

No. 2017-2081

United States Court of Appeals
for the Federal Circuit

SAP AMERICA, INC.,
Plaintiff-Appellee,

v.

INVESTPIC, LLC,
Defendant-Appellant,

Appeal from the United States District Court
for the Northern District of Texas, Dallas Division
No. 3:16-CV-02689-K, Judge Ed Kinkeade

**INVESTPIC, LLC'S COMBINED PETITION FOR REHEARING *EN BANC*
AND PANEL REHEARING**

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June 14, 2018

CERTIFICATE OF INTEREST

Counsel for Appellant InvestPic LLC certifies the following:

1. The full name of every party or amicus represented by me is:
InvestPic, LLC
2. The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by me is:
InvestPic, LLC
3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:
Each of the following entities owns a share of 10% or more in InvestPic, LLC: ISPD Inc.; Regulus International Capital Corp.; S.A.M. 2000 Irrevocable Trust; Clara S. Miller (individual). None of these entities is publicly held.
4. The names of all the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:
Jay P. Kesan, Cecil E. Key, Teresa Summers, DiMuroGinsberg PC/DGKEYIP Group; Michael W. Shore, Alfonso Garcia Chan, Christopher L. Evans, SHORE CHAN DEPUMPO, LLP.; Richard T. Black, Kevin Ormiston, FOSTER PEPPER, PLLC (before the Patent Trial and Appeal Board and Central Reexamination Unit)

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TABLE OF CONTENTS

CERTIFICATE OF INTEREST i

**STATEMENT OF COUNSEL PURSUANT TO FEDERAL CIRCUIT RULE
35(b).....1**

I. INTRODUCTION3

II. ARGUMENT4

**A. The Panel Decision Cannot Stand Because It Was Based Solely On
Original Claims That Were Surrendered During Reexamination
While The Case Was Pending On Appeal.....4**

**B. The Panel Decision Is Inconsistent and Irreconcilable With Prior
Panel Decisions and Would Exclude the Entire Field of Data Science
from Patent-Eligibility.....8**

CONCLUSION.....17

TABLE OF AUTHORITIES

Cases

Alice Corp. Pty. Ltd. v. CLS Bank Intern'l,
 134 S. Ct. 2347 (2014).....2, 15

Allard v. De Lorean,
 884 F.2d 464 (9th Cir. 1989)6

Ariad Pharm., Inc. v. Eli Lilly & Co.,
 598 F.3d 1336 (Fed. Cir., 2010)14

Berkheimer v. HP Inc.,
 No. 2017-1437, 2018 WL 774096 (Fed. Cir., Feb. 8, 2018).....5, 16

Bilski v. Kappos,
 561 U.S. 593 (2010).....11

Cardpool Inc. v. Plastic Jungle, Inc.,
 564 F. App'x 582 (Fed. Cir. 2014)8

Cardpool, Inc. v. Plastic Jungle, Inc.,
 817 F.3d 1316 (Fed. Cir. 2016) 2, 4, 6, 8

Fresenius USA, Inc. v. Baxter Int'l, Inc.,
 721 F.3d 1330 (Fed. Cir. 2013) 2, 6, 7

In re Varma,
 816 F.3d 1352 (Fed. Cir. 2016) 2, 7, 10

Kaufman Co. v. Lantech, Inc.,
 807 F.2d 970 (Fed. Cir. 1986)6

Mayo Collaborative Servs. v. Prometheus Labs, Inc.,
 566 U.S. 66, 90 (2012)5

McRO, Inc. v. Bandai Namco Games Am., Inc.,
 837 F.3d 1299 (Fed. Cir. 2016) 2, 5, 10, 12

Metallurgical Indus., Inc. v. Fourtek, Inc.,
 790 F.2d 1195, 1199-1200 (5th Cir. 1986).....14

MGM Portfolio LLC v. Hewlett-Packard Co.,
 812 F.3d 1284 (Fed. Cir., 2015)11

<i>North Carolina v. Rice</i> , 404 U.S. 244 (1971).....	4
<i>Seattle Box Co., Inc. v. Industrial Crating & Packing, Inc.</i> , 731 F.2d 818 (Fed. Cir. 1984)	6, 7
<i>Thales Visionix Inc. v. U.S.</i> , 850 F.3d 1343 (Fed. Cir. 2017)	2
<i>Trading Tech. Int’l Inc. v. CQG, Inc.</i> , No. 2016-1616, 2017 WL 192716 (Fed. Cir. Jan. 18, 2017)	2, 13
<i>U.S. Bancorp Mortg. Co. v. Bonner Mall P’ship</i> , 513 U.S. 18 (1994).....	6
Statutes	
35 U.S.C. § 307(b)	6
Other Authorities	
U.S. CONST., Art. I, § 8 cl. 8	14
U.S. Const., Art. III.....	4

STATEMENT OF COUNSEL PURSUANT TO
FEDERAL CIRCUIT RULE 35(b)

Based on my professional judgment, I believe this appeal requires an answer to one or more precedent-setting questions of exceptional importance:

1. Whether the district court decision must be vacated and remanded because the original claims, which were the only claims considered by both the district court and the panel (*see* Addendum at 4 n.1), were surrendered as a result of reexaminations that resulted in amended and new claims claiming with greater specificity and additional elements an ordered combination of steps using unconventional rules, and the Reexamination Certificates issued and were expressly cited and argued to the panel by Appellants (*see* Doc. 31 (“GB”) at 5-11; Appx1827-27A; Appx1837-39).
2. Whether the panel’s decision that the claims to an invention in the field of data science are merely abstract because “[t]he focus of the claims ... is on selecting certain information, analyzing it using mathematical techniques, and reporting or displaying the results of the analysis” and the claimed inventions are purportedly not a “physical-realm improvement”:

- (a) is inconsistent with prior decisions of the Court finding patent-eligible claims to process steps that, without claiming physical devices, improved the performance of the system as a whole;
- (b) effectively precludes patent-eligibility of groundbreaking innovations in data science; and
- (c) improperly relegates those groundbreaking inventions to trade secret protection.

