecture. 761 F.3d at 1338–40 (quoting '065 patent at 7:51–57, 10:45–50, 7:7–8). We construed "enhance" as meaning "to apply a number of field enhancements in a distributed fashion." *Id.* at 1340. We took care to note how the district court explained that "[i]n this context, 'distributed' means that the network usage records are processed close to their sources before being transmitted to a centralized manager." *Id.* at 1338. And we specifically approved of the district court's "reading the 'in a distributed fashion' and the 'close to the source' of network information requirements into the term 'enhance.'" *Id.* at 1340.

As explained by the patent, this distributed enhancement was a critical advancement over the prior art:

> Importantly, the distributed data gathering, filtering and enhancements performed in the system 100 enables load distribution. Granular data can reside in the peripheries of the system 100, close to the information sources. This helps avoids [(*sic*)] reduce congestion in network bottlenecks but still allows the data to be accessible from a central location. In previous systems, all the network information flows to one location, making it very difficult to keep up with the massive record flows from the network devices and requiring huge databases.

'065 patent at 4:33–42.

In other words, this claim entails an unconventional technological solution (enhancing data in a distributed fashion) to a technological problem (massive record flows which previously required massive databases). The solution requires arguably generic components, including network devices and "gatherers" which "gather" infor-

mation. However, the claim's enhancing limitation necessarily requires that these generic components operate in an unconventional manner to achieve an improvement in computer functionality.

The enhancing limitation depends not only upon the invention's distributed architecture, but also depends upon the network devices and gatherers—even though these may be generic—working together in a distributed manner. The patent explains that field enhancements are defined by network service providers for each field in which the network service provider wants to collect data. '065 patent at 12:43–47. "A field enhancement specifies how the data obtained from the trigger of the enhancement procedure is processed before it is placed in a single field in the central database 175." *Id.* at 11:2–5.

> Typically, data collected from a single source does not contain all the information needed for billing and accounting, such as user name and organization. In such cases, the data is enhanced. By combining IP session data from multiple sources, such as authentication servers, DHCP and Domain Name servers, the gatherers create meaningful session records tailored to the [network service provider's] specific requirements.

Id. at 7:51–57.

The gatherers provide enhancement. *Id.* at 10:45–48 ("As mentioned above, the gatherers 220 provide data enhancement features to complete information received from the ISMs 210."). The gatherers also operate in a distributed fashion, *id.* at 4:33–42, and the gatherers depend upon the ISMs which receive information from network devices, *id.* at 5:10–26. Claim 1 includes the enhancing limitation which is individually sufficient for eligibility. But this enhancing limitation necessarily involves the arguably generic gatherers, network devices, and other components working in an unconventional

distributed fashion to solve a particular technological problem.

Claim 1 is therefore distinct from the ineligible claims in *Digitech*, *Content Extraction*, and *In re TLI Commc'ns*. The claim in *Digitech* was not tied to any particularized structure, broadly preempted related technologies, and merely involved combining data in an ordinary manner without any inventive concept. *See* 758 F.3d at 1350–51. In contrast, claim 1 of the '065 patent is tied to a specific structure of various components (network devices, gatherers, ISMs, a central event manager, a central database, a user interface server, and terminals or clients). It is narrowly drawn to not preempt any and all generic enhancement of data in a similar system, and does not merely combine the components in a generic manner, but instead purposefully arranges the components in a distributed architecture to achieve a technological solution to a technological problem specific to computer networks. *See* '065 patent at 4:29–33, 4:43–54, 3:56–65, 4:33–42, 7:51–57, 10:45–50, 7:7–8, 7:62–67, 11:1–7.

Similarly, claim 1 is distinct from the representative claim in *Content Extraction*, which involved the generic, well-known steps of collecting data, recognizing data, and storing data. *See* 776 F.3d at 1347. Unlike the claim in *Content Extraction*, claim 1 of the '065 patent depends upon a specific enhancing limitation that necessarily incorporates the invention's distributed architecture—an architecture providing a technological solution to a technological problem. This provides the requisite 'something more' than the performance of "well-understood, routine, [and] conventional activities previously known to the industry." *See id.* at 1347–48 (quoting *Alice*, 134 S. Ct. at 2359).

Claim 1 is similar to the claims in *DDR Holdings* and *BASCOM*. As in *DDR Holdings*, when the claim limitations were considered individually and as an ordered

combination, they recited an invention that is not merely the "routine or conventional use" of technology. 773 F.3d at 1259. Here, claim 1 solves a technological problem (massive data flows requiring huge databases) akin to the problem in *DDR Holdings* (conventional Internet hyperlink protocol preventing websites from retaining visitors). *Cf. Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1371 (Fed. Cir. 2015). Claim 1 involves some arguably conventional components (e.g., gatherers), but the claim also involves limitations that when considered individually and as an ordered combination recite an inventive concept through the system's distributed architecture.

Claim 1 is also like the claims in *BASCOM* because even though the system in the '065 patent relies upon some arguably generic limitations, when all limitations are considered individually and as an ordered combination, they provide an inventive concept through the use of distributed architecture. This is similar to the design in *BASCOM* which permitted the invention to have a filtering tool with the benefits of a filter on a local computer and the benefits of a filter on an ISP server. The benefits in *BASCOM* were possible because of customizable filtering features at specific locations remote from the user. Similarly, the benefits of the '065 patent's claim 1 are possible because of the distributed, remote enhancement that produced an unconventional result—reduced data flows and the possibility of smaller databases. This arrangement is not so broadly described to cause preemption concerns. Instead, it is narrowly circumscribed to the particular system outlined. As in *BASCOM*, this is a technical improvement over prior art technologies and served to improve the performance of the system itself.

For all these reasons, and with the understanding that claim 1 is representative, we reverse the district court's judgment that claims 1, 4, 7, 13, and 17 of the '065 patent are ineligible under § 101.

b. '510 Patent

Amdocs asserted claims 16, 17, and 19 of the '510 patent. Claim 16 is representative:

> 16. A computer program product stored in a computer readable medium for reporting on a collection of network usage information from a plurality of network devices, comprising:
>
> computer code for collecting network communications usage information in real-time from a plurality of network devices at a plurality of layers;
>
> computer code for filtering and aggregating the network communications usage information;
>
> computer code for completing a plurality of data records from the filtered and aggregated network communications usage information, the plurality of data records corresponding to network usage by a plurality of users;
>
> computer code for storing the plurality of data records in a database;
>
> computer code for submitting queries to the database utilizing predetermined reports for retrieving information on the collection of the network usage information from the network devices; and
>
> computer code for outputting a report based on the queries;
>
> wherein resource consumption queries are submitted to the database utilizing the reports for retrieving information on resource consumption in a network; and
>
> wherein a resource consumption report is outputted based on the resource consumption queries.

'510 patent at 17:3–29.

