

United States Court of Appeals
for the Federal Circuit

INTELLECTUAL VENTURES I LLC,
INTELLECTUAL VENTURES II LLC,
Plaintiffs-Appellants

v.

ERIE INDEMNITY COMPANY, ERIE INSURANCE
EXCHANGE, ERIE INSURANCE PROPERTY &
CASUALTY COMPANY, ERIE INSURANCE
COMPANY, FLAGSHIP CITY INSURANCE
COMPANY, ERIE FAMILY LIFE INSURANCE
COMPANY, OLD REPUBLIC GENERAL
INSURANCE GROUP, INC., OLD REPUBLIC
INSURANCE COMPANY, OLD REPUBLIC TITLE
INSURANCE GROUP, INC., OLD REPUBLIC
NATIONAL TITLE INSURANCE COMPANY,
Defendants-Appellees

2016-1128, 2016-1132

Appeals from the United States District Court for the
Western District of Pennsylvania in Nos. 1:14-cv-00220-
MRH, 2:14-cv-01130-MRH, Judge Mark R. Hornak.

Decided: March 7, 2017

CHRISTIAN JOHN HURT, Nix Patterson & Roach LLP, Dallas, TX, argued for plaintiffs-appellants. Also represented by DEREK TOD GILLILAND, Daingerfield, TX.

GREGORY H. LANTIER, Wilmer Cutler Pickering Hale and Dorr LLP, Washington, DC, argued for defendants-appellees Erie Indemnity Company, Erie Insurance Exchange, Erie Insurance Property & Casualty Company, Erie Insurance Company, Flagship City Insurance Company, Erie Family Life Insurance Company. Also represented by RICHARD ANTHONY CRUDO, JAMES QUARLES, III; MONICA GREWAL, Boston, MA; DAVID CHARLES MARCUS, Los Angeles, CA.

VERNON M. WINTERS, Sidley Austin LLP, San Francisco, CA, argued for defendants-appellees Old Republic General Insurance Group, Inc., Old Republic Insurance Company, Old Republic Title Insurance Group, Inc., Old Republic National Title Insurance Company. Also represented by ALEXANDER DAVID BAXTER; ERIK JOHN CARLSON, Los Angeles, CA; RUSSELL E. CASS, Chicago, IL.

Before PROST, *Chief Judge*, WALLACH and CHEN, *Circuit Judges*.

PROST, *Chief Judge*.

Intellectual Ventures I LLC and Intellectual Ventures II LLC (collectively, “IV”) appeal from a final decision of the United States District Court for the Western District of Pennsylvania finding all claims of U.S. Patent No. 6,510,434 (“434 patent”), U.S. Patent No. 6,519,581 (“581 patent”), and U.S. Patent No. 6,546,002 (“002 patent”) ineligible under 35 U.S.C. § 101, and dismissing IV’s infringement claims of the ’581 patent for lack of standing. For the reasons discussed below, we affirm-in-part, vacate-in-part, and remand-in-part.

I

IV sued Erie Indemnity Company, Erie Insurance Exchange; Erie Insurance Property & Casualty Company; Erie Insurance Company; Flagship City Insurance Company; Erie Family Life Insurance Company (collectively, “Erie”); Old Republic General Insurance Group, Inc.; Old Republic Insurance Company; Old Republic Title Insurance Group, Inc.; Old Republic National Title Insurance Company; Highmark, Inc.; Hm Insurance Group, Inc.; Hm Life Insurance Company; Highmark Casualty Insurance Company; and Hm Casualty Insurance Company (collectively, “Appellees”), alleging infringement of the ’581 patent, the ’434 patent, and the ’002 patent (collectively, “patents-in-suit”) in the United States District Court for the Western District of Pennsylvania. In response, Appellees moved to dismiss IV’s ’581 patent infringement claims under Rule 12(b)(1) for lack of standing. Appellees also moved under Rule 12(b)(6), arguing that the claims of the ’581, ’434, and ’002 patents are directed to ineligible subject matter under 35 U.S.C § 101.

After concluding that IV did not own the rights to the ’581 patent, the district court granted Appellees’ motion under 12(b)(1) for lack of standing. In reaching this conclusion, the district court found that a particular assignor did not assign any rights in or to the then-pending application to the ’581 patent, thus breaking a chain in ownership of the patent. J.A. 24. Moreover, the district court dismissed IV’s infringement claims under Rule 12(b)(6), finding that all claims of the three patents-in-suit were ineligible under § 101. J.A. 77. In its appeal, IV argues that the district court erred in dismissing its claims under Rule 12(b)(1) and 12(b)(6). We have jurisdiction under 28 U.S.C. § 1295(a)(1).

II

On appeal, IV raises a number of issues regarding the proceedings below: (1) IV appeals the district court’s

dismissal of its infringement claims of the '581 patent for lack of standing and its determination that the '581 patent is directed to ineligible subject matter under § 101; (2) IV appeals the district court's determination that the '434 patent is directed to ineligible subject matter under § 101; and (3) IV appeals the district court's determination that the '002 patent is directed to ineligible subject matter under § 101. We take each issue in turn.