Based on my professional judgment, I believe the panel decision is contrary to the following decisions of the Supreme Court of the United States and precedents in this Court: *Alice Corp. Pty. Ltd. v. CLS Bank Intern'l*, 134 S. Ct. 2347 (2014); *In re Varma*, 816 F.3d 1352 (Fed. Cir. 2016); *Thales Visionix Inc. v. U.S.*, 850 F.3d 1343 (Fed. Cir. 2017); *Trading Tech. Int'l Inc. v. CQG, Inc.*, No. 2016-1616, 2017 WL 192716 (Fed. Cir. Jan. 18, 2017); *McRO, Inc. v. Bandai Namco Games Am., Inc.*, 837 F.3d 1299 (Fed. Cir. 2016); *Fresenius USA, Inc. v. Baxter Int'l, Inc.*, 721 F.3d 1330 (Fed. Cir. 2013); *Cardpool, Inc. v. Plastic Jungle, Inc.*, 817 F.3d 1316, 1324 (Fed. Cir. 2016).

Dated: June 14, 2018

/s/ Jay P. Kesan

Jay P. Kesan

ATTORNEY OF RECORD FOR APPELLANT

I. INTRODUCTION

There are two issues with the panel's decision in this appeal that are worthy of rehearing.

First, the panel's decision and analysis is based entirely on original claims in the '291 patent that were fully extinguished and surrendered with the issuance—during the briefing of this appeal—of two Reexamination Certificates. In its decision, the panel stated that it was aware of the reexamination proceedings, but that it had not been informed that the reexamined claims had issued. Addendum at 4 n.1. InvestPic did, however, expressly inform the panel of the issuance of the two Reexamination Certificates in its briefs, which InvestPic cited to and included in the Joint Appendix. InvestPic's briefs informed the panel of its authority to consider the reexamined claims, even though the certificates issued after the district court issued its final opinion.

Two appropriate results flow from this situation: either InvestPic's appeal must be reheard to consider the legally operative reexamined claims, or the decision as to the no-longer existing claims must be vacated and remanded. As a matter of law, the current panel opinion, which addresses only the original, but now dead claims, is an unconstitutional advisory opinion that cannot stand.

Second, the panel applied a test for subject-matter eligibility that is inconsistent with those of prior panels and that, if allowed to stand, would eliminate

an entire area of technology—data science—from patent-eligibility. In so doing, the panel again appeared to overlook critical points, including the Court’s prior construction of the “bias parameter” limitation as *not* involving an arithmetic operation. Panel rehearing to reconsider InvestPic’s legally-operable claims in light of these oversights is required. If the panel’s decision was intended to be legally-binding precedent that data science is not patentable subject matter, then *en banc* consideration is needed both because the panel decision cannot be rationally harmonized with other prior decisions of the Court and because a decision that eliminates patent-eligibility for an entire technology area as important to the U.S. economy as data science should only be made by and through the Court sitting *en banc*.

II. ARGUMENT

A. The Panel Decision Cannot Stand Because It Was Based Solely On Original Claims That Were Surrendered During Reexamination While The Case Was Pending On Appeal.

“Federal courts are precluded from deciding ‘questions that cannot affect the rights of litigants in the case before them.’” *Cardpool, Inc. v. Plastic Jungle, Inc.*, 817 F.3d 1316, 1324 (Fed. Cir. 2016) (quoting *North Carolina v. Rice*, 404 U.S. 244, 246 (1971)). Patent claims that have been surrendered cannot be asserted, and thus cannot create a case or controversy under Art. III or the Declaratory Judgment Act. The panel lacked jurisdiction to address the original extinguished claims because

they were entirely and irrevocably superseded by the reexamination certificate claims.

In contrast, because the Reexamination Certificates issued during the appeal, the panel could have addressed the claims, and only those claims, as amended by the two reexaminations of the '291 patent, but did not do so. As the Court has made clear, it is the specific requirements of the claims that control the § 101 analysis. *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299, 1313 (Fed. Cir. 2016). Moreover, this Court has acknowledged that the § 101 inquiry, particularly in the second step of the *Alice* test, often overlaps with other fact-intensive inquiries such as novelty and obviousness. *Berkheimer v. HP Inc.*, No. 2017-1437, 2018 WL 774096 at *5 (Fed. Cir., Feb. 8, 2018) (citing *Mayo Collaborative Servs. v. Prometheus Labs, Inc.*, 566 U.S. 66, 90 (2012)). Thus, changes to the claims-at-issue had a pertinent and material effect on their § 101 eligibility that was not considered by the panel.¹

¹ New and amended claims with multiple additional and discrete structural elements were added in reexamination, and these claims merit development of a factual record before their patent-eligibility is adjudicated. New system claims 32 and 33, for example, add multiple tangible elements explicitly defining the parallel processing computations with detailed data structure such as “first return object of the first investment and the second return object of the second investment both correspond to a time period to preserve a temporal correlation.” [Appx1837-38]. Until *InvestPic* has had the opportunity to develop a factual record demonstrating that these claims were not well-understood, routine, nor conventional in the art, adjudication of patent-eligibility is improper, particularly on a motion for judgment on the pleadings under Fed. R. Civ. P. 12(c). *Berkheimer*, 2018 WL 774096 at *5.

Instead, the panel only addressed the claims as originally issued, which also has a material consequence. Pursuant to 35 U.S.C. § 307(b), any new or amended claims deemed patentable in a reexamination proceeding do “not allow the claims of the original patent some other form of survival. The original claims are dead.” *Seattle Box Co., Inc. v. Industrial Crating & Packing, Inc.*, 731 F.2d 818, 827 (Fed. Cir. 1984). Thus, when the claims of a patent-in-suit are changed by the USPTO before a final mandate is issued ending litigation in federal court, the surrendered original claims no longer have any effect and must no longer be considered. *Fresenius USA, Inc. v. Baxter Int’l, Inc.*, 721 F.3d 1330, 1345-46 (Fed. Cir. 2013).