This claim is eligible for patenting for reasons similar to those that undergirded the eligibility of the '065 patent claims. In this instance, the district court concluded under step one that claim 16 was directed to an abstract idea—"using a database to compile and report on network usage information" without any sufficient 'inventive concept' under step two. *Amdocs*, 56 F. Supp. 3d at 822–23. However, contrary to the district court's analysis, even if claim 16 were directed to an abstract idea under step one, the claim is eligible under step two.

Claim 16 requires, inter alia, that the network usage information is collected in real-time from a plurality of network devices at a plurality of layers and is filtered and aggregated before being completed into a plurality of data records. In *Amdocs I*, we approved of the district court's construction of "completing" to mean "enhance a record until all required fields have been populated," in which "enhance" carried the same meaning as the same term in the '065 patent. 761 F.3d at 1340.

The collection, filtering, aggregating, and completing steps all depend upon the invention's unique distributed architecture—the same architecture outlined in our earlier analysis of the '065 patent. An understanding of how this is accomplished is only possible through an examination of the claims in light of the written description.

The written description explains that the distributed architecture allows the system to efficiently and accurately collect network usage information in a manner designed for efficiency to minimize impact on network and system resources. This enables load distribution, and that is an advantage over the prior art because it makes it easier to keep up with record flows and allows for smaller databases. '510 patent at 3:60–65 ("The system is based on a modular, distributed, highly scalable architecture capable of running on multiple platforms. Data collection

and management is designed for efficiency to minimize impact on the network and system resources. The system minimizes network impact by collecting and processing data close to its source."), 4:20–21 ("Distributed filtering and aggregation eliminates system capacity bottlenecks."), 4:35–44 ("Importantly, the distributed data gathering, filtering and enhancement performed in the system 100 enables load distribution. Granular data can reside in the peripheries of the system 100, close to the information sources. This helps avoids [(*sic*)] reduce congestion in network bottlenecks but still allows the data to be accessible from a central location. In previous systems, all the network information flows to one location, making it very difficult to keep up with the massive record flows from the network devices and requiring huge databases."), 7:8–25 (describing how the gatherers act as a distributed filtering and aggregation system and how this improves scalability and efficiency of the system by reducing the volume of data sent to the CEM).

With this understanding, it is clear that even if claim 16 were viewed as being directed to an abstract idea under step one—rather than to an improvement in computer functionality—claim 16 satisfies step two. The collection, filtering, aggregating, and completing (including enhancing) steps all depend upon the system's unconventional distributed architecture. While some individual limitations arguably may be generic, others are unconventional and the ordered combination of these limitations yields an inventive concept sufficient to confer eligibility without undue preemption. The claim recites a technological solution to a technological problem specific to computer networks—an unconventional solution that was an improvement over the prior art. The claim is therefore more similar to the eligible claims in *DDR Holdings* and *BASCOM* than the ineligible claims in *Digitech*, *Content Extraction*, and *In re TLI Commc'ns*.

For those reasons, and with the understanding that claim 16 is representative, we reverse the district court's judgment that claims 16, 17, and 19 of the '510 patent are ineligible under § 101.

c. '984 Patent

Amdocs alleged infringement of claims 1, 2, 7, 8, and 13 of the '984 patent. Claim 1 is representative:

> 1. A method for reporting on the collection of network usage information from a plurality of network devices, comprising:
>
> (a) collecting network communications usage information in real-time from a plurality of network devices at a plurality of layers utilizing multiple gatherers each including a plurality of information source modules each interfacing with one of the network devices and capable of communicating using a protocol specific to the network device coupled thereto, the network devices selected from the group consisting of routers, switches, firewalls, authentication servers, web hosts, proxy servers, netflow servers, databases, mail servers, RADIUS servers, and domain name servers, the gatherers being positioned on a segment of the network on which the network devices coupled thereto are positioned for minimizing an impact of the gatherers on the network;
>
> (b) filtering and aggregating the network communications usage information;
>
> (c) completing a plurality of data records from the filtered and aggregated network communications usage information, the plurality of data records corresponding to network usage by a plurality of users;

> (d) storing the plurality of data records in a database;
>
> (e) allowing the selection of one of a plurality of reports for reporting purposes;
>
> (f) submitting queries to the database utilizing the selected reports for retrieving information on the collection of the network usage information from the network devices; and
>
> (g) outputting a report based on the queries.

'984 patent at 15:31–63.

Claim 1 is eligible for patenting for reasons similar to those already discussed with respect to the '065 and '510 patents. The district court concluded that claim 1 was directed to the abstract idea of "reporting on the collection of network usage information from a plurality of network devices" under step one and did not satisfy step two. *Amdocs*, 56 F. Supp. 3d at 824–25. However, even if we were to accept the district court's conclusion regarding step one, the claim is eligible under step two.

Claim 1 requires the completion of a plurality of data records in a manner that depends upon enhancement—which depends upon the system's distributed architecture, as explained previously. Similarly, claim 1 requires collecting, filtering, and aggregating information in a manner that also depends upon the system's distributed architecture. Claim 1 is therefore eligible for the same reasons that supported eligibility with respect to claim 16 of the '510 patent. The written description in both patents describes the collection, filtering, and aggregation in terms of the invention's distributed architecture. *See, e.g.*, '984 patent at 3:28–32, 3:56–57, 4:3–13, 6:45–54. Although some of the components and functions may appear generic, several limitations are individually unconventional (e.g., completing depends upon distributed enhancing) and the overall ordered combination of all of the

limitations was unconventional. It produced the advantage over the prior art by solving the technological problem at stake.

For those reasons, and with the understanding that claim 1 is representative, we reverse the district court's judgment that claims 1, 2, 7, 8, and 13 of the '984 patent are ineligible under § 101.

d. '797 Patent

Amdocs alleged infringement of claims 1, 2, 7, 8, and 19 of the '797 patent. Claim 1 is representative:

> 1. A method for generating a single record reflecting multiple services for accounting purposes, comprising:
>
> (a) identifying a plurality of services carried out over a network;
>
> (b) collecting data describing the plurality of services; and
>
> (c) generating a single record including the collected data, wherein the single record represents each of the plurality of services;
>
> wherein the services include at least two services selected from a group consisting of a hypertext transfer protocol (HTTP) session, an electronic mail session, a multimedia streaming session, a voice over Internet Protocol (IP) session, a data communication session, an instant messaging session, a peer-to-peer network application session, a file transfer protocol (FTP) session, and a telnet session;
>
> wherein the data is collected utilizing an enhancement procedure defined utilizing a graphical user interface by:

> listing a plurality of available functions to be applied in real-time prior to end-user reporting,
>
> allowing a user to choose at least one of a plurality of fields, and
>
> allowing the user to choose at least one of the listed functions to be applied to the chosen field in real-time prior to the end-user reporting.

'797 patent at 16:30–37 and '797 Certificate of Correction.

Here again claim 1 is eligible for patenting for reasons similar to those discussed with respect to the claims in the '065, '510, and '984 patents. The district court found that claim 1 was directed to the abstract idea of "generat[ing] a single record reflecting multiple services" under step one, without a sufficient 'inventive concept' under step two. *See Amdocs*, 56 F. Supp. 3d at 823–24. However, as with the other patents, even if we were to accept the district court's step one conclusion, the claim is eligible under step two.