A

1

First, we consider the district court's dismissal of IV's infringement claims under Rule 12(b)(1) as they relate to the '581 patent. Our review of the district court's dismissal for lack of standing under 12(b)(1) is de novo. *Abbott Point of Care Inc. v. Epochal, Inc.*, 666 F.3d 1299, 1302 (Fed. Cir. 2012). We apply state law to contractual disputes and interpretations of the parties' patent assignment agreements.¹ *Semitool, Inc. v. Dynamic Micro Sys.*

¹ We note that there are certain instances where Federal Circuit law is intimately bound up in the contract interpretation issue. For example, we have held that “[t]he question of whether or not an agreement provides for automatic assignment is a matter of federal [patent] law.” *SiRF Tech., Inc. v. Int'l Trade Comm'n*, 601 F.3d 1319, 1326 (Fed. Cir. 2010). “Although state law governs the interpretation of contracts generally . . . the question of whether a patent assignment clause creates an automatic assignment or merely an obligation to assign is intimately bound up with the question of standing in patent cases. We have accordingly treated it as a matter of federal law.” *Abraxis Bioscience, Inc. v. Navinta LLC*, 625 F.3d 1359, 1364 (Fed. Cir. 2010) (quoting *DDB Techs., L.L.C. v. MLB Advanced Media, L.P.*, 517 F.3d 1284, 1290 (Fed. Cir. 2008); see *Speedplay, Inc. v. Bebop, Inc.*, 211

Semiconductor Equip. GmbH, 444 F.3d 1337, 1341 (Fed. Cir. 2006). For this particular dispute, California law applies. See Erie Resp. Br. 6 (noting that the parties executed the agreement underlying this matter in California); Appellants' Br. 18 (recognizing party agreement that California law governs). Because contract interpretation is a legal determination, the parties' contract dispute is reviewed without deference on appeal. *Semitool*, 444 F.3d at 1341.

The '581 patent issued from a continuation patent application of U.S. Patent No. 6,236,983 ("983 patent").² After a series of assignments, the rights to the '581 patent (then, a pending application) and the '983 patent were assigned to AllAdvantage.com. J.A. 837–54. This assignment agreement expressly assigned the '983 patent and any continuation of that patent to AllAdvantage.com. The parties do not dispute that this assignment covered the then-pending application to the '581 patent and that AllAdvantage.com owned both that application and its parent (the '983 patent) upon execution of this agreement. See, e.g., Erie Resp. Br. 5–6. Less than six months later,

F.3d 1245, 1253 (Fed. Cir. 2000) (stating that while the ownership of patent rights is typically a question exclusively for state courts, the question of whether contractual language effects a present assignment of patent rights, or an agreement to assign rights in the future, is resolved by Federal Circuit law). As explained below, however, IV has not persuaded us that this case implicates such exceptions and indeed, admitted that California law governs the contract interpretation inquiry. Accordingly, we analyze the contract interpretation issue under California law.

² Because we do not reach the issue of patent-eligibility of the '581 patent, we did not include a summary of the technology of the patent in this opinion.

AllAdvantage.com assigned various patents (including the '983 patent) and certain pending applications to Alset. J.A. 805–06 (“the Alset Agreement”). Although this agreement expressly identified the various patents and pending applications subject to assignment—including the '983 patent and several of its pending foreign patent application counterparts—it did not explicitly list the '581 patent’s then-pending application. *Id.*

In addition to its express identification and assignment of particular assets, this agreement included a more general grant clause: “Assignor, does hereby assign unto Assignee, all right, including common law rights, title and interest in the United States of America . . . in and to said patents together with the goodwill of the business symbolized by said patents and applications and registrations thereof.” J.A. 806. Approximately one year after the execution of this agreement, the U.S. Patent and Trademark Office (“PTO”) issued the '581 patent. Several years later, Alset assigned the '581 patent to an IV entity that later recorded that assignment with the PTO. J.A. 862–64. In light of this framework, the district court held that Alset did not convey title to the '581 patent. J.A. 24. We conclude that the Alset Agreement did not include an assignment of rights to the '581 patent and therefore affirm the district court’s Rule 12(b)(1) dismissal on that ground.

Under Title 35, only patentees and their successors in title to a patent may bring an action for infringement. 35 U.S.C. §§ 261, 281. IV argues that although the Alset Agreement did not expressly identify the '581 patent’s then-pending application, the agreement transferred title because the parties intended for the assignment to cover this asset. To demonstrate intent, IV identifies two portions of the agreement’s general grant clause it believes support its position (reproduced below with emphasis added to the two areas of IV’s focus): “Assignor, does hereby assign unto Assignee, all right, including common

law rights, title and interest in the United States of America . . . *in and to said patents* together with the *goodwill of the business symbolized by said patents and applications* and registrations thereof.” J.A. 806. Specifically, IV argues that the “*in and to said patents*” and “*goodwill of the business symbolized by said patents*” portions of this clause each—individually and independently—support its position. We disagree.

