No. 15-1182

IN THE
Supreme Court of the United States

SEQUENOM, INC.,
Petitioner,
v.
ARIOSA DIAGNOSTICS, INC., *ET AL.*,
Respondents.

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

BRIEF OF MICROSOFT CORPORATION AS *AMICUS CURIAE* IN SUPPORT OF PETITIONER

JEFFREY A. LAMKEN
Counsel of Record
MICHAEL G. PATTILLO, JR.
MOLOLAMKEN LLP
The Watergate, Suite 660
600 New Hampshire Ave., NW
Washington, D.C. 20037
(202) 556-2000
jlamken@mololamken.com

Counsel for Amicus Curiae

WILSON-EPES PRINTING CO., INC. – (202) 789-0096 – WASHINGTON, D.C. 20002

TABLE OF CONTENTS

	Page
Interest of *Amicus Curiae*	1
Reasons for Granting the Petition	2
I. Courts Are in Disarray Over How To Apply the *Mayo/Alice* Test	5
A. District Courts Require Guidance Regarding the Meaning and Role of "Purely Conventional" Activity	7
B. The Federal Circuit Cannot Resolve the Uncertainty	12
II. The Issue Is Important and Recurring	14
III. The Court Should Clarify That Only Limitations That Are Inherent or Intrinsic to the Abstract Idea Are "Purely Conventional"	19
Conclusion	23

TABLE OF AUTHORITIES

Page(s)

CASES

Alice Corp. Pty. Ltd. v. *CLS Bank Int'l*, 134 S. Ct. 2347 (2014) ..... *passim*

Allvoice Devs. US, LLC v. *Microsoft Corp.*, 612 F. App'x 1009 (Fed. Cir.), cert. denied, 136 S. Ct. 697 (2015) 16

Ameritox, Ltd. v. *Millennium Health, LLC*, 88 F. Supp. 3d 885 (W.D. Wis. 2015) 3, 7

buySAFE, Inc. v. *Google, Inc.*, 765 F.3d 1350 (Fed. Cir. 2014) 17

Cal. Inst. of Tech. v. *Hughes Commc'ns Inc.*, 59 F. Supp. 3d 974 (C.D. Cal. 2014) ..... *passim*

CMG Fin. Servs., Inc. v. *Pac. Tr. Bank, F.S.B.*, 50 F. Supp. 3d 1306 (C.D. Cal. 2014) 11

Content Extraction & Transmission LLC v. *Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343 (Fed. Cir. 2014), cert. denied, 136 S. Ct. 119 (2015) 17

DDR Holdings, LLC v. *Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014) 16

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

Digitech Image Techs., LLC v. *Elecs. for Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014) 17

Exergen Corp. v. *Brooklands Inc.*, No. 12-12243, 2015 WL 5096464 (D. Mass. Aug. 28, 2015) 11

TABLE OF AUTHORITIES—Continued

Page(s)

Gametek LLC v. *Zynga, Inc.*, No. CV-13-2546, 2014 WL 1665090 (N.D. Cal. Apr. 25, 2014) 7

Gottschalk v. *Benson*, 409 U.S. 63 (1972) 11

HealthTrio, LLC v. *Aetna, Inc.*, No. 12-CV-03229, 2015 WL 4005985 (D. Colo. June 17, 2015) 7

Intellectual Ventures I LLC v. *Capital One Bank (USA)*, 792 F.3d 1363 (Fed. Cir. 2015) 16

Internet Patents Corp. v. *Active Network, Inc.*, 790 F.3d 1343 (Fed. Cir. 2015) 16

KSR Int'l Co. v. *Teleflex Inc.*, 550 U.S. 398 (2007) 12

Mayo Collaborative Servs. v. *Prometheus Labs., Inc.*, 132 S. Ct. 1289 (2012) ..... *passim*

McRO, Inc. v. *Namco Bandai Games Am., Inc.*, No. CV-12-10327, 2014 WL 4749601 (C.D. Cal. Sept. 22, 2014) 8, 9, 12