As with the other patents, the collecting, generating, and enhancement procedure required by claim 1 all depend upon the system's distributed architecture. Regarding collection, see, e.g., '797 patent at 5:39–45 ("The system is based on a modular, distributed, highly scalable architecture capable of running on multiple platforms. Data collection and management is designed for efficiency to minimize impact on the network and system resources. The system minimizes network impact by collecting and processing data close to its source.").

Regarding generating, we specifically construed the language "single record represents each of the plurality of services" as "one record that includes customer usage data for each of the plurality of services used by the customer on the network" such that the language allowed for the inclusion of a plurality of services by aggregation. *Amdocs I*, 761 F.3d at 1340–41. Aggregation depends

upon the invention's distributed architecture. *See, e.g.*, '797 patent at 6:1–2 ("Distributed filtering and aggregation eliminates system capacity bottlenecks."), 8:64–67 ("The distributed data filtering and aggregation eliminates capacity bottlenecks improving the scalability and efficiency of the system 800 by reducing the volume of data sent on the network to the CEM 870."), 9:1–4 ("Aggregation can be done by accumulating groups of data record flows, generating a single data record for each group. That single record then includes the aggregated information. This reduces the flow of the data records."), 9:36–40 ("The filtering and aggregation reduces the amount of data that is stored in the central database 875 while not jeopardizing the granularity of data that is necessary in order to create creative usage-based products.").

Finally, enhancement procedures are described in terms of enhancement. *See, e.g.*, *id.* at 9:41–61 (describing enhancement procedures in the context of enhancements). Enhancement in the '797 patent, as in every other patent at issue, depends upon the distributed nature of the system. *See, e.g.*, *id.* at 6:16–26 ("Importantly, the distributed data gathering, filtering and enhancements performed in the system 800 enables load distribution. Granular data can reside in the peripheries of the system 800, close to the information sources. This helps avoids [(*sic*)] reduce congestion in network bottlenecks but still allows the data to be accessible from a central location. In previous systems, all the network information flows to one location, making it very difficult to keep up with the massive record flows from the network devices and requiring huge databases.").

Similar to the other examined claims in the patents at issue, representative claim 1 recites a series of limitations that, when considered individually and as an ordered combination, provide an inventive concept sufficient to confer eligibility. While the components and functionality

necessarily involved in the '797 patent (e.g., ISMs, gatherers, network devices, collection, aggregation, and enhancement) may be generic at first blush, an examination of the claim in light of the written description reveals that many of these components and functionalities are in fact neither generic nor conventional individually or in ordered combination. Instead, they describe a specific, unconventional technological solution, narrowly drawn to withstand preemption concerns, to a technological problem.

For those reasons, and with the understanding that claim 1 is representative, we reverse the district court's judgment that claims 1, 2, 7, 8, and 19 of the '797 patent are ineligible under § 101.

SUMMARY

The dissent criticizes the majority for "avoid[ing] determining whether the asserted claims are directed to an abstract idea, or even identifying what the underlying abstract idea is." Dissent at 2. In fact, with regard to each of the challenged patents we identified the abstract idea that the district court found to be disqualifying. For argument's sake we accepted the district court's view of the disqualifying abstract ideas, and in each instance we then explained why, in our view, the claims seen in their entirety are not disqualified. The *Alice*/*Mayo* framework does not require more.

The dissent concedes that the written description discloses a network monitoring system "eligible for patenting. The specifications disclose a distributed system architecture comprising special-purpose components configured to cooperate with one another according to defined protocols . . . . The disclosed system is patent eligible." Dissent at 12. We agree. Unlike the dissent, however, we find the claims at issue, understood in light of that written description, to be eligible for patenting. To be clear: ruling these claims to be patent-eligible does not

mean that they are valid; they have yet to be tested under the statutory conditions for patentability, e.g., §§ 102 (novelty) and 103 (non-obvious subject matter), and the requirements of § 112 (written description and enablement), issues raised in Openet's defensive pleadings.

CONCLUSION

Accordingly, we reverse the district court's judgment that the claims at issue in the '065, '510, '984, and '797 patents are invalid under § 101 of the Patent Act.

We remand for the trial court to undertake further proceedings as called for by the issues as yet unaddressed, and such other proceedings as the court may deem appropriate.

REVERSED AND REMANDED

No costs.

United States Court of Appeals for the Federal Circuit

AMDOCS (ISRAEL) LIMITED,
Plaintiff-Appellant

v.

OPENET TELECOM, INC.,
OPENET TELECOM LTD.,
Defendants-Appellees

2015-1180

Appeal from the United States District Court for the Eastern District of Virginia in No. 1:10-cv-00910-LMB-TRJ, Judge Leonie M. Brinkema.

REYNA, *Circuit Judge*, dissenting.

The majority finds that the claims of all four asserted patents are directed to eligible subject matter. To make its determination, the majority undertakes "to examine earlier cases in which a parallel descriptive nature can be seen—what prior cases were about and which way they were decided." Majority Op. at 9–10. In application, the majority's approach involves the mechanical comparison of the asserted claims in this case to the claims at issue in some, but not all, of the cases where we have addressed patent eligibility after the Supreme Court's decision in *Alice Corp. v. CLS Bank Int'l*, 134 S. Ct. 2347, 2355 (2014).

The majority avoids determining whether the asserted claims are directed to an abstract idea, or even identifying what the underlying abstract idea is. I believe that approach to section 101 is contrary to the Supreme Court's direction in *Alice*, 134 S. Ct. at 2355 ("First, we determine whether the claims at issue are directed to one of those patent-ineligible concepts."). Declining to engage in the step 1 inquiry also ignores and undermines this court's holdings in *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016), *McRO, Inc. v. Bandai Namco Games Am Inc.*, No. 2015-1080, 2016 WL4896481 (Fed. Cir. Sept. 13, 2016), *Affinity Labs of Texas, LLC v. DirecTV, LLC*, No. 2015-1845, 2016 WL 5335501 (Fed. Cir. Sept. 23, 2016), and *Affinity Labs of Texas, LLC v. Amazon.com Inc.*, No. 2015-2080, 2016 WL 5335502 (Fed. Cir. Sept. 23, 2016).

The majority also relies on the specification to import innovative limitations into the claims at issue. For each of the four patents at issue, the majority's eligibility determination rests on the use of a "distribution architecture." As explained below, however, this limitation is insufficient to satisfy *Alice* step two. Indeed, that limitation does not exist in all of the claims at issue. This contravenes the fundamental principal that the section 101 inquiry is about whether the claims are directed to a patent-eligible invention, not whether the specification is so directed. *See Synopsys, Inc. v. Mentor Graphics Corp.*, No. 2015-1599 *20–21 (Oct. 17, 2016) ("The § 101 inquiry must focus on the language of the Asserted Claims themselves. . . . complex details from the specification cannot save a claim directed to an abstract idea that recites generic computer parts.") (citing *Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1345 (Fed. Cir. 2013)).