Under California law, “[a] contract must be so interpreted as to give effect to the mutual intention of the parties as it existed at the time of contracting, so far as the same is ascertainable and lawful.” Cal. Civ. Code § 1636 (West 2016). “The language of a contract is to govern its interpretation, if the language is clear and explicit, and does not involve an absurdity.” *Id.* § 1638. When (as here) “a contract is reduced to writing, the intention of the parties is to be ascertained from the writing alone, if possible.” *Id.* § 1639. A court also may consider evidence extrinsic to a contract under certain circumstances. *See, e.g., Wolf v. Superior Court*, 8 Cal. Rptr. 3d 649, 656 (Cal. Ct. App. 2004) (citing the California Supreme Court).

At the outset, first we must determine whether and to what extent the parties’ extrinsic evidence affects the meaning of these two portions of this clause. “Where the meaning of the words used in a contract is disputed, the . . . court must provisionally receive any proffered extrinsic evidence which is relevant to show whether the contract is reasonably susceptible of a particular meaning.” *Id.* at 655 (citation and internal quotation marks omitted) (citing the California Supreme Court). Thus, contract interpretation under California law is a two-step process. “First the court provisionally receives (without actually admitting) all credible evidence concerning the parties’ intentions to determine ‘ambiguity,’ i.e., whether the language is ‘reasonably susceptible’ to the interpretation urged by a party.” *Id.* at 656 (citation omitted). “If in

light of the extrinsic evidence the court decides the language is ‘reasonably susceptible’ to the interpretation urged, the extrinsic evidence is then admitted to aid in the second step—interpreting the contract.” *Id.* (citation omitted).

IV identifies extrinsic evidence that it contends shapes the meaning of the “in and to” and the “goodwill of the business symbolized” language and demonstrates that the parties originally intended to assign the ’581 patent. Specifically, IV observes that upon execution, Alset recorded the assignment at the PTO and represented in its terminal disclaimer that it owned all the rights to the ’581 patent. Moreover, IV notes that Alset filed updated power of attorneys and paid the ’581 patent’s issuance fee.

Upon provisional consideration of the extrinsic evidence IV proffered, we agree with the district court’s conclusion that there is no ambiguity within the Alset Agreement that could render it reasonably susceptible to IV’s interpretation. The assignment itself expressly listed the seventeen patents and applications that the parties intended to transfer, with clear language that conveyed the rights, “in and to,” and “goodwill of the business symbolized by,” those explicitly identified assets. J.A. 806. In the context of this agreement, IV’s proffered evidence neither resolves any ambiguity nor shapes the meaning of the words contained within the general grant clause. Although this evidence may lead one to reasonably conclude that Alset believed it owned the ’581 patent at some later point in time, it would be error for us to rewrite the parties’ agreement to include that which was plainly not included. Indeed,

[i]f the plain language of the instrument is unambiguous, a court may not “read into” the document additional terms in order to conform its meaning to what the court’s “intuition” tells it the parties must have intended. Rather, the court “is simply

to ascertain and declare what is in terms or in substance contained therein, not to insert what has been omitted, or to omit what has been inserted . . . ”

PV Little Italy, LLC v. MetroWork Condo. Assn., 210 Cal. App. 4th 132, 135 (2012) (citing Cal. Civ. Proc. Code § 1858 (West 2016)). Taken together, the Alset Agreement is not reasonably susceptible to IV’s proffered interpretation and, thus, we need not consider the extrinsic evidence advanced by IV.³ See *Producers Dairy Delivery Co. v. Sentry Ins. Co.*, 718 P.2d 920, 925 (Cal. 1986) (explaining that a court should not consider extrinsic evidence “if the evidence offered would not persuade a reasonable man that the instrument meant anything other than the ordinary meaning of its words” (alterations, citation, and internal quotation marks omitted)). Because we conclude that IV’s extrinsic evidence does not lend this clause reasonably susceptible to IV’s interpretations, we move to IV’s two specific arguments applying a plain meaning interpretation to the contract. See *Wolf*, 114 Cal. App. 4th at 1356.

First, regarding “in and to said patents,” IV argues that the agreement automatically incorporated rights to

³ Even if we considered the extrinsic evidence, we agree with the district court that the evidence “speaks to Alset’s belief in its ownership” of the ’581 patent and Alset’s actions holding “itself out as the owner of the ’581 patent after executing the Alset Agreement,” but it says nothing about “AllAdvantage’s intent aside from its decision to do nothing to assert further ownership interest.” *IV*, 134 F. Supp. 3d at 894. Indeed, some of the extrinsic evidence demonstrates that, when the other parties in the chain-of-title wanted to assign continuation applications like the application leading to the ’581 patent, they knew how to do so. See *id.*

the then-pending '581 application because as a continuation, it is necessarily bound to the same inventive subject matter of its parent. IV predicates its argument on the patents' familial relationship because the grant clause conveyed rights "in and to" the subject matter of the parent patent (not simply just title to it). We conclude that the "in and to said patents" language does not support IV's position. Patents, applications for patents, or any interest therein, must be assigned by an instrument in writing. 35 U.S.C. § 261. In assigning ownership rights here, the parties limited their written instrument to the seventeen patents and applications expressly listed in that agreement. J.A. 805–06 (including the '983 patent, but not the then-pending '581 patent's application). It does not mention either the application that led to the '581 patent or the '581 patent itself, J.A. 805–06, a point that IV concedes, Appellants' Br. 22. It does not disclose that continuation applications or other family members of the enumerated patents are assigned. J.A. 805–06. That several patent applications appear in the Alset Agreement suggests that, if AllAdvantage intended to convey the application leading to the '581 patent to Alset, it knew how to do so.