Mortg. Grader, Inc. v. *First Choice Loan Servs. Inc.*, 811 F.3d 1314 (Fed. Cir. 2016) 16

OIP Techs., Inc. v. *Amazon.com, Inc.*, 788 F.3d 1359 (Fed. Cir.), cert. denied, 136 S. Ct. 701 (2015) 16

Parker v. *Flook*, 437 U.S. 584 (1978) 5, 11

Planet Bingo, LLC v. *VKGS LLC*, 576 F. App'x 1005 (Fed. Cir. 2014) 17

Thales Visionix, Inc. v. *United States*, 122 Fed. Cl. 245 (2015) 9, 10, 12

TABLE OF AUTHORITIES—Continued

Page(s)

Ultramercial, Inc. v. *Hulu, LLC*, 772 F.3d 709 (Fed. Cir. 2014), cert. denied, 135 S. Ct. 2907 (2015) 17

Vehicle Intelligence & Safety LLC v. *Mercedes-Benz USA, LLC*, — F. App'x —, 2015 WL 9461707 (Fed. Cir. 2015) (per curiam) 16

Versata Dev. Grp., Inc. v. *SAP Am., Inc.*, 793 F.3d 1306 (Fed. Cir. 2015) 7

STATUTES

35 U.S.C. § 101 ..... *passim*

Leahy-Smith America Invents Act, § 18, Pub. L. No. 112-29, 125 Stat. 284 (2011) 17

OTHER AUTHORITIES

Julie E. Cohen & Mark A. Lemley, *Patent Scope & Innovation in the Software Industry*, 89 Cal. L. Rev. 1 (2001) 19

Dep't of Energy, *The History of the Light Bulb* (Nov. 22, 2013), http://www.energy.gov/articles/history-light-bulb 15

President's Info. Tech. Advisory Comm., Nat'l Coordination Office for Computing, Info. & Commc'ns, *Information Technology Research: Investing in Our Future* (1999), available at http://research.microsoft.com/en-us/um/people/gray/papers/pitac_report_99_2_24.pdf 18

TABLE OF AUTHORITIES—Continued

Page(s)

Robert R. Sachs, *#AliceStorm: When It Rains, It Pours . . .* (Jan. 22, 2016), http://www.bilskiblog.com/blog/2016/01/alicestorm-when-it-rains-it-pours.html..... 17

SIIA, *The U.S. Software Industry: An Engine for Economic Growth and Employment* (2014), https://www.siia.net/Adin/FileManagement.aspx/LinkClick.aspx?fileticket=yLPW0SrBfk4%3D&portalid=0..... 18

IN THE

Supreme Court of the United States

NO. 15-1182

SEQUENOM, INC.,

Petitioner,

v.

ARIOSA DIAGNOSTICS, INC., *ET AL.*,

Respondents.

On Petition for a Writ of Certiorari to the United States Court of Appeals for the Federal Circuit

BRIEF OF MICROSOFT CORPORATION AS *AMICUS CURIAE* IN SUPPORT OF PETITIONER

INTEREST OF *AMICUS CURIAE*[1]

Microsoft Corporation is a leader in the technology industry and an active participant in the patent system.

[1] Pursuant to Supreme Court Rule 37.6, counsel for *amicus curiae* states that no counsel for a party authored this brief in whole or in part, and no party or its counsel made a monetary contribution intended to fund the preparation or submission of this brief. No person other than *amicus* or its counsel made a monetary contribution to this brief's preparation or submission. The parties have filed letters with the Clerk consenting to the filing of *amicus* briefs in support of either party or neither party. Counsel of record received timely notice of *amicus*'s intent to file this brief.

Since its founding in 1975, Microsoft has developed and marketed a wide range of software, services, and hardware products, including the flagship Windows operating system, the Office suite of productivity applications, the Surface tablet computer, and the Xbox gaming system.