Because I do not agree that the '065 and '797 patents are § 101 eligible, nor with the basis expressed by the

majority for finding all four patents subject matter eligible under § 101, I *dissent*.

BACKGROUND

The patents-in-suit disclose a system for monitoring activity on computer networks and for creating accounting records reflecting the activity.[1] The system gathers raw activity data from various devices on the network (e.g., "routers, switches, firewalls, authentication servers, LDAP, Web hosts, DNS, and other devices"), and it uses that raw activity data to derive the desired accounting records. '984 patent at col. 2 l. 65–col. 3 l. 11. In certain embodiments, the system stores the records in a central database, which the network provider can use, for example, for purposes such as billing, operational support, fraud detection, network monitoring, traffic engineering, and the like. *Id.* at col. 3 ll. 20–27, col. 8 l.40–col. 9 l. 41; '797 patent at col. 3–16-20.

Rather than storing all the raw data in a central database, as in prior art systems, the disclosed system uses a distributed architecture to process the raw data in parallel, closer to the points of collection. The system associates a distinct Information Source Module ("ISM") with each network device that records relevant activity data. *Id.* at col. 5 ll. 3–17. The network devices include any devices in the network. *Id.* at col. 4 ll. 49–50. The ISMs are software components that "represent modular, abstract interfaces that are designed to be platform neutral." *Id.* at col. 5 ll. 6–8.

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[1] All the patents are descendant from U.S. Pat. No. 6,418,467 and they share its common specification, with some variation not relevant here. The '797 patent is a continuation-in-part that contains additional disclosure concerning the content of the accounting records. *See* '797 patent at col. 2 l. 33–col. 6 l. 9.

Each ISM collects data from the associated network device and passes the data to a respective "gatherer" component. *Id.* at col. 5 ll. 10–11. The gatherer component "can be any hardware and/or software," for gathering data from the ISMs and cooperating with other components to process the data to form the desired records. *Id.* at col. 6 ll. 25–31. To reduce the additional network traffic created by the monitoring, each gatherer is preferably placed logically or physically near the network devices from which it collects information. *Id.* at col. 6 ll. 32–35.

To derive the values necessary to create the desired accounting records, a gatherer may manipulate the raw data it receives from the ISM by filtering, aggregating, and/or "enhancing" the data. *Id.* at col. 6 ll. 25–col. 7 ll. 50, col. 10 ll. 13–col. 11 ll. 35. "Enhancing" includes "applying zero or more functions" to a value before storing the resulting value in a field of the record. *Id.* at col. 10 ll. 63–65. For instance, simply placing a raw value in the record is referred to as "one-step field enhancement." *Id.* at col. 10 ll. 66–67. In contrast, using the raw value to query another ISM for the value to place in the record is an example of "two-step field enhancement." *Id.* at col. 11 ll. 3–7. A gatherer may "enhance" the data through any number of steps.

A Central Event Manager ("CEM") provides centralized control and management of the system. *Id.* at col. 7 ll. 51–col. 8 ll. 39. The CEM provides a graphical user interface for system administrators to query the central database or to configure the system. *Id.* at col. 9 ll. 42–60. For example, administrators can use the user interface to define enhancement procedures for implementation by the gatherers and ISMs. *Id.* at col. 11 ll. 36–col. 13 ll. 30.

The patents explain that because the disclosed system distributes the work of collecting and processing the raw activity data among multiple components, it is able to

process more information more quickly than do previous designs, in which "all the [raw] network information flows to one location." *Id.* at col. 4 ll. 9–13. In contrast to these previous designs, the distributed architecture reduces the storage and computational resource requirements of the central repository, which need no longer "keep up with the massive record flows from the network devices" or maintain "huge databases." *Id.* at col. 4 ll. 7–13. Moreover, the distributed architecture reduces network traffic overhead "by reducing the volume of data sent on the network to the CEM." *Id.* at col. 6 ll. 49–50. The end result is a system that can monitor, process, and create database records reflecting network activity at large scale.

Network operators can use the ultimate records to get an accurate and dependable picture of network usage. The operators can use this information for any number of purposes, such as setting the right price for network services, implementing usage-based charging models, deploying new services based on usage trends, planning network resource provisioning, and usage auditing. *Id.* at col. 2 l. 65–col. 3 l. 27.

LEGAL FRAMEWORK

The Supreme Court has outlined a two-step framework for analyzing whether a claim is eligible. *See Alice*, 134 S. Ct. at 2355. First, we determine whether the claim at issue is directed to a judicial exception, such as an abstract idea. *Id.* If so, we next consider all the claim elements in combination to determine whether they recite an inventive concept sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the ineligible concept itself. *Id.* As this Court recently explained, this two-step formulation contemplates that step one is meaningful, and that a substantial class of claims are not directed to patent ineligible con-

cepts. *Enfish*, 822 F.3d at 1335; *see also McRO*, 2016 WL 4896481 at *7–10.

The *Alice* framework leaves open at least three questions: (1) what makes an idea "abstract"; (2) what it means for a claim to be "directed to" an abstract idea; and (3) what limitations provide an "inventive concept?" To answer these questions we first look to the foundational principles of the abstract idea exception.

For well over a century, the Supreme Court has repeatedly and consistently used the abstract idea exception to prevent patenting a result where "it matters not by what process or machinery the result is accomplished." *O'Reilly v. Morse*, 56 U.S. 62, 113 (1854). The Court has explained that a patent may issue "for the means or method of producing a certain result, or effect, and not for the result or effect produced." *Diamond v. Diehr*, 450 U.S. 175, 182 n.7 (1981). "A patent is not good for an effect, or the result of a certain process" because such patents "would prohibit all other persons from making the same thing by any means whatsoever." *Le Roy v. Tatham*, 55 U.S. 156, 175 (1853).

Hence, the abstract idea exception must be applied in a way that reserves patent protection for means rather than for ends and thus maintains the incentive of "some future inventor, in the onward march of science" to discover new ways of achieving the same result more cheaply and efficiently than has the patentee. *Morse*, 56 U.S. at 113; *see also Dolbear v. Am. Bell Tel. Co.*, 126 U.S. 1, 533 (1888) ("Other inventors may compete with him for the ways of giving effect to the discovery."). This basis of the abstract idea exception runs clear through the Supreme Court's jurisprudence from the nineteenth century to the present day.

Based on the Supreme Court's use of the abstract idea exception, it is apparent that a desired goal (i.e., a "result or effect"), absent structural or procedural means for

achieving that goal, is an abstract idea. Not every abstract idea is naturally phrased as a goal, and indeed, the Supreme Court has treated somewhat disparate ideas, such a "mathematical formula," *Gottschalk v. Benson*, 409 U.S. 63, 71 (1972), and a "fundamental economic practice," *Bilski v. Kappos*, 561 U.S. 593, 611 (2010), under the abstract idea rubric. Nevertheless, long-standing Supreme Court precedent clearly establishes that a desired goal without means for achieving that goal is an abstract idea. With this in mind, I turn back to the first step of the eligibility inquiry.