Turning to the broader language of the agreement, IV has not demonstrated that the rights "in and to" a particular patent automatically include its child applications. Rather, IV seems to conflate the meaning of the word "patent," as used in the agreement, with "invention"; the latter which we held conveyed rights to continuation applications. *See DDB Techs.*, 517 F.3d at 1290. Thus, this language did not convey any rights, and a conclusion otherwise would directly conflict with the plain language of the agreement. For example, if the "in and to said patents" language automatically conveyed the rights to all applications within the family of those expressly identified, the agreement need not list the '983 patent's foreign counterpart applications either. But as Erie correctly

observes, the agreement listed three of the '983 patent's foreign applications. J.A. 805; Erie Resp. Br. 31. The agreement did not, however, list the then-pending '581 patent application. J.A. 805–06. We thus conclude that the "in and to said patents" language did not convey any rights to the '581 patent.

Second, regarding the "goodwill of the business symbolized by said patents and applications" portion of the agreement, IV argues the goodwill assigned here includes the right to commercialize or license the patented invention through the expiration of the '983 patent as part of its patent monopoly. To support this contention, IV refers again to the terminal disclaimer Alset filed and cites *Scott Paper Co. v. Marcalus Manufacturing Co.*, 326 U.S. 249 (1945). IV relies on this case to support its position that the exclusion of the '581 patent would necessarily devalue this goodwill if it were unable to commercialize the invention without risk of infringing the '581 patent. IV maintains if legal title to the common inventive subject matter were severed, Alset could not receive the goodwill relating to the enjoyment of the patent monopoly in the '983 patent unless it received rights to the '581 patent as well.

Similar to the "in and to said patents" portion discussed above, we conclude that the agreement's "goodwill of the business symbolized by said patents and applications" portion did not transfer title to the '581 patent as well. IV largely predicates its arguments on the assumption that the agreement assigned the goodwill of the '983 patent *itself*. It did not. Rather, the plain language of the agreement assigned the "goodwill of the *business symbolized* by [the '983 patent]." J.A. 806 (emphasis added). At best, this portion of the Alset Agreement assigned the goodwill of the resulting commercial exploitation of the patent. Indeed, IV's citation to *Scott Paper* actually supports the conclusion that goodwill is something other than the patent instrument itself. In that case, the Supreme Court referred to the goodwill in the context of "the

patented article or product.” *Scott Paper*, 326 U.S. at 256. In other words, goodwill here refers to the goodwill resulting from the commercial exploitation of the *products* covered by the ’983 patent. But IV’s commercial exploitation of the ’983 patent bears no relevance to the ’581 patent instrument itself. Because goodwill cannot sweep in patents not expressly listed in the parties’ agreement, this portion of the grant clause did not transfer any rights in the ’581 patent either.⁴

Because we conclude that the Alset Agreement did not convey any rights to the ’581 patent, IV lacked standing to bring suit on that patent. Accordingly, we affirm the district court’s Rule 12(b)(1) dismissal for lack of standing.

2

In addition to finding that IV lacked standing to assert infringement of the ’581 patent against Erie and Old Republic, the district court concluded that the ’581 patent is directed to an abstract idea and otherwise lacks an inventive concept, such that it is patent-ineligible under § 101. *See IV*, 134 F. Supp. 3d at 909–17. We must vacate this aspect of the district court’s decision.

Because IV lacks standing to assert infringement of the ’581 patent, we may not address that patent’s validity under § 101. When the party that filed suit is not the “patentee” under § 281 and otherwise fails to join the patentee to the suit, we dismiss all claims based on the subject patent. *See, e.g., Diamond Coating Techs., LLC v.*

⁴ Because we do not subscribe to IV’s interpretation of the assignment, i.e., assigning goodwill to the patent instrument itself, we express no opinion as to whether the assignment of goodwill of a patent itself would have been effective in transferring the rights to the parent’s unidentified child application.

Hyundai Motor Am., 823 F.3d 615, 618–19 (Fed. Cir. 2016). And when the patentee has not joined the action, we may not consider the merits of an affirmative defense directed to the patent in question, such as patent-eligibility under § 101. See, e.g., *Bd. of Trs. of Leland Stanford Junior Univ. v. Roche Molecular Sys., Inc.*, 583 F.3d 832, 848–49 (Fed. Cir. 2009) (“Stanford . . . lacks standing to assert its claims of infringement Thus, the district court lacked jurisdiction over Stanford’s infringement claim and should not have addressed the validity of the patents. . . . The district court’s grant of summary judgment of invalidity is therefore vacated, and the case is remanded with instructions to dismiss Stanford’s claim for lack of standing.” (citation omitted)). Without the patentee joining suit, courts may not make findings about the ’581 patent against which the patentee has had no opportunity to defend. We therefore vacate the district court’s summary judgment order of invalidity as to this patent and remand with instructions to dismiss all claims based on the ’581 patent.