An action becomes moot and must be dismissed when, during the course of the litigation, it loses its “character as a present live controversy.” *Cardpool*, 817 F.3d 1316, 1324 (Fed. Cir. 2016) (quoting *Allard v. De Lorean*, 884 F.2d 464, 466 (9th Cir. 1989)). Thus, where the claims on which a district court decision are based are cancelled by reexamination or reissue, the case is moot and must be dismissed. *Fresenius*, 721 F.3d at 1338 (citing to *Kaufman Co. v. Lantech, Inc.* 807 F.2d 970, 976 (Fed. Cir. 1986)). When the change in circumstances that rendered the case moot is the result of actions by a non-party, judgments on the mooted claims must be vacated. *Cardpool*, 817 F.3d at 1321 (citing *U.S. Bancorp Mortg. Co. v. Bonner Mall P’ship*, 513 U.S. 18, 23 (1994)).

The application of these principles requires vacatur and remand here. The original claims of the '291 patent were amended in the *inter partes* and *ex parte* reexaminations. The *Inter Partes* Reexamination Certificate issued on September 6, 2017. [Appx1826-27A]. The *Ex Parte* Reexamination Certificate issued on October 30, 2017. [Appx1836-39]. Thus, by no later than October 30, 2017, the original claims no longer existed. *Seattle Box*, 731 F.2d at 827. The surrender of the original claims, which were the only claims considered by the district court, mooted the case at that point. *Fresenius*, 721 F.3d at 1338.

The surrender of the original claims was due to reexaminations, one of which was initiated by IBM and SAS and the other of which was initiated solely by SAS, neither of which was a party to the litigation that gave rise to the present appeal. *In re Varma*, 816 F.3d 1352, 1355 (Fed. Cir. 2016); RB at i (Certificate of Interest). At the time the Reexamination Certificates issued, the case remained on appeal. No mandate had issued, and oral argument was several months away.

The panel had two proper courses of action it could have taken. It could have addressed the amended claims that were presented to it and argued by InvestPic. *See* GB at 5-11. Alternatively, the panel could have vacated and remanded the district court's decision because the original claims, the only claims on which the district court judgment was based, no longer existed. Because the change in circumstances

was due to actions initiated by non-parties, vacatur of the judgment was proper.² *Cardpool*, 817 F.3d at 1321. The one alternative that is not proper is the one taken by the panel, namely, consideration of the surrendered claims without vacatur.

Rehearing is necessary to correct this fundamental error.

B. The Panel Decision Is Inconsistent and Irreconcilable With Prior Panel Decisions and Would Exclude the Entire Field of Data Science from Patent-Eligibility.

The claims of the '291 Patent are directed to predictive computer simulation of investment behavior based on the application of a specific set of rules to user-defined investments under user-defined market conditions to generate and render on a display a more accurate and realistic visual model of the performance of the investor's portfolio. The inventions of the '291 patent are in the field of data science. The undisputed record shows that "data science" is a recognized technological field defined by those skilled in the art as encompassing "major areas of technical work in the field of statistics" including "statistical models" and "computational systems for data analysis." BB at 32; [Appx274-278; Appx488-494]. It was thus further undisputed that data science is not mere math; it merely utilizes the application of mathematical principles. Data science is the process of selecting and assembling

² If, unlike here, "the losing party below, caused the change in circumstances," then vacatur of the district court decision is not required, but the Court must still vacate its own opinion and remand to the district "to determine what actions, if any, are appropriate in light of the reexamined claims." *Cardpool Inc. v. Plastic Jungle, Inc.*, 564 F. App'x 582, 583 (Fed. Cir. 2014).

information in a specified way, analyzing it in a specified way using mathematical operations in a computational system, and rendering a result, usually through a computer. Innovations in computational systems such as InvestPic's are implemented using software, which are concrete logical structures and processes that are not physical in nature. BB at 33-34; GB at 12-13; *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1339 (Fed. Cir. 2016).

Referring to the original but extinguished claims, the panel found that: "The focus of the claims ... is on selecting certain information, analyzing it using mathematical techniques, and reporting or displaying the results of the analysis. That is all abstract." Addendum at 8. This definition would render virtually all of data science, as defined by those of skill in the art, patent-ineligible. Prior panels of the Court have taken a directly contrary view.

For example, the panel here distinguished InvestPic's inventions from that in *McRO*, reasoning that there the "claimed invention was to how the physical display operated (to produce better quality images), unlike (what is present here) a claimed improvement in a mathematical technique with no improved display mechanism." Addendum at 9. The invention in *McRO* did not, however, improve the display *mechanism* at all; it merely provided perceptively improved images on a conventional screen. *McRO*'s "claimed process uses a combined order of specific rules that renders information into a specific format that is then used and applied to

create desired results” on general computers. 837 F.3d at 1314-15. The use of a combined order of specific rules that render investment and risk information into a format used to create desired results (*i.e.*, more accurate risk to return data on a display) is exactly what InvestPic’s claimed inventions accomplish. The ‘291 patent’s inventions are analytically indistinguishable from *McRO*’s invention. In other words, the two-dimensional images on a screen in *McRO* are no different physically or tangibly than the two-dimensional distribution plots generated by the invention of the ‘291 patent. Improved images or content, moving or static, are in the cases of both InvestPic and *McRO* the result of the selection, organization/alteration, analysis, transmission and display of data.