Step one of the eligibility inquiry asks whether the claim is "directed to" a judicial exception, such as an abstract idea. The answer is not automatically "yes" simply because a claim involves an abstract idea, and it is not automatically "no" simply because a claim recites limitations beyond the abstract idea. *See McRO*, 2016 WL 4896481 at *7. The Supreme Court has recognized that "[a]t some level, all inventions embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Alice*, 134 S. Ct. at 2354 (internal quotation marks and ellipses omitted). Unless step one is a nullity, the phrase "directed to" must therefore mean more than merely "embody, use, reflect, rest upon, or apply." At the same time, the phrase "directed to" must apply even where the claim does not wholly pre-empt the abstract idea. For example, it is well settled that the prohibition against patenting abstract ideas cannot be circumvented by limiting the use of the idea to a particular technological environment or adding insignificant extra-solution activity. *Bilski*, 561 U.S. at 610–11. Consequently, the step one inquiry cannot be settled in the affirmative by the observation of an underlying abstract idea nor in the negative by recitation of just any additional limitations.

Rather, the step one inquiry is a legal analysis that must focus on determining "what type of discovery is

sought to be patented." *Parker v. Flook*, 437 U.S. 584, 593 (1978). For example, a claim is "directed to" an abstract goal if the claim fails to describe *how*—whether by particular process or structure—the goal is accomplished.[2] Even if the claim recites additional limitations, the claim is nevertheless directed to the underlying goal if those limitations fail to restrict how the goal is accomplished. Conversely, where the claim recites specific structure or function for accomplishing the desired goal in a particular way, the claim is more likely directed to a means than to the underlying abstract goal. [3] *See McRO*, 2016 WL 48956481, at *8. In those cases, concerns of patent eligibility are resolved at step one, and there is no need to proceed to step two. *See Enfish*, 822 F.3d at 1339.

Post-*Alice*, we have only twice held that a patent was eligible under § 101 based on a determination during step one that the claims were not directed to an abstract idea. In *Enfish*, we held that the claims at issue were directed

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[2] The same concern applies regardless of how narrow the goal. *See Mayo*, 132 S. Ct. at 1302 (holding that even "narrow laws that may have limited applications" "nonetheless implicate this concern" of pre-emption); *buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1353 (Fed. Cir. 2014) ("exclusion applies if a claim involves a natural law or phenomenon or abstract idea, even if the particular natural law or phenomenon or abstract idea at issue is narrow").

[3] The terms "means" and "function," as used here, are not to be strictly understood in the context of "means plus function" claiming under 35 U.S.C. § 112(f). When considering whether a claim is directed to an abstract idea or is limited to a means of achieving an underlying abstract goal, we necessarily take into consideration whether the claim includes means-plus-function limitations.

to "a specific implementation of a solution to a problem in the software arts" designed to "improve the way a computer stores and retrieves data in memory," as opposed to an abstract idea implemented with general-purpose computer components. *Id.* In *McRO*, we held that the claims at issue were eligible under *Alice* step one because they were directed to "a specific asserted improvement in computer animation, i.e., the automatic use of rules of a particular type." *McRO*, 2016 WL 4896481 at *8. The scarcity of cases resolved under step one should not be interpreted as an indication that step one creates a particularly high bar.

The inquiry moves to the careful limitation-by-limitation analysis of step two, where there is a credible concern that the additional limitations fail to direct the claim to an eligible invention—e.g., a particular means for accomplishing an underlying goal—or to otherwise obviate concerns of pre-emption. The purpose of the step-two analysis is to ensure that the claim recites an "inventive concept," which the Supreme Court has defined as "an element or combination of elements that is sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself." *Alice*, 134 S. Ct. at 2355.

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. Accordingly, the Supreme Court has cautioned that "[t]he obligation to determine what type of discovery is sought to be patented must precede the determination of whether that discovery is, in fact, new or obvious." *Flook*, 437 U.S. at 593.

Claims that fail to recite how a desired goal is accomplished do not recite an inventive concept. For example, limitations on the context—as opposed to the manner—of accomplishing a desired result is typically not inventive, even if that context is novel. The Pythagorean Theorem cannot be made eligible by confining its use to existing surveying techniques, *Flook*, 437 U.S. at 590, nor can the business practice of hedging risk be patented by confining its use to the commodities and energy markets, *Bilski*, 561 U.S. at 612, nor the goal of "gathering and combining data" by confining its use to particular types of photographic information, *Digitech Image Technologies, LLC v. Electronics for Imaging, Inc.*, 758 F.3d 1344, 1351 (Fed. Cir. 2014). Even though such field-of-use limitations prevent a claim from wholly pre-empting an abstract idea, they are not *inventive* because they describe only the context rather than the manner of achieving a result. For similar reasons, limitations that recite only insignificant extra-solution activity also cannot supply an inventive concept because extra-solution activity, by definition, describes activity unrelated to how the solution is achieved. *See Flook*, 437 U.S. at 590; *see also Mayo*, 132 S. Ct. at 1300. It is therefore well established that "limiting an abstract idea to one field of use or adding token postsolution components [does] not make the concept patentable." *Bilski*, 561 U.S. at 612.

Illusory limitations, which describe only procedure or structure common to every means of accomplishing a given result, also cannot provide an inventive concept. Put another way, limitations that simply "comprise the abstract concept" are not inventive. *See Ultramercial Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014). For example, a claim cannot become eligible by reciting that physical automation is accomplished by a "machine" or that logical automation is accomplished by a "computer," *see OIP Technologies, Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363 (Fed. Cir. 2015), because physical automation

requires a machine and logical automation requires a computer. Because such elements cannot restrict a claim to a particular *way* of automating, recitation of a machine or computer "to lend speed or efficiency to the performance of an otherwise abstract concept does not meaningfully limit claim scope for purposes of patent eligibility." *CLS Bank Int'l v. Alice Corp.*, 717 F.3d 1269, 1286 (Fed. Cir. 2013).

Post-*Alice*, we have only once found that a claim's additional limitations provide an inventive concept. *See DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014).[4] In *DDR*, we held that "a specific *way* to automate the creation of a composite web page" was patent eligible even though the underlying abstract idea of "increasing sales by making two web pages look the same" was not. *DDR*, 773 F.3d at 1259 (emphasis added). In doing so, we distinguished our precedent on the basis that the *DDR* claims "do not broadly and generically claim 'use of the Internet'" to achieve the desired result, but instead "specify how interactions with the Internet are manipulated to yield a desired result." *Id.* at 1258. We cautioned that "not all claims purporting to address [technological] challenges are eligible for patent." *Id.* Instead, only claims specifying *how* to overcome those technological challenges are eligible.