B

Next, IV appeals the district court’s dismissal of its patent infringement claims relating to the ’434 patent for reciting ineligible subject matter under § 101.

We review the district court’s dismissal under Rule 12(b)(6) according to the law of the regional circuit. *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat'l Assn.*, 776 F.3d 1343, 1346 (Fed. Cir. 2014). The Third Circuit applies a de novo standard of review to motions to dismiss under Rule 12. *Sands v. McCormick*, 502 F.3d 263, 267 (3d Cir. 2007). Patent eligibility under § 101 is an issue of law to which we review without deference. *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362 (Fed. Cir. 2015).

Section 101 of the Patent Act defines patent-eligible subject matter: “Whoever invents or discovers any new

and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefore, subject to the conditions and requirements of this title.” 35 U.S.C. § 101. In interpreting this statutory provision, the Supreme Court has held that its broad language is subject to an implicit exception for “laws of nature, natural phenomena, and abstract ideas,” which are not patentable. *Alice Corp. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2355 (2014).

To determine whether the exception applies, the Supreme Court has set forth a two-step inquiry. Specifically, a court must determine: (1) whether the claim is directed to a patent-ineligible concept, i.e., a law of nature, a natural phenomenon, or an abstract idea; and if so, (2) whether the elements of the claim, considered “both individually and ‘as an ordered combination,’ add enough to “transform the nature of the claim’ into a patent-eligible application.” *Id.* (quoting *Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1297–98 (2012)). Applying this two-step process to claims challenged under the abstract idea exception, we typically refer to step one as the “abstract idea” step and step two as the “inventive concept” step. *Affinity Labs of Tex., LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1257 (Fed. Cir. 2016).

Under the “abstract idea” step we must evaluate “the ‘focus of the claimed advance over the prior art’ to determine if the claim’s ‘character as a whole’ is directed to excluded subject matter.” *Id.* (citation omitted). If the concept is directed to a patent-ineligible concept, we proceed to the “inventive concept” step. For that step we must “look with more specificity at what the claim elements add, in order to determine ‘whether they identify an “inventive concept” in the application of the ineligible subject matter’ to which the claim is directed.” *Id.* at 1258 (quoting *Elec. Power Grp. v. Alstom S.A.*, 830 F.3d 1350, 1353 (Fed. Cir. 2016)).

Turning to the invention, the '434 patent contains twenty-eight claims relating to methods and apparatuses that use an index to locate desired information in a computer database. According to the patent, prior art database searching methods were inefficient and often returned many false positives. '434 patent col. 1 ll. 40–44. The patent explains that a prior art database search for records containing the term “Ford,” for example, may return hits related to the Ford Company, Ford Theatre and the Ford brand of trucks. Thus, a searcher interested only in information related to Ford trucks would need to sift through a potentially large number of false hits to locate the desired information.

The '434 patent proposes to search the database using an index, which “is essentially a guide to the records of the database.” *Id.* at col. 2 ll. 39–41. According to the '434 patent, every record in the database is associated with one or more descriptive terms. For example, a database record for a restaurant that serves Chinese food, accepts AMERICAN EXPRESS and offers valet parking could be associated with the terms “Chinese,” “AMERICAN EXPRESS,” and “valet parking.” *Id.* at col. 7 ll. 46–55. The database index in turn organizes this information using a series of “tags,” notably category tags and domain tags. The “category” tags comprise a grouping of similar terms. For example, a “Cuisine” category tag could include the terms “Chinese,” “Mexican,” and “American.” And the “domain” tags describe a grouping of similar categories. A “Restaurant” domain tag could include categories such as the “Cuisine” category, as well as other categories relevant to Restaurants, such as “Payment Option” and “Amenities.” Each record in the database includes an index component that identifies the category and domain tags associated with that record. In the preferred embodiment, each tag is written in the well-

known eXtensible Markup Language (XML).⁵ *Id.* at col. 9 ll. 14–17. Each tag also has an associated metafile that provides additional information about the tag, such as its relationship to other tags and its place in the index’s hierarchical structure.

When the system receives a search request, a set of tags that corresponds to the request is somehow identified by the system. And the system uses that set of tags to search for records that have an index component identifying the same set of tags. In other words, if the user looking for a restaurant searches for “American with valet parking,” the claimed system would identify and return database records having both “Cuisine” and “Amenities” tags in their associated index component. If those tags have associated metafiles, the system may utilize the available metadata to help refine the search. The system may, for example, determine that the term “American” is also associated with other category tags, such as “Brand,” “Language,” and the like. The system may then attempt to resolve the ambiguity by querying the user to choose cuisine or brand before returning the database records.