This case presents important questions concerning the standard for patent-eligibility under 35 U.S.C. § 101—in particular, the proper application of the two-step test adopted in *Mayo Collaborative Services* v. *Prometheus Laboratories, Inc.*, 132 S. Ct. 1289 (2012), and *Alice Corp. Pty. Ltd.* v. *CLS Bank International*, 134 S. Ct. 2347 (2014). While this case involves a patent for a biomedical innovation, it also raises issues of tremendous significance for the computer industry. Since *Alice*, lower courts have routinely invalidated computer-implemented patents under § 101. Their inconsistent interpretation and application of the *Mayo/Alice* test, moreover, demonstrates a pressing need for further guidance from this Court.

Amicus has a profound interest in ensuring the *Mayo/Alice* test is appropriately defined and applied. As a leading technology company, *amicus* spends $11.4 billion annually on research and development; it holds more than 32,000 U.S. patents, most relating to computer-implemented inventions. *Amicus* is also frequently a defendant in infringement suits asserting patents for computer-implemented inventions. *Amicus* thus has unique and balanced insights on the issues presented by this case.

REASONS FOR GRANTING THE PETITION

Current law governing patent-eligibility under 35 U.S.C. § 101 is uncertain and in upheaval. Some even warn of a "crisis of patent law." Pet. App. 78a (Lourie, J., concurring). In *Mayo Collaborative Services* v. *Prome-*

theus Laboratories, Inc., 132 S. Ct. 1289 (2012), and *Alice Corp. Pty. Ltd.* v. *CLS Bank International*, 134 S. Ct. 2347 (2014), this Court adopted a two-step test for determining patent-eligibility under §101. The purpose of that test is straightforward: It is a framework for distinguishing patent claims that seek to monopolize a patent-ineligible abstract *concept* from claims that recite a "patent-eligible *application*" of any such concept. *Alice*, 134 S. Ct. at 2357 (emphasis added). But lower courts have lamented that *Mayo* and *Alice* leave "the boundaries of §101 undefined." *Cal. Inst. of Tech.* v. *Hughes Commc'ns Inc.*, 59 F. Supp. 3d 974, 986 (C.D. Cal. 2014). They "are understandably seeking more concrete contours in the application of §101." *Ameritox, Ltd.* v. *Millennium Health, LLC*, 88 F. Supp. 3d 885, 903 (W.D. Wis. 2015).

Lacking further guidance from this Court, the lower courts have struggled with specific phrases and perceived tensions within this Court's §101 opinions. In particular, this Court stated in *Mayo* that "[p]urely 'conventional or obvious'" steps are "normally not sufficient to transform an unpatentable law of nature into a patent-eligible application of such a law." 132 S. Ct. at 1298. Courts are in disarray over how to reconcile that with other principles this Court has announced—namely, that courts must "consider[] *all* claim elements, both individually and *in combination*," *Alice*, 134 S. Ct. at 2355 n.13 (emphasis added), and that "[i]t is inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements" in a §101 analysis, *Diamond* v. *Diehr*, 450 U.S. 175, 188 (1981).

Ultimately, many courts have concluded that, in the wake of *Mayo* and *Alice*, they are now "obliged to divorce" any underlying patent-ineligible concept from the

claim limitations that implement the concept. Pet. App. 81a (Lourie, J., concurring). They thus disregard any steps that are not, in and of themselves, "new and useful." Pet. App. 12a. Indeed, some courts simply ignore any steps known in the prior art. But that approach misapprehends *Mayo* and *Alice*. Those cases reaffirmed the "general rule," previously established in *Diehr*, that "patent claims must be considered *as a whole*." *Alice*, 134 S. Ct. at 2355 n.3 (quotation marks omitted, emphasis added). Nor does that approach make sense as a test for patent-eligibility: The fact that certain "steps are well-known" does not mean the claim as a whole constitutes nothing more than a natural phenomenon or abstract idea. Pet. App. 78a (Lourie, J., concurring).