In summary, the eligibility inquiry requires us to first determine whether the claim is "directed to" an abstract

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[4] In one recent case, we found that a patentee made allegations of an inventive step that, when unrebutted, were sufficient to survive a motion to dismiss for ineligibility under Fed. R. Civ. P. 12(b)(6). *Bascom Global Internet Services, Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1352 (Fed. Cir. 2016). Of course, the alleged infringer may yet prevail in invalidating the patent under section 101.

idea (such as a result) rather than to an application (such as a particular means of accomplishing that result). If the claim is clearly directed to an application, the inquiry may end. If doubt remains, the inquiry moves to step two, where we carefully consider all the implementation details to determine whether they define an inventive concept. The case law has identified several types of limitations that frequently fail to provide an inventive concept, including illusory limitations (e.g., generic computer implementation) and contextual limitations (e.g., field of use, extra-solution activity). The step-two inquiry is a flexible and fact-specific one focused on whether the claims unduly foreclose future innovation.

DISCUSSION

If I were to examine only the written description of the asserted patents, I would conclude that the network monitoring system disclosed therein is eligible for patenting. The specifications disclose a distributed system architecture comprising special-purpose components configured to cooperate with one another according to defined protocols in a user-configurable manner for the purpose of deriving useful accounting records in a more scalable and efficient manner than previously possible. The disclosed system improves upon prior art systems by creating a specific "distributed filtering and aggregation system . . . [that] eliminates capacity bottlenecks" through distributed processing. '984 patent at col. 6 ll. 45–50. The disclosed system is patent eligible.

But the inquiry is not whether the *specifications* disclose a patent-eligible system, but whether the *claims* are directed to a patent ineligible concept. *See Synopsys*, 2016 WL 6068920, at *8) ("The § 101 inquiry must focus on the language of the Asserted Claims themselves. . . . complex details from the specification cannot save a claim directed to an abstract idea that recites generic computer parts.") (citing *Accenture*, 728 F.3d at 1345); *Alice*, 134 S.

Ct. at 2355 ("First, we determine whether the claims at issue are directed to one of those patent-ineligible concepts."); *Diamond v. Diehr*, 450 U.S. 175, 189 (1981) ("In determining the eligibility of respondents' claimed process . . . , their claims must be considered as a whole."); *McRO*, 2016 WL 4896481 ("If the claims are "directed to" an abstract idea, then the inquiry proceeds to the second step . . . . In step two we consider whether the claims contain an 'inventive concept' . . . . To do so we look to both the claim as a whole and the individual claim elements. . . ."); *see also McCarty v. Lehigh Valley R.R. Co.*, 160 U.S. 110, 116 (1895) ("if we once begin to include elements not mentioned in the claim, in order to limit such claim . . . , we should never know where to stop").

Answering this inquiry requires a court to step through each claim to determine whether it is directed to an abstract idea, and if so, to determine whether the claim recites structural or procedural limitations sufficient to ensure that the claim "amounts to significantly more than a patent upon the ineligible concept itself." *Alice*, 134 S. Ct. at 2355.

A. '065 Patent

Amdocs asserted claims 1, 4, 7, 13, and 17 of the '065 patent. Claim 1 is representative:

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

record is correlated to enhance the first network accounting record.

The underlying goal of claim 1 is to combine particular information from two different sources. But the step one question is not whether claim 1 involves that abstract idea, but whether claim 1 is directed to it.

Claim 1 recites a software product embodied on a storage medium, but it provides no structural limitations of either the physical medium or the digital software. All software products are stored on a physical storage medium, and claim 1 recites no limitations concerning that physical structure. Likewise, claim 1 discusses only very broad, high-level functionality rather than details about how exactly that functionality is implemented, providing no information about the structure of the software. That the recited information concerns network accounting also provides no particular structure. Claim 1 is therefore not directed to any specific structure, whether physical or digital.

Rather than reciting structure, claim 1 defines the program product using only functional limitations. Looking at those limitations, I find no specific process for accomplishing the abstract goal of combining data from two sources. The recited software performs three steps: (1) receiving information from a first source, (2) correlating the information with information available from a second source, and (3) using that available information to "enhance" the first information. Under the district court's construction, to "enhance" includes simply retrieving and recording information in a field. The three steps therefore only "comprise the abstract concept" of combining data from different sources. *Ultramercial*, 772 F.3d at 715. Claim 1 is therefore directed to an abstract idea. Accordingly, the inquiry continues under step two.

Turning to step two, I see no limitations confining the claim to a particular means of combining information

from different sources. Limiting the abstract idea to the context in which the information relates to network accounting records is a field-of-use limitation that does not supply an inventive concept. *See Flook*, 437 U.S. at 590. The use of "computer code" to automate logic is likewise not an inventive concept because "recitation of generic computer limitations does not make an otherwise ineligible claim patent-eligible." *DDR Holdings*, 773 F.3d at 1256. The abstract idea of "gathering and combining data" with a computer is ineligible when only limited by the type of data. *See Digitech*, 758 F.3d at 1351. The concept of gathering and combining data is all that claim 1 recites.

Amdocs argues that the "enhance" step provides an inventive concept because the district court's construction of the term "enhance" requires applying zero or more functions "in a distributed fashion." Br. of Appellant at 59. Amdocs thus renews its argument from the trial proceedings that "the asserted claims are patentable, in part, due to the *manner in which* the claims facilitate the generation of network accounting records—i.e., 'in a distributed fashion.'" J.A. 1567 (emphasis original).

But the "distributed fashion" limitation cannot provide an inventive concept because it has no meaning in the context of claim 1. Claim 1 only requires adding a single piece of information to an accounting record, and it is unclear what doing this "in a distributed fashion" could mean. Moreover, claim 1 recites no components or structure over which the work might be "distributed."

I agree with the district court that claim 1 is ineligible because it fails to recite any structure or process limiting the claim to a particular means of combining accounting data from different sources. For that reason, I would *affirm* the district court's determination that claims 1, 4, 7, 13, and 17 of the '065 patent are ineligible.

B. '510 Patent

Amdocs asserted claims 16, 17, and 19 of the '510 patent. Claim 16 is representative:

> 16. A computer program product stored in a computer readable medium for reporting on a collection of network usage information from a plurality of network devices, comprising:
>
> computer code for collecting network communications usage information in real-time from a plurality of network devices at a plurality of layers;
>
> computer code for filtering and aggregating the network communications usage information;
>
> computer code for completing a plurality of data records from the filtered and aggregated network communications usage information, the plurality of data records corresponding to network usage by a plurality of users;
>
> computer code for storing the plurality of data records in a database;
>
> computer code for submitting queries to the database utilizing predetermined reports for retrieving information on the collection of the network usage information from the network devices; and
>
> computer code for outputting a report based on the queries;
>
> wherein resource consumption queries are submitted to the database utilizing the reports for retrieving information on resource consumption in a network; and
>
> wherein a resource consumption report is outputted based on the resource consumption queries.

In step one, the district court identified the abstract idea underlying claim 16 as "using a database to compile and report on network usage information." J.A. 22. I agree that this is the goal of the claimed invention. Indeed, the claim's preamble recites that the invention is for "reporting on a collection of network usage information." But again, the step 1 question is not whether claim 16 has a goal, but whether claim 16 is directed to that goal rather than to a means of achieving that goal.

As discussed above, one way for a claim to be directed to a means rather than to an abstract end is to recite process limitations defining a specific way of arriving at that end. *See Diehr*, 450 U.S. at 182–83 (holding that "a process may be patentable, irrespective of the particular form of the instrumentalities used"). Such limitations may obviate concerns of pre-emption because they leave room for future inventors to develop new paths to the same end without infringing the patent. *See Morse*, 56 U.S. at 113. Because § 101 is a "coarse eligibility filter," *Research Corp. Technologies v. Microsoft Corp.*, 627 F.3d 859, 869 (Fed. Cir. 2010), the recited way of accomplishing the goal need not be extensively detailed or even complete. Rather, it must meaningfully limit the claim to a manner of achieving the desired result without unduly foreclosing future innovation.

Amdocs argues that claim 16 is eligible because it recites procedural limitations, including "filtering and aggregating" "in real time . . . at a plurality of layers," and using the filtered and aggregated information to "complete" data records "in a distributed fashion." Br. of Appellant at 52–53. It therefore argues that the claims "prescribe a particular inventive ***manner*** by which network accounting information is collected, processed, and transformed into meaningful records." *Id.* at 53–54 (emphasis original). I agree.

The disclosed invention improves upon the manner in which prior art systems collected and processed network usage information. Unlike those prior art systems, which used centralized processing, the invention improves performance by distributing the processing work among cooperating components. But the invention cannot be merely the idea of distributing the processing—it must describe how. The idea of improving performance through distributed processing is just an abstract goal because the benefits of distributed processing can be attained only through a specific distributed architecture and protocol. The issue here is whether the claims recite enough of that distributed architecture or protocol.

Claim 16 captures enough of the distributed protocol disclosed in the specification to pass through the coarse eligibility filter of § 101. First, claim 16 recites that the network information is collected from a specific source—"a plurality of network devices at a plurality of layers." Next, claim 16 recites that the distributed system operates on the collected information by applying two specific types of functions—filtering and aggregating. Then, claim 16 recites that the filtered and aggregated information is further processed by enhancing it "in a distributed fashion." *See Amdocs*, 761 F.3d at 1338 (upholding the district court's construction of "completing" as requiring distributed enhancement). Unlike claim 1 of the '065 patent, claim 16 of the '510 patent recites "a plurality of network devices" over which the enhancement work may be distributed. Taken together, the limitations of claim 16 capture at least some of the *process* by which the disclosed system collects, processes, and transforms network accounting information, in a distributed fashion, into usable accounting records.

The district court held that claim 16 "does not add any specific implementation beyond the abstract idea that information is collected and stored, and reports are generated," because "[c]ollecting, filtering, aggregating, and

completing network information amounts to 'electronic recordkeeping.'" J.A. 22. I agree that claim 16 embodies a method of electronic record keeping, but I disagree that the claim is directed to that abstract goal rather than to a particular process for achieving it. Simply because computers are frequently called upon to perform operations such as "[c]ollecting, filtering, aggregating, and completing," this does not mean that any claim reciting these steps in any order and for any purpose is necessarily directed to that abstract concept. We must consider the claim as a whole and ask "what *type* of discovery is sought to be patented?" *Flook*, 437 U.S. at 593 (emphasis added). Here, the type of invention is a distributed software system that collects and processes network activity in a particularly scalable manner.

Openet argues that the "distributed fashion limitation should be given no weight because a "distributed architecture" is "a *generic* type of architecture." Br. of Appellee at 43. However, the claimed invention is not that the work is distributed, but *how* that distributed architecture is applied. Even if distributed processing generally was a known approach for improving system performance, claim 16 recites a *way* of applying distributed processing to the problem of activity monitoring, by collecting activity data "in real time from a plurality of network devices at a plurality of layers," then filtering and aggregating the data, and then using the filtered and aggregated data to assemble accounting records using a distributed "enhancement" protocol. To whatever extent this claimed approach was old, obvious, too broadly claimed, or unsupported, these considerations are apart from the eligibility inquiry and best reserved for other parts of the patentability analysis.

Like the claims at issue in *Enfish* and *McRO*, independent claim 16 and its dependent claims 17 and 19 of the '510 patent are "directed to" a particular process that improves upon the manner in which systems collect and

process network usage information, and the claimed process is limited in a specific way. As such, the claims are patent-eligible under step one of the *Alice* test, and there is no need to consider step two. *Id.* For that reason, I would *reverse* the district court's holding to the contrary.

C. '984 Patent

Amdocs alleged infringement of claims 1, 2, 7, 8, and 13 of the '984 patent. Claims 1 and 13 are independent, and claim 1 is representative:

> 1. A method for reporting on the collection of network usage information from a plurality of network devices, comprising:
>
> (a) collecting network communications usage information in real-time from a plurality of network devices at a plurality of layers utilizing multiple gatherers each including a plurality of information source modules each interfacing with one of the network devices and capable of communicating using a protocol specific to the network device coupled thereto, the network devices selected from the group consisting of routers, switches, firewalls, authentication servers, web hosts, proxy servers, netflow servers, databases, mail servers, RADIUS servers, and domain name servers, the gatherers being positioned on a segment of the network on which the network devices coupled thereto are positioned for minimizing an impact of the gatherers on the network;
>
> (b) filtering and aggregating the network communications usage information;
>
> (c) completing a plurality of data records from the filtered and aggregated network communications usage information, the plurality of data records corresponding to network usage by a plurality of users;

> (d) storing the plurality of data records in a database;
>
> (e) allowing the selection of one of a plurality of reports for reporting purposes;
>
> (f) submitting queries to the database utilizing the selected reports for retrieving information on the collection of the network usage information from the network devices; and
>
> (g) outputting a report based on the queries.

Claim 1 of the '984 patent is analogous to claim 16 of the '510 patent, except that it adds limitation (a), which recites details of the distributed architecture.

In step one, the district court identified the abstract idea underlying claim 1 as "reporting on the collection of network usage information from a plurality of network devices." J.A. 27. In step two, the district court found no inventive concept because the additional limitations recite only that "the genetic computer collects information from conventional devices to create records," using "gatherers, which are software," and then "filtering, completing, storing, allowing, submitting, and outputting," all of which are actions that are "conventional for both generic computers and generic databases." J.A. 27. It applied the same reasoning to claim 13. *Id.*

I see no error in the district court's articulation of the underlying abstract idea, which duplicates the preamble of claim 1. But again, after identifying the underlying idea, a court must still ask whether the claim is *directed to* that idea or to a specific means.

Because claim 1 of the '984 patent includes the same process limitations as the '510 claims, it is eligible for at least the same reasons. It was error for the district court to dismiss these process limitations solely on the basis that "filtering, completing, storing, allowing, submitting,

and outputting" are "conventional" types of activities for computers. *Id.* If this analysis were sufficient, no software invention could be eligible because every software invention comprises at most the "conventional" activities of receiving, storing, manipulating, and outputting information. These activities are *all* that computers can do. But "a new combination of steps in a process may be patentable even though all the constituents of the combination were well known and in common use before the combination was made." *Diamond v. Diehr*, 450 U.S. at 188. Whether a process is performed by software, hardware, machine, or man, the eligibility requirements are identical. The claimed invention must be limited to a specific *means* (i.e., process or structure) for achieving its underlying purpose. In other words, the claim must be limited "by what process or machinery the result is accomplished." *Morse*, 56 U.S. at 113.

It is worth noting that the "process or machinery" by which a result is accomplished need not be tangible to be patent eligible. Though the Supreme Court's early Information Age jurisprudence incorporated the Industrial Age requirement that eligible inventions must use or manipulate tangible materials,[5] the Court's subsequent case law has questioned that requirement. *See Bilski*, 561 U.S. at 605 ("But there are reasons to doubt whether the [machine-or-transformation] test should be the sole criterion for determining the patentability of inventions in the Information Age."). A software program is a digital

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[5] *See*, *e.g.*, *Diehr*, 450 U.S. at 183 ("A process is a mode of treatment of certain materials") (quoting *Cochrane v. Deener*, 94 U.S. 780, 787–788 (1877)); *Gottschalk v. Benson*, 409 U.S. 63, 70 (1972) ("Transformation and reduction of an article 'to a different state or thing' is the clue to the patentability of a process claim that does not include particular machines.").

machine. Like a physical machine, a digital machine is made of specific parts that interact with one another to achieve a specific result in a specific way. A claim to either type of machine is eligible only if the claim recites structural limitations detailing those specific parts, process limitations detailing that specific way, or a combination of the two. Such structure or process may be found in the recited components individually as well as in their arrangement and interaction with one another as a system. But the district court considered neither possibility.

Claim 1 recites a distributed architecture, including three types of components (i.e., network devices, gatherers, and ISMs) with given interrelations. The gatherers are coupled to the network devices and positioned on the same segment of the network as those devices. Moreover, each gatherer includes multiple ISMs in a one-to-many relationship, and the ISMs interface with respective network devices using a protocol specific to that device. Because such software structure and process can confer eligibility, the district court erred by dismissing the recited components on the sole basis that they "are software" without considering whether these architectural aspects are inventive structure or process. J.A. 27.

For the forgoing reasons, I would find that claim 1 of the '984 patent and its dependent claims 2, 7, and 8 are patent eligible. Independent claim 13 is also eligible because, as the district court acknowledged, it "is directed to essentially the same invention." J.A. 27. I would therefore *reverse* the district court's holding that claims 1, 2, 7, 8, and 13 of the '984 patent are not patent eligible.

D. '797 Patent

Amdocs alleged infringement of claims 1, 2, 7, 8, and 19 of the '797 patent. Claims 1, 7, and 19 are independent, and claim 1 is representative:

> 1. A method for generating a single record reflecting multiple services for accounting purposes, comprising:
>
> (a) identifying a plurality of services carried out over a network;
>
> (b) collecting data describing the plurality of services; and
>
> (c) generating a single record including the collected data, wherein the single record represents each of the plurality of services;
>
> wherein the services include at least two services selected from a group consisting of a hypertext transfer protocol (HTTP) session, an electronic mail session, a multimedia streaming session, a voice over Internet Protocol (IP) session, a data communication session, an instant messaging session, a peer-to-peer network application session, a file transfer protocol (FTP) session, and a telnet session;
>
> wherein the data is collected utilizing an enhancement procedure defined utilizing a graphic user interface by:
>
> > listing a plurality of available functions to be applied in real-time prior to end-user reporting,
> >
> > allowing a user to choose at least one of a plurality of fields, and
> >
> > allowing the user to choose at least one of the listed functions to be applied to the chosen field in real-time prior to the end-user reporting.

In step one, the district court identified the underlying abstract idea as "generat[ing] a single record reflect-

ing multiple services." J.A. 24. In step two, the district court found that the claim adds "only conventional computer functions operating in a conventional manner," and therefore "amounts to electronic record keeping," which is "one of the most basic functions of a computer." *Id.* The court found nothing inventive about the "enhancement procedure" or about defining that procedure using a graphical user interface ("GUI"), which it reasoned is a conventional way to interact with a computer. *Id.*

I see no error with the district court's articulation of the underlying abstract idea, which tracks the preamble of claim 1. I also agree that claim 1 is directed to an abstract idea rather than to a particular process or structure. Steps (a)–(c) utilize nebulous terms to describe a process of "identifying" "services," collecting data "describing" those services, and generating a "record" that "represents" the services. These three steps merely comprise the abstract concept of collecting information about network services, but the goal of "gathering and combining data" is not patent-eligible. *See Digitech*, 758 F.3d at 1351.

The next question is whether the two wherein clauses redirect the claim to a particular method or structure. They do not. The first wherein clause limits the subject of the collected data, but it does not define any particular process or structure. The second wherein clause recites that the data is collected utilizing a distributed enhancement procedure and that the procedure is customized by a user's selection of the fields and functions to apply. Like the '065 claims, claim 1 of the '797 recites no distributed architecture over which the enhancement might be performed. Moreover, the user's pre-solution configuration does not clearly redirect the claim to a particular method of gathering data—at least there is a credible concern that it does not.

Moving to step two, the central question is whether the second wherein clause contains some inventive concept such that claim 1 "amounts to significantly more than a patent upon the" idea of collecting information about network services. Amdocs argues that the "enhancement procedure" provides this inventive concept because it requires combining data from multiple network devices. Br. of Appellant at 63–65. But this argument is not persuasive because the abstract idea of "gathering and combining data" is not patent-eligible, *see Digitech*, 758 F.3d at 1351, regardless of the number of sources from which the data is gathered. Lastly, Amdocs argues that the claims "do not recite the general use of a GUI, but also specifically limit ***how*** the GUI is used." Br. of Appellant at 65 (emphasis original). I do not agree. The limitations of the second wherein clause do not limit *how* the GUI is used, but for what *purpose*. That purpose is to allow the user to choose the enhancement functions. Nothing in these limitations evinces an inventive way of permitting the user to select the functions or otherwise customize the enhancement. At best, the user's pre-solution customization amounts to insignificant pre-solution activity. *See Bilski*, 561 U.S. at 612. I see no inventive concept in claim 1.

For the foregoing reasons, I would hold that claim 1 of the '797 patent is ineligible. Claims 2, 7, 8, or 19 are likewise ineligible because Amdocs has not argued that any of these claims add anything more to claim 1. Accordingly, I would *affirm* the district court's determination that claims 1, 2, 7, 8, and 19 of the '797 patent are ineligible.

For these reasons, I *dissent*.