IV identifies independent claims 1 and 19 as exemplary methods of creating and searching a database, respectively. Claim 1 provides:

1. A method for creating a database and an index to search the database, comprising the steps of:
creating the index by defining a plurality of XML tags including domain tags and category tags;

⁵ We provide a more detailed summary of XML in our opinion in the companion appeal. *Intellectual Ventures I LLC v. Capital One Financial Corp.*, Nos. 2016-1077, slip op. at 10–11 (Fed. Cir. March 7, 2017).

creating a first metafile that corresponds to a first domain tag;

and creating the database by providing a plurality of records, each record having an XML index component.

Id. at col. 15 ll. 38–45. Claim 19 provides:

19. A method for searching a database of information, comprising the steps of:

receiving a request for information from a client, the request having a first term;

identifying a first XML tag that is associated with the first term;

determining whether a first metafile corresponds to the first XML tag;

if the first metafile corresponds to the first XML tag, then transmitting the first XML tag, the first metafile and query code to the client;

once the client conducts a query by executing the query code using the first XML tag and the first metafile, then receiving query results including a first set of XML tags from the client;

combining the first set of XML tags into a key;

using the key to search the database to locate records including the first set of XML tags; and delivering the records.

Id. at col. 17 ll. 43–63. Thus, IV contends “[t]he heart of the ’434 patent is improved computer database search technology that utilizes an index constru[ct]ed of tags and metadata to facilitate searches.” Appellants’ Br. 46–47.

Under step one, we agree with the district court that the invention is drawn to the abstract idea of “creating an index and using that index to search for and retrieve data.” J.A. 63. As the patent itself observes, the invention relates to “locating information in a database, and . . . using an index that includes tags and metafiles to locate the desired information.” *Id.* at col. 1 ll. 24–26. This type of activity, i.e., organizing and accessing records through the creation of an index-searchable database, includes longstanding conduct that existed well before the advent of computers and the Internet. For example, a hardcopy-based classification system (such as library-indexing system) employs a similar concept as the one recited by the ’434 patent. There, classifiers organize and cross-reference information and resources (such as books, magazines, or the like) by certain identifiable tags, e.g., title, author, subject. Here, tags are similarly used to identify, organize, and locate the desired resource.

We have previously held other patent claims ineligible for reciting similar abstract concepts that merely collect, classify, or otherwise filter data. For example, in *In re TLI Communications LLC Patent Litigation*, we concluded that the concept of classifying data (an image) and storing it based on its classification is abstract under step one. 823 F.3d 607, 611 (Fed. Cir. 2016). In *Content Extraction*, we similarly held that the concept of data collection, recognition, and storage abstract as well. 776 F.3d at 1347. More recently, in *Bascom Global Internet Services, Inc. v. AT&T Mobility LLC*, we held that a claim to a “content filtering system for filtering content retrieved from an Internet computer network” was directed to an abstract idea. 827 F.3d 1341, 1348–49 (Fed. Cir. 2016). Here, the claimed creation of an index used to search and retrieve information stored in a database is similarly abstract.

IV argues that the claims of the '434 patent are drawn to a specific search architecture that improves how computer databases function, just like the self-referential table claims at issue in *Enfish, LLC v. Microsoft Corp.* 822 F.3d 1327 (Fed. Cir. 2016). In support of its argument, IV relies heavily on the fact that many of the claims, including representative claims 1 and 19, are directed expressly to building an index using XML tags. IV's reliance on this known markup language to tether the claimed invention to a specific type of database architecture, however, is unavailing. As an initial matter, not all claims recite these XML tags. Independent claim 7, for example, recites a method of searching a database of records using an index without the need for this XML-based tag. '434 patent col. 16 ll. 10–23. And the patent itself recognizes that the invention is not necessarily limited to XML language. *See id.* at col. 15 ll. 19–23 (“Although the present invention has been described in connection with the XML language, those skilled in the art will realize that the invention can also be practiced using other languages that use tags and support the association of a file . . .”).

Moreover, even if all the claims were so limited, merely using XML tags—as opposed to other kinds of tags—to build an index is still abstract. The claims are not focused on *how* usage of the XML tags alters the database in a way that leads to an improvement in the technology of computer databases, as in *Enfish*. Instead, the claims simply call for XML-specific tags in the index without any further detail. The patent concedes that the XML tags were previously known in the art. *Id.* at col. 8 l. 67–col. 9 l. 4 (observing that “XML is a syntax for creating a markup language that uses a set of tags” that comprises a standard that is maintained by the World Wide Web Consortium). The focus of the claims, therefore, remains at a high level on searching a database using an index.

The inclusion of XML tags as the chosen index building block, with little more, does not change that conclusion.

Because we agree with the district court that the heart of the claimed invention lies in creating and using an index to search for and retrieve data, we conclude that the claims here are directed to an abstract concept under *Alice* and its progeny and, thus, move to step two.

2

In applying step two of the *Alice* analysis, we must “determine whether the claims do significantly more than simply describe [the] abstract method” and thus transform the abstract idea into patentable subject matter. *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014). We look to see whether there are any “additional features” in the claims that constitute an “inventive concept,” thereby rendering the claims eligible for patenting even if they are directed to an abstract idea. *Alice*, 134 S. Ct. at 2357. Those “additional features” must be more than “well-understood, routine, conventional activity.” *Mayo*, 132 S. Ct. at 1298.