Contrary to the view of some courts, this Court's directions regarding "purely conventional" activity do not require courts to divvy claims up and disregard any step found in the prior art. Rather, *Mayo* and *Alice* used the phrase "purely conventional" to describe steps that were either inherent in the underlying idea—and thus inseparable from it—or so clearly suggested by it that the claim amounted to "simply stating the [patent-ineligible concept] while adding the words 'apply it.'" *Alice*, 134 S. Ct. at 2357 (quotation marks omitted). That is consistent with the purposes of § 101. If a step is inherent in the concept itself, then by definition it cannot "add *enough*" to the claim's statement of that concept to make it a patent-eligible *application* of the concept. *Mayo*, 132 S. Ct. at 1297.

The petition in this case explains why the uncertain state of § 101 law threatens the "vital field of American healthcare innovation." Pet. 11. But the problem is much broader—uncertainty over § 101 potentially threatens inventions in all industries, because "[a]t some level, *all*

inventions * * * embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Alice*, 134 S. Ct. at 2354 (quotation marks omitted, emphasis added). And that threat is "particularly" problematic for computer-implemented inventions, including software. Pet. App. 76a (Lourie, J., concurring). Advances in computing often are achieved by combining new conceptual insights—insights that might be patent-ineligible abstract ideas standing alone—together with known devices or techniques. Under the erroneous view that all previously-known steps must be disregarded, computer-implemented inventions are at significant risk.

Some winnowing of unmeritorious patents following *Mayo* and *Alice* is appropriate and expected. But the lower courts' application of the §101 test has become inconsistent and unpredictable. That has a significant effect on incentives for innovation. The computer industry is a leading driver of technological innovation and growth—its advances benefit all sectors of the economy. Like the biomedical field, the computer industry requires a "predictable, consistent, and uniform" system of patent protection to sustain the investment that fuels our Nation's growth. *Caltech*, 59 F. Supp. 3d at 986. This Court's intervention is necessary.

I. COURTS ARE IN DISARRAY OVER HOW TO APPLY THE *MAYO/ALICE* TEST

Although "[l]aws of nature, natural phenomena, and abstract ideas" are not themselves patent-eligible, *Alice*, 134 S. Ct. at 2354, "it is equally clear that a process is not unpatentable simply because it contains a law of nature" or abstract idea, *Parker* v. *Flook*, 437 U.S. 584, 590 (1978). Indeed, "[a]t some level, all inventions * * * embody, use, reflect, rest upon, or apply laws of nature,

natural phenomena, or abstract ideas." *Alice*, 134 S. Ct. at 2354 (quotation marks omitted).

This Court's decisions in *Mayo* and *Alice* adopted a two-step test for patent-eligibility. At step one, a court must decide whether the claims are "directed to" a "patent-ineligible concept." *Alice*, 134 S. Ct. at 2355. If so, at step two, the court must "consider the elements of each claim * * * to determine whether the additional elements 'transform the nature of the claim' into a patent-eligible application" of that concept. *Ibid.* (quoting *Mayo*, 132 S. Ct. at 1297-1298). The Court has "described step two" as "a search for an 'inventive concept'—*i.e.*, an element or combination of elements that is 'sufficient to ensure that the patent in practice amounts to significantly more than a patent upon the [ineligible concept] itself.'" *Ibid.* (quoting *Mayo*, 132 S. Ct. at 1294) (alteration in original). The Court stated that "[p]urely 'conventional or obvious'" steps are "normally not sufficient to transform an unpatentable law of nature into a patent-eligible application of such a law." *Mayo*, 132 S. Ct. at 1298. But the Court also reaffirmed the "general rule" it established in *Diehr*—that courts must consider "*all* claim elements, both individually and *in combination*," in the § 101 analysis. *Alice*, 134 S. Ct. at 2355 n.3 (emphasis added).

The Court stopped short of adopting a *per se* "technical arts" test. But *Alice* strongly suggested that a claim will be patent-eligible where it "improve[s] an existing technological process," 134 S. Ct. at 2358, or "effect[s] an improvement" in a "technical field," *id.* at 2359—even if it utilizes already-known elements. That insight helps ensure the types of inventions that have "historically been eligible to receive the protection of our patent laws"

continue to receive patent protection. *Diehr*, 450 U.S. at 184.

A. District Courts Require Guidance Regarding the Meaning and Role of "Purely Conventional" Activity

This Court's guidance in *Mayo* and *Alice*, however, has left the lower federal courts in disarray. As is often the case with path-making precedents, *Mayo* began the process of re-examining §101 law by "sketch[ing] an outer shell" for the new test. Arg. Tr. 28, *Alice*, 134 S. Ct. 2347 (2014) (No. 13-298) (Breyer, J.). Simply put, courts today "are understandably seeking more concrete" guidance in applying §101. *Ameritox*, 88 F. Supp. 3d at 903; see also *HealthTrio, LLC* v. *Aetna, Inc.*, No. 12-CV-03229, 2015 WL 4005985, at *5 (D. Colo. June 17, 2015) (criticizing *Alice* for "failing to provide any real guidance as to what is 'enough' to be a sufficiently innovative concept"); *Caltech*, 59 F. Supp. 3d at 986 (opining that *Alice* "leav[es] the boundaries of §101 undefined"); *Gametek LLC* v. *Zynga, Inc.*, No. CV-13-2546, 2014 WL 1665090, at *4 (N.D. Cal. Apr. 25, 2014) ("[T]he Supreme Court has not prescribed a specific test to determine what constitutes sufficient inventive concept," and "recent case law demonstrates the uncertain contours of the present inventive concept analysis * * * .").

Even determining what constitutes an "abstract idea" at step one has proven difficult. As the Federal Circuit has observed, this Court has yet to offer "a definition of an 'abstract idea' that is not itself abstract." *Versata Dev. Grp., Inc.* v. *SAP Am., Inc.*, 793 F.3d 1306, 1331 (Fed. Cir. 2015). But nowhere is this Court's guidance more needed than with respect to its direction, in connection with *Mayo/Alice* step two, that "[p]urely 'conventional or obvious'" steps are "normally not sufficient to

transform an unpatentable law of nature" or abstract idea "into a patent-eligible application of such a law." *Mayo*, 132 S. Ct. at 1298. Courts have struggled over how to reconcile that with this Court's instruction that courts must "consider[ ] *all* claim elements, both individually and *in combination*," *Alice*, 134 S. Ct. at 2355 n.13 (emphasis added), and that "[i]t is inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements" in a § 101 analysis, *Diehr*, 450 U.S. at 188. And the reasoning courts have employed threatens havoc for all inventions, especially computer-implemented inventions like software.

1. For example, in *McRO, Inc.* v. *Namco Bandai Games America, Inc.*, No. CV-12-10327, 2014 WL 4749601 (C.D. Cal. Sept. 22, 2014), the district court construed this Court's directions regarding "purely conventional activity" as requiring it to disregard, entirely, every step existing in "*prior art*." *Id.* at *9 (emphasis added). *McRO* concerned a patent for automating lip-synchronization in 3-D computer-generated animation. In the prior art, a human artist would take a phonetic transcript of the dialogue, along with a computer-generated character model, and manipulate the character's facial expressions at critical frames to create the illusion of speech. *Id.* at *2. The patent disclosed a software-based method that automated that process, eliminating the need for a human to apply artistic judgment frame-by-frame. The software analyzed the transcript and adjusted the character's facial expression and lip movements using specific types of rules that accounted for the context and pace of the speech in the dialogue (in the patent's words, rules defined "as a function of phoneme sequence and time of said phoneme

sequence"). *Id.* at *8. The invention had been hailed as "revolutionary." *Id.* at *12.

In its § 101 analysis, the district court found that, "[f]acially, these claims do not seem directed to an abstract idea." 2014 WL 4749601, at *8. Rather, "[t]hey are tangible, each covering an approach to automated three-dimensional computer animation, which is a specific technological process." *Ibid.* However, the court believed it was required to divide the claim steps for § 101 analysis and focus solely on the invention's "point of novelty." *Id.* at *10. The court created a claim chart (as in a § 103 obviousness