The panel again appeared to overlook critical established points in its reasoning. The panel concluded that the ‘291 patent’s claimed subject matter “is nothing but a series of mathematical calculations based on selected information and the presentation of the results of those calculations (in the plot of a probability distribution function).” Addendum at 3. That conclusion is inconsistent with the Court’s prior ruling that a critical limitation, the “bias parameter,” is “used in selecting samples from the sample space,” but “not in making arithmetic combinations of statistical measures.” *In re Varma*, 816 F.3d 1352, 1359-60 (Fed. Cir. 2016). Thus, like *McRO*, InvestPic’s inventions require specific rules with only incidental application of math (addition of samples) to render an improved, more

useful artificial result using a computer; the invention is not the math itself. Had the panel applied this Court's controlling claim construction from the extant claims, this would have been evident.³

Instead, and perhaps due to these oversights, the panel imposed a “physical-realm improvement” requirement for patent eligibility of data science inventions such as InvestPic's. Addendum at 10. This requirement presents a significant issue that merits the full Court's attention because, if it stands, it represents a marked departure from Supreme Court precedent and prior decisions of this Court, and arguably singles out data science as a technology field for disparate treatment.

Years ago, the Supreme Court rejected a test for patent-eligibility that required a physical machine or transformation because it was an artifact of the “Industrial Age” that is unsuitable for inventions in the “Information Age.” *Bilski v. Kappos*, 561 U.S. 593, 603-604 (2010). This Court has since echoed this rule, which was unchanged by *Alice*. See *Enfish*, 822 F.3d at 1339 (“[m]uch of the advancement made in computer technology consists of improvements to software that, by their

³ The prior claim construction ruling regarding the “bias parameter” is a precedential ruling of the Court that the panel is required to follow until and unless that precedent is overruled by this Court sitting *en banc* or by the Supreme Court. *MGM Portfolio LLC v. Hewlett-Packard Co.*, 812 F.3d 1284, 1291 (Fed. Cir., 2015) (the Court must follow a ruling of law by a prior panel and apply that ruling in subsequent decisions unless relieved of that obligation by an *en banc* order of the Court or a decision of the Supreme Court).

very nature, may not be defined by particular physical features but rather by logical structures and processes”).

More importantly, the panel’s new “physical-realm” requirement cannot be reconciled with the prior decisions of other panels of this Court. For example:

- As noted above, the invention in *McRO* was the application of a process consisting of a specific set of rules to render a better artificial two-dimensional representation of a real-life event (animation of a human speaking) on a screen. The result was rendered on a computer, which was a necessary tool, but neither the computer applying the algorithms nor the screens that displayed the results were used in a non-conventional way or physically altered. 837 F.3d at 1314.

- In *Thales Visionix Inc. v. United States*, the invention was a process consisting of a set of rules, that included mathematical calculations, for “measuring the relative position and orientation of a moving object on a moving reference frame.” 850 F.3d 1343, 1348-49 (Fed. Cir. 2017). There was no alteration of a physical device or new type of mechanical/physical use of any component of the implementing hardware. In fact, the claims considered by the Court did not mention a physical device. *Id.* at 1345-46.

- The invention held to be patent-eligible in *Trading Tech. Int’l Inc. v. CQG, Inc.*, was the display of specified information on a terminal that allowed a user to select a region of the display and set parameters for the trading order she wished

to conduct. No. 2016-1616, 2017 WL 192716 at *1-*2 (Fed. Cir. Jan. 18, 2017). The display terminal was not claimed; it was simply the vehicle through which the results of practicing the invention were rendered. *Id.*

All the foregoing inventions were patent-eligible because they represented improvements to computerized systems as a whole that each resulted in an improved output of data to be applied to solve a technical problem, even if physical components or tangible changes to system hardware were not specified in the claims. *Trading Tech.*, 2017 WL 192716 at *3. There is no meaningful legal distinction between these output-centric inventions and InvestPic's. InvestPic's inventions include a process that implements a specific set of rules in a computerized system, allow a user to set parameters for exactly how physical samples will actually be drawn from real historical data, and render the improved result on a computer display. InvestPic's process includes physical steps, such as resampling from real historical data. GB at 20-21. These features are even more evident in the reexamined claims that the panel did not consider.

Thus, the panel's "physical-realm" requirement if applied to other decisions would render patent-ineligible inventions other panels have found to be patent-eligible. In addition, the panel appears to have invoked a new rationale for patent-eligibility that is at odds with the long-established policies underlying the patent laws.

The fundamental purpose of the patent law is to promote the progress of science and the useful arts by granting inventors exclusive rights to their inventions for a limited time. U.S. CONST., Art. I, § 8 cl. 8. It has long been recognized that the patent laws represent a *quid pro quo*. In exchange for the inventor's limited monopoly, the invention must be described and disclosed to the public. The public thereby gets the benefit of the knowledge of the invention, which then fosters further development in the relevant art. *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1353-54 (Fed. Cir., 2010) (“the *quid pro quo* of the patent grant... ensures that the public receives a meaningful disclosure in exchange for being excluded from practicing an invention for a period of time.”). Trade secrets, by contrast, are just the opposite; they are only protectable if they are not disclosed to the public. *Metallurgical Indus., Inc. v. Fourtek, Inc.*, 790 F.2d 1195, 1199-1200 (5th Cir. 1986) (“the subject matter involved must, in fact, be a secret;” “[p]ublic revelation would, of course, dispel all secrecy”). Trade secret law fosters the benefit to the individual, not the public.

The panel nevertheless reasoned that InvestPic should have relied on trade secret law to protect its inventions. Addendum at 13. Inventions, such as InvestPic's, that are undisputedly groundbreaking and innovative are precisely the type of inventions that, if disclosed to the public, will promote the progress of science as the Founders and Congress intended. The panel's reasoning, if adopted,

will encourage innovators not to disclose their inventions, thereby depriving the public of the benefit Congress intended. After all, there is no incentive to spend thousands of dollars or more to obtain and maintain a patent, only to find, after the invention has been disclosed and trade secret protection long-since lost, that the admittedly groundbreaking invention was never eligible for patent protection.

Moreover, the panel's reasoning represents a fundamental misapplication of Supreme Court precedent. As the Supreme Court has recognized, the concern with limiting the scope of patentable subject matter is preemption: patent law should not inhibit further discovery by tying up the future use of the "building blocks of human ingenuity." *Alice*, 134 S. Ct. at 2344. Under the panel's reasoning, however, further discovery would be inhibited because the knowledge regarding valuable innovations would be intentionally unavailable to the public. That is precisely the opposite of what § 101 jurisprudence seeks to achieve. Patent eligibility must be considered in light of the policies underlying the patent laws, *see id.*, and the availability of trade secret protection cannot be used to justify—20 years after the fact in this case—an interpretation of § 101 that contravenes those established policies.

These conflicts must be resolved. It is well-known that there is great confusion and uncertainty in the § 101 jurisprudence. *See Berkheimer v. HP, Inc.*, 2018 WL 2437140, at *4-5 (Fed. Cir., May 31, 2018) (Lourie, J., Concurring).

Precedent that creates further discord in panel decisions and infuses new policy arguments will only exacerbate that confusion and uncertainty.

Commentators have noted the potential grave impact of the panel’s decision in this case. See Michael Borella, *SAP America, Inc. v. InvestPic, LLC* (*Fed. Cir. 2018*), PATENT DOCS (May 20, 2018), <http://www.patentdocs.org/2018/05/sap-america-inc-v-investpic-llc-fed-cir-2018.html> (last visited June 11, 2018) (“[V]irtually any invention involving collection, processing, and output of information is ineligible. Clearly, this is improper”). The Director of the USPTO has echoed the caution against over-extending – as the panel has done here – the Supreme Court’s exception to patent-eligibility. See Gene Quinn, *Iancu: People have a Right to Know what is Patent Eligible*, IPWATCHDOG (June 11, 2018), <http://www.ipwatchdog.com/2018/06/11/iancu-right-know-patent-eligible/id=98326/> (last visited June 13, 2018) (“‘We must be careful not to overread the Supreme Court’s exclusions,’ Iancu said”).

If the panel’s divergent reasoning is the result of oversight, rehearing is appropriate to correct the oversights. If, on the other hand, the panel’s ruling is designed to amend or set new requirements for patent-eligibility, or to target a single technology area—data science—for disparate treatment, that is a decision that should only be made by an *en banc* Court.

CONCLUSION

For the foregoing reasons, panel rehearing and/or rehearing *en banc* is necessary to address points of fact and law overlooked or misapprehended by the panel, to answer the precedent-setting questions of exceptional importance regarding the jurisprudence of patent-eligible subject matter, and to conform the district court's decision with the controlling precedent of this Court and the Supreme Court.

Respectfully submitted,

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June 14, 2018

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CERTIFICATE OF COMPLIANCE

I certify that this petition complies with the Court's typeface requirements and page limitations for such petitions. The typeface is 14-point Times New Roman, which is a proportional type font with serifs. The brief contains 3830 words in the portions of the petition not exempt from the word count limitations.

/s/ Cecil E. Key _____
Cecil E. Key

ADDENDUM

United States Court of Appeals for the Federal Circuit

SAP AMERICA, INC.,
Plaintiff-Appellee

v.

INVESTPIC, LLC,
Defendant-Appellant

2017-2081

Appeal from the United States District Court for the Northern District of Texas in No. 3:16-cv-02689-K, Judge Ed Kinkeade.

Decided: May 15, 2018

KATHERINE VIDAL, Winston & Strawn LLP, Menlo Park, CA, argued for plaintiff-appellee. Also represented by MICHAEL A. BITTNER, THOMAS M. MELSHEIMER, Dallas, TX; TYLER JOHANNES, Chicago, IL; STEFFEN NATHANAEL JOHNSON, Washington, DC; JOHN D. VANDENBERG, Klarquist Sparkman, LLP, Portland, OR.

CECIL E. KEY, DiMuroGinsberg PC – DGKeyIP Group, Tysons Corner, VA, argued for defendant-appellant. Also represented by TERESA MARIE SUMMERS; JAY P. KESAN, McLean, VA.

Before LOURIE, O'MALLEY, and TARANTO, *Circuit Judges*.

TARANTO, *Circuit Judge*.

InvestPic, LLC's U.S. Patent No. 6,349,291 describes and claims systems and methods for performing certain statistical analyses of investment information. We addressed this patent in *In re Varma*, 816 F.3d 1352 (Fed. Cir. 2016), where we construed key claim terms and partly reversed and partly vacated the Patent Trial and Appeal Board's cancellations of various claims in two reexamination proceedings involving issues of anticipation and obviousness under 35 U.S.C. §§ 102 and 103. The present appeal involves a declaratory judgment action filed in 2016 by SAP America, Inc., which alleges, among other things, that the claims of the '291 patent are invalid because their subject matter is ineligible for patenting under 35 U.S.C. § 101. When SAP moved for a judgment on the pleadings on that ground, the district court granted the motion, holding all claims ineligible under § 101 and hence invalid. *SAP Am., Inc. v. InvestPic, LLC*, 260 F. Supp. 3d 705, 718–19 (N.D. Tex. 2017).

We affirm. We may assume that the techniques claimed are “[g]roundbreaking, innovative, or even brilliant,” but that is not enough for eligibility. *Ass'n for Molecular Pathology v. Myriad Genetics, Inc.*, 569 U.S. 576, 591 (2013); *accord buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1352 (Fed. Cir. 2014). Nor is it enough for subject-matter eligibility that claimed techniques be novel and nonobvious in light of prior art, passing muster under 35 U.S.C. §§ 102 and 103. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 566 U.S. 66, 89–90 (2012); *Synopsys, Inc. v. Mentor Graphics Corp.*, 839 F.3d 1138, 1151 (Fed. Cir. 2016) (“[A] claim for a *new* abstract idea is still an abstract idea. The search for a § 101 inventive concept is thus distinct from demonstrating § 102 novel-

SAP AMERICA, INC. v. INVESTPIC, LLC

3

ty.”); *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1315 (Fed. Cir. 2016) (same for obviousness) (*Symantec*). The claims here are ineligible because their innovation is an innovation in ineligible subject matter. Their subject is nothing but a series of mathematical calculations based on selected information and the presentation of the results of those calculations (in the plot of a probability distribution function). No matter how much of an advance in the finance field the claims recite, the advance lies entirely in the realm of abstract ideas, with no plausibly alleged innovation in the non-abstract application realm. An advance of that nature is ineligible for patenting.

I

A

Describing aspects of existing practices declared to be in need of improvement, the '291 patent states that “conventional financial information sites” on the World Wide Web “perform rudimentary statistical functions” that “are not useful to investors in forecasting the behavior of financial markets because they rely upon assumptions that the underlying probability distribution function (“PDF”) for the financial data follows a normal or Gaussian distribution.” ’291 patent, col. 1, lines 24–36. That assumption, the patent says, “is generally false”: “the PDF for financial market data is heavy tailed (i.e., the histograms of financial market data typically involve many outliers containing important information),” rather than symmetric like a normal distribution. *Id.*, col. 1, lines 36–37, 41–44. Moreover, “statistical measures such as the standard deviation provide no meaningful insight into the distribution of financial data.” *Id.*, col. 1, lines 44–46. As a result, the patent asserts, conventional “analyses understate the true risk and overstate [the] potential rewards for an investment or trading strategy.” *Id.*, col. 1, lines 53–54.

To remedy those deficiencies, the patent proposes a technique that “utilizes resampled statistical methods for the analysis of financial data,” which do not assume a normal probability distribution. *Id.*, col. 1, line 65 through col. 2, line 3. One such method is a bootstrap method, which estimates the distribution of data in a pool (a sample space) by repeated sampling of the data in the pool. *Id.*, col. 10, lines 20–38. A sample space in a bootstrap method can be defined by selecting a specific investment or a particular period of time. *Id.*, col. 12, lines 62–66. Data samples are drawn from the sample space “with replacement”: samples are drawn from the sample space and then returned to the pool before the next sample is drawn. *Id.*, col. 10, lines 60–62, col. 11, lines 18–20. The patent also describes using a “bias parameter” to “specif[y] the degree of randomness in the resampling process.” *Id.*, col. 11, lines 55–58. In order to “perform a resampled statistical analysis,” a client “may specify a number of parameters including an investment or investments (e.g., a portfolio) to be analyzed, a financial function, a sample size, a period, a type of plot and a bias parameter, which controls the randomness of the resampling process.” *Id.*, col. 2, lines 50–56.

Claims 1, 11, and 22 are the remaining independent claims of the '291 patent.¹ Claims 1 and 11 are method claims. Claim 1 reads as follows:

1. A method for calculating, analyzing and displaying investment data comprising the steps of:

¹ In this court, InvestPic has quoted various amended or added claims it has proposed in an ex parte reexamination. We have not been informed that those claims have issued. Those claims are not before us.

SAP AMERICA, INC. v. INVESTPIC, LLC

5

- (a) selecting a sample space, wherein the sample space includes at least one investment data sample;
- (b) generating a distribution function using a re-sampled statistical method and a bias parameter, wherein the bias parameter determines a degree of randomness in a resampling process; and,
- (c) generating a plot of the distribution function.

Id., col. 16, lines 35–43. Claim 11 states the following:

11. A method for providing statistical analysis of investment data over an information network, comprising the steps of:

- (a) storing investment data pertaining to at least one investment;
- (b) receiving a statistical analysis request corresponding to a selected investment;
- (c) receiving a bias parameter, wherein the bias parameter determines a degree of randomness in a resampling process; and,
- (d) based upon investment data pertaining to the selected investment, performing a resampled statistical analysis to generate a resampled distribution.

Id., col. 17, lines 17–30.

Claim 22 is a system claim and reads as follows:

22. A system for providing statistical analysis of investment information over an information network comprising:

- a financial data database for storing investment data;

a client database;

a plurality of processors collectively arranged to perform a parallel processing computation, wherein the plurality of processors is adapted to:

receive a statistical analysis request corresponding to a selected investment;

based upon investment data pertaining to the selected investment, perform a resampled statistical analysis to generate a resampled distribution; and,

provide a report of the resampled distribution.

Id., col. 18, lines 14–27.

B

In May 2017, the district court granted SAP's motion for judgment on the pleadings. *SAP*, 260 F. Supp. 3d at 718–19. The court concluded that the claims of the '291 patent are directed to “performing statistical analysis,” specified using words in the claims and using more technical, mathematical notation in the written description. *Id.* at 711. Because mathematical calculations and formulas are not patent eligible, the court concluded, all of the claims of the '291 patent, including the dependent claims (which contain more specific mathematical steps) are not directed to patent-eligible subject matter. *Id.* at 714–15, 717–18. The court then ruled that the claims add no inventive concept to the mathematics to which they are directed—merely (a) further-specified mathematical calculations and (b) pre- and post-solution activities like use of the internet or generic computer hardware. *Id.* at 715–18.

The district court issued its final judgment on May 18, 2017, and InvestPic filed its notice of appeal on May 22,

SAP AMERICA, INC. v. INVESTPIC, LLC

7

2017, within the 30-day time limit. *See* 28 U.S.C. § 2107(a). We therefore have jurisdiction to hear this appeal pursuant to 28 U.S.C. § 1295(a)(1).

II

We review a judgment on the pleadings under Rule 12(c) de novo. *See Hughes v. The Tobacco Inst., Inc.*, 278 F.3d 417, 420 (5th Cir. 2001). “The standard for deciding a Rule 12(c) motion is the same as a Rule 12(b)(6) motion to dismiss. The court accepts all well-pleaded facts as true, viewing them in the light most favorable to the plaintiff,” which “must plead enough facts to state a claim to relief that is plausible on its face.” *Guidry v. American Public Life Ins. Co.*, 512 F.3d 177, 180 (5th Cir. 2007) (internal citations and quotation marks omitted).

Eligibility under 35 U.S.C. § 101 is a question of law, based on underlying facts. *See Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1125 (Fed. Cir. 2018); *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1364–65 (Fed. Cir. 2018). Like other legal questions based on underlying facts, this question may be, and frequently has been, resolved on a Rule 12(b)(6) or (c) motion where the undisputed facts, considered under the standards required by that Rule, require a holding of ineligibility under the substantive standards of law. *See, e.g., Two-Way Media Ltd. v. Comcast Cable Commc’ns, LLC*, 874 F.3d 1329, 1341 (Fed. Cir. 2017); *RecogniCorp, LLC v. Nintendo Co.*, 855 F.3d 1322, 1328 (Fed. Cir. 2017); *Fair-Warning IP, LLC v. Iatric Sys., Inc.*, 839 F.3d 1089, 1098 (Fed. Cir. 2016); *Genetic Techs. Ltd. v. Merial L.L.C.*, 818 F.3d 1369, 1380 (Fed. Cir. 2016); *Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 717 (Fed. Cir. 2014). This is such a case.

Section 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.” 35 U.S.C. § 101. The provision, however, “contains an important implicit exception: Laws of nature, natural phenomena, and abstract ideas are not patentable.” *Alice Corp. Pty. Ltd. v. CLS Bank Int’l*, 134 S. Ct. 2347, 2354 (2014). A claim falls outside § 101 where (1) it is “directed to” a patent-ineligible concept, *i.e.*, a law of nature, natural phenomenon, or abstract idea, and (2), if so, the particular elements of the claim, considered “both individually and ‘as an ordered combination,’” do not add enough to “‘transform the nature of the claim’ into a patent-eligible application.” *Id.* at 2355; *see Mayo*, 566 U.S. at 78–79. The first stage of the *Alice* inquiry looks at the “focus” of the claims, their “character as a whole”; and the second stage of the inquiry (where reached) looks more precisely at what the claim elements add—specifically, whether, in the Supreme Court’s terms, they identify an “inventive concept” in the application of the ineligible matter to which (by assumption at stage two) the claim is directed. *Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350, 1353–1356 (Fed. Cir. 2016) (quoting *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327, 1335–36 (Fed. Cir. 2016)); *see also Intellectual Ventures I LLC v. Capital One Fin. Corp.*, 850 F.3d 1332, 1338 (Fed. Cir. 2017) (*Capital One*); *BASCOM Glob. Internet Servs., Inc. v. AT&T Mobility LLC*, 827 F.3d 1341, 1348 (Fed. Cir. 2016); *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1346 (Fed. Cir. 2015).

A

The claims in this case are directed to abstract ideas. The focus of the claims, as is plain from their terms, quoted above, is on selecting certain information, analyzing it using mathematical techniques, and reporting or displaying the results of the analysis. That is all abstract.

We have explained that claims focused on “collecting information, analyzing it, and displaying certain results

SAP AMERICA, INC. v. INVESTPIC, LLC

9

of the collection and analysis” are directed to an abstract idea. *Electric Power*, 830 F.3d at 1353. “Information as such is an intangible,” hence abstract, and “collecting information, including when limited to particular content (which does not change its character as information), [i]s within the realm of abstract ideas.” *Id.* (citing cases). So, too, is “analyzing information . . . by mathematical algorithms, without more.” *Id.* at 1354 (citing cases, including *Parker v. Flook*, 437 U.S. 584 (1978), and *Gottschalk v. Benson*, 409 U.S. 63 (1972)). And “merely presenting the results of abstract processes of collecting and analyzing information, without more (such as identifying a particular tool for presentation), is abstract as an ancillary part of such collection and analysis.” *Id.* (citing cases). The claims here are directed at abstract ideas under those principles.

Contrary to InvestPic’s contention, the claims here are critically different from those we determined to be patent eligible in *McRO, Inc. v. Bandai Namco Games America Inc.*, 837 F.3d 1299 (Fed. Cir. 2016). The claims in *McRO* were directed to the creation of something physical—namely, the display of “lip synchronization and facial expressions” of animated characters on screens for viewing by human eyes. *Id.* at 1313. The claimed improvement was to how the physical display operated (to produce better quality images), unlike (what is present here) a claimed improvement in a mathematical technique with no improved display mechanism. The claims in *McRO* thus were not abstract in the sense that is dispositive here. And those claims also avoided being “abstract” in another sense reflected repeatedly in our cases (based on a contrast not with “physical” but with “concrete”): they had the specificity required to transform a claim from one claiming only a result to one claiming a way of achieving it. *McRO*, 837 F.3d at 1314; see *Finjan, Inc. v. Blue Coat Sys., Inc.*, 879 F.3d 1299, 1305–06 (Fed. Cir. 2018); *Apple, Inc. v. Ameranth, Inc.*, 842 F.3d 1229,

1241 (Fed. Cir. 2016); *Affinity Labs of Texas, LLC v. DIRECTV, LLC*, 838 F.3d 1253, 1265 (Fed. Cir. 2016); see also *Two-Way Media*, 874 F.3d at 1337; *Secured Mail Solutions LLC v. Universal Wilde, Inc.*, 873 F.3d 905, 909 (Fed. Cir. 2017); *RecogniCorp*, 855 F.3d at 1326; *Syman-tec*, 838 F.3d at 1316.

Similarly, in *Thales Visionix Inc. v. United States*, 850 F.3d 1343, 1348–49 (Fed. Cir. 2017), the improvement was in a physical tracking system. The use of mathematics to achieve an improvement no more changed the conclusion that improved physical things and actions were the subject of the claimed advance than it did in *Diamond v. Diehr*, 450 U.S. 175 (1981). Here, in contrast, the focus of the claims is not a physical-realm improvement but an improvement in wholly abstract ideas—the selection and mathematical analysis of information, followed by reporting or display of the results.

Contrary to InvestPic’s suggestion, it does not matter to this conclusion whether the information here is information about real investments. As many cases make clear, even if a process of collecting and analyzing information is “limited to particular content” or a particular “source,” that limitation does not make the collection and analysis other than abstract. *Electric Power*, 830 F.3d at 1353, 1355 (citing cases). Moreover, the “investment” character of this information simply invokes a separate category of abstract ideas involved in *Alice* and many of our cases—“the creation and manipulation of legal obligations such as contracts involved in fundamental economic practices.” *Id.* at 1354; *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1363 (Fed. Cir. 2015) (“At best, the claims describe the automation of the fundamental economic concept of offer-based price optimization through the use of generic-computer functions.”); see *Credit Acceptance Corp. v. Westlake Servs.*, 859 F.3d 1044, 1055 (Fed. Cir. 2017); *buySAFE*, 765 F.3d at 1353–54.

InvestPic also argues that the '291 patent's claims are similar to others we have concluded were patentable at the first stage of the *Alice* inquiry, specifically the claims in *Enfish* and *BASCOM*. In those cases, claims were patent-eligible because they were directed to improvements in the way computers and networks carry out their basic functions. *Enfish*, 822 F.3d at 1335–36; *BASCOM*, 827 F.3d at 1348–49; see *Electric Power*, 830 F.3d at 1354. The claims in *Visual Memory LLC v. NVIDIA Corp.*, 867 F.3d 1253, 1259–60 (Fed. Cir. 2017), were similar. Here, the focus of the claims is not any improved computer or network, but the improved mathematical analysis; and indeed, the specification makes clear that off-the-shelf computer technology is usable to carry out the analysis. See, e.g., '291 patent, col. 4, lines 13–22, col 5, lines 28–37, col. 6, lines 13–16, col. 14, lines 50–61. The claims of the '291 patent thus fit into the familiar class of claims that do not “focus . . . on [] an improvement in computers as tools, but on certain independently abstract ideas that use computers as tools.” *Electric Power*, 830 F.3d at 1354.

B

Because the claims are directed to an abstract idea, we must proceed to the second stage of the *Alice* inquiry. We readily conclude that there is nothing in the claims sufficient to remove them from the class of subject matter ineligible for patenting and transform them into an eligible application. What is needed is an inventive concept in the non-abstract application realm. Here, all of the claim details identified by InvestPic fall into one or both of two categories: they are themselves abstract; or there are no factual allegations from which one could plausibly infer that they are inventive. In these circumstances, judgment on the pleadings that the claims recite no “inventive concept” is proper.

We have already noted that limitation of the claims to a particular field of information—here, investment infor-

mation—does not move the claims out of the realm of abstract ideas. Dependent method claims 2–7 and 10 add “limitations . . . [that] require[] the resampling method to be a bootstrap method.” *SAP*, 260 F. Supp. 3d at 715. Likewise, “[c]laims 8 and 9 add limitations that the statistical method is a jackknife method and a cross validation method.” *Id.* at 716. Because bootstrap, jackknife, and cross-validation methods are all “particular methods of resampling,” those features simply provide further narrowing of what are still mathematical operations. They add nothing outside the abstract realm. *See Mayo*, 566 U.S. at 88–89 (stating that narrow embodiments of ineligible matter, citing mathematical ideas as an example, are still ineligible); *buySAFE*, 765 F.3d at 1353 (same). Dependent method claims 12–21 are no different.

Some of the claims require various databases and processors, which are in the physical realm of things. But it is clear, from the claims themselves and the specification, that these limitations require no improved computer resources InvestPic claims to have invented, just already available computers, with their already available basic functions, to use as tools in executing the claimed process. Although counsel for InvestPic contended at oral argument that the inclusion of a “parallel processing” computing architecture in claim 22 should render the claim patent eligible, Oral Arg. at 13:10–13:45, neither the claims nor the specification calls for any parallel processing system different from those available in existing systems. Rather, to the extent that parallel processing is discussed in the specification, it is characterized as generic parallel processing components—not even asserted to be an invention of InvestPic—on which the claimed method could run. ’291 patent, col. 14, lines 50–61.

In accordance with the Supreme Court’s conclusion in *Alice*, 134 S. Ct. at 2358–59, this court has ruled many times that “such invocations of computers and networks

SAP AMERICA, INC. v. INVESTPIC, LLC

13

that are not even arguably inventive are insufficient to pass the test of an inventive concept in the application of an abstract idea,” *Electric Power*, 830 F.3d at 1355 (internal quotation marks omitted) (citing cases). See, e.g., *Credit Acceptance*, 859 F.3d at 1055–56; *Smart Sys. Innovations, LLC v. Chicago Transit Auth.*, 873 F.3d 1364, 1374–75 (Fed. Cir. 2017); *Secured Mail*, 873 F.3d at 911–12. Under those decisions, an invocation of such computers and networks is not enough to establish the required “inventive concept” in application. Indeed, we think it fair to say that an invocation of already-available computers that are not themselves plausibly asserted to be an advance, for use in carrying out improved mathematical calculations, amounts to a recitation of what is “well-understood, routine, [and] conventional.” *Mayo*, 566 U.S. at 73. Here, that conclusion is properly drawn under the standards governing Rule 12(c) motions.

There is, in short, nothing “inventive” about any claim details, individually or in combination, that are not themselves in the realm of abstract ideas. In the absence of the required “inventive concept” in application, the claims here are legally equivalent to claims simply to the asserted advance in the realm of abstract ideas—an advance in mathematical techniques in finance. Under the principles developed in interpreting § 101, patent law does not protect such claims, without more, no matter how groundbreaking the advance. An innovator who makes such an advance lacks patent protection for the advance itself. If any such protection is to be found, the innovator must look outside patent law in search of it, such as in the law of trade secrets, whose core requirement is that the idea be kept secret from the public.

III

For the foregoing reasons, we affirm the judgment of the district court.

AFFIRMED