Evaluating the representative claims 1 and 19, we agree with the district court that they lack an “inventive concept” that transforms the abstract idea of creating an index and using that index to search for and retrieve data into a patent-eligible application of that abstract idea. J.A. 66–67. IV again argues that the claimed contribution lies in the utilization of an index constructed of specific XML tags and metadata to facilitate searches. But the recitation of an index employing XML tags to navigate a computerized database is simply not enough to transform the patent-ineligible abstract idea here into a patent-eligible invention. See *Alice*, 134 S. Ct. at 2357 (“[C]laims, which merely require generic computer implementation, fail to transform [an] abstract idea into a patent-eligible invention.”).

The patent admits that an index is simply “a guide that is used to locate information stored in a database.” ’434 patent col. 2 ll. 39–41. Furthermore, we fail to see how the patentee’s use of a well-known tag, i.e., XML tag—to form an index—sufficiently transforms the claims into a patent eligible invention. While limiting the index to XML tags certainly narrows the scope of the claims, in this instance, it is simply akin to limiting an abstract idea to one field of use or adding token post solution components that do not convert the otherwise ineligible concept into an inventive concept. *See Bilski v. Kappos*, 561 U.S. 593, 612 (2010). Similarly, the metafiles associated with these tags do not transform the claim into something beyond a conventional computer practice for facilitating searches. Indeed, the ’434 patent describes these metafiles as mere indicators that provide additional information about the tags hierarchical structure in the index. *Id.* at col. 2 ll. 60–62. The use of metafiles to build the claimed index is yet another natural consequence of carrying out the abstract idea in a computing environment and is, therefore, also insufficient to transform a patent-ineligible abstract idea into a patent-eligible invention. In this case, the claims do not sufficiently recite how the inclusion of XML tags or metadata leads to an improvement in computer database technology through some “non-conventional and non-generic arrangement of known, conventional pieces.” *Bascom*, 827 F.3d at 1349–52.

Moreover, the remaining limitations recite routine computer functions, such as the sending and receiving information to execute the database search, e.g., receiving a request for information and delivering records. These are no more than the “performance of ‘well-understood, routine, [and] conventional activities previously known to the industry.’” *Content Extraction*, 776 F.3d at 1347–48 (citation omitted). Thus, while the claims necessarily cabin the idea of categorical data search and retrieval to a

computer environment, the claimed computer functionality can only be described as generic or conventional.

Accordingly, evaluating these claimed elements either individually or as an ordered combination, we conclude that claimed steps recite no more than routine steps involving generic computer components and conventional computer data processing activities to accomplish the well-known concept of creating an index and using that index to search for and retrieve data.

C

Third, and finally, IV appeals the district court’s dismissal of IV’s claims relating to the ’002 patent for reciting ineligible subject matter under § 101.

The ’002 patent contains forty-nine claims relating to systems and methods for accessing a user’s remotely stored data and files. The inventor of the ’002 patent perceived a need to improve the accessibility of data stored across a user’s disparate electronic devices. The specification explains “[i]t is not uncommon for many users to have multiple computers, PDAs, and other computer-related devices. Each individual computer or PDA may include specific menu items and bookmarks that do not exist in another computer or PDA.” ’002 patent col. 2 ll. 35–40. “For example, a computer used at work may be the only device that includes a spreadsheet program while a computer used at home may be the only device that includes bookmarked URLs. Thus, the user will not have access to the bookmarks from the user’s work computer and likewise, will not have access to the spreadsheet program from the user’s home computer.” *Id.* at col. 2 ll. 40–46.

To solve this problem, the ’002 patent discloses a “mobile interface” that can be called up on the user’s computer or mobile device. That mobile interface displays a plurality of pointers to user-specific resources and infor-

mation stored on the user's various devices. These pointers, "similar to bookmarks used in web browsers," '002 patent at col. 8 l. 34, purportedly allow the user to retrieve and access remotely stored documents, applications, images and the like, irrespective of the user's location or device.⁶ Claim 40 is representative:

40. A system for storing and accessing user specific resources and information, the system comprising:

a network for accessing the user specific resources and information stored in a network server;

and a local device communicating with the network and having a local memory and a mobile interface, wherein the local memory also includes user specific resources and information, and the mobile interface includes pointers corresponding to the user specific resources and information that are stored either on the local device or the network server, wherein the pointers provide links to access the corresponding user specific resources and information.

Id. at col. 19 l. 47–col. 20 l. 6. In other words, the claimed invention is directed to a "mobile interface" on a user's device that is capable of accessing the user's data stored anywhere, whether on the user's device or elsewhere on a remote network server.

⁶ Broadly speaking, in object-oriented programming, pointers are objects that point to a particular value stored in memory by referencing its memory address. In the context of the invention, a pointer includes a reference to a type of menu item that a system can access on a computer, handheld device, or a server. '002 patent col. 1 ll. 36–38.

In analyzing the claims under step one, the district court determined that the invention is drawn to the idea of “remotely accessing user specific information.” J.A. 72. We agree with this conclusion. As the patent itself observes, the invention provides “a system and method that allows a user to access specific documents, files, programs . . . from any computer device located in a geographic location.” ’002 patent col. 3 l. 66–col. 4 l. 4. Remotely accessing and retrieving user-specified information is an age-old practice that existed well before the advent of computers and the Internet.

IV argues that the claimed mobile interface is a particular software-driven machine that performs specific operations to solve a problem unique to the field of computer networks. Yet the claimed invention does not recite any particular unique delivery of information through this mobile interface. Rather, it merely recites retrieving the information through the mobile interface. Nor do the claims describe how the mobile interface communicates with other devices or any attributes of the mobile interface, aside from its broadly recited function. Thus, the mobile interface here does little more than provide a generic technological environment to allow users to access information. And as we have previously observed, “[a]n abstract idea does not become nonabstract by limiting the invention to a particular field of use or technological environment, such as the Internet.” *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1366 (Fed. Cir. 2015) (“*Intellectual Ventures I*”). We conclude therefore that the ’002 patent’s concept of remotely accessing user-specific information is abstract, and thus fails under step one.

Under step two, we conclude that the claims recite no “inventive concept” to transform the abstract idea of

remotely accessing user-specific information into a patent eligible application of that abstract idea. Rather, the claims merely recite generic, computer implementations of the abstract idea itself.

IV places great emphasis on the claims' recitation of a mobile interface and its associated pointers. IV argues that the '002 patent overrides the routine use of pointers, e.g., in the context of a local system, by intelligently accessing and combining them through the mobile interface to retrieve remotely-stored data. *See, e.g.*, Appellants' Br. 62 ("All of the claims are limited to a specific use of multiple pointers to retrieve the user-specific data via a mobile interface in a network with a server and local de[v]ice."). According to IV, this provides users with access to their files and data from any location irrespective of the device used.

We, however, conclude that the claims do not sufficiently recite an inventive concept that transforms the abstract idea into a patent-eligible invention. The recited use of a mobile interface and pointers to retrieve user information evidences nothing more than a "generic computer implementation" of the abstract idea that is insufficient to transform a patent-ineligible abstract idea into a patent-eligible invention. *Alice*, 134 S. Ct. at 2357. The '002 patent does not provide an inventive solution to a problem in implementing the idea of retrieving user-specified information; it simply recites that the abstract idea will be implemented using the conventional components and functions generic to electronic mobile devices. These recited features are simply "conventional steps, specified at a high level of generality." *Ultramerical*, 772 F.3d at 716 (citation omitted).

The claimed mobile interface is so lacking in implementation details that it amounts to merely a generic component (software, hardware, or firmware) that permits the performance of the abstract idea, i.e., to retrieve

the user-specific resources. Further, this interface provides no more than similar user interfaces recited in claims that we have previously held ineligible. *See, e.g., Intellectual Ventures I*, 792 F.3d at 1369–70; *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1344–45, 1348–49 (Fed. Cir. 2015). As in those cases, the ’002 patent’s interface merely provides a generic, functionally recited component “tasked with tailoring information and providing it to the user.” *Intellectual Ventures I* at 1370–71. And the mobile interface’s incorporation of pointers is not sufficient to transform the abstract concept either. The mobile interface relies on these pointers to retrieve user resources and information over the network so that a user may view them. But receiving transmitted data over a network and displaying it to a user merely implicates purely conventional activities that are the “most basic functions of a computer.” *Alice*, 134 S. Ct. at 2359. As the ’002 patent observes, pointers themselves are conventional, as is the manner in which the claims employ them in conjunction with the mobile interface. ’002 patent col. 1 ll. 34–38.

Finally, we find unconvincing IV’s argument that the claimed mobile interface and pointers carry out more than their routine functions because they allow users to retrieve previously inaccessible information, regardless of location or format. Nowhere do the claims recite elements or components that describe *how* the invention overcomes these compatibility issues. Although the patent itself describes in general terms the ability to access user-specific resource and information from *any computer*, e.g., ’002 patent col. 3 l. 66–col. 4 l. 4, neither the specification nor the claims cabin the invention specifically in terms of solving these compatibility issues. Rather, the systems and methods recited merely relate to obtaining remote information by displaying a mobile interface at the local device and retrieving the user-specific resources and information using pointers. *See, e.g., id.* at col. 17 ll. 9–

21. Without an explanation of the “mechanism” for “how the result is accomplished,” this purported feature of the invention cannot supply an inventive concept. *Internet Patents*, 790 F.3d at 1348; see also *Elec. Power Grp.*, 830 F.3d at 1356 (noting that claims that are “so result-focused, so functional, as to effectively cover any solution to an identified problem” are frequently held ineligible under § 101). In short, the ’002 patent identifies a need, but the claims fail to provide a concrete solution to address that need.

Accordingly, these claims fail under step two as well and are thus ineligible under § 101.⁷

CONCLUSION

For the foregoing reasons, we affirm the district court.

AFFIRMED-IN-PART, VACATED-IN-PART, AND REMANDED-IN-PART

⁷ Although we only address representative claim 40, we have reviewed the remaining claims and conclude nothing in addition to the elements recited in claim 40 transforms the abstract idea into patentable subject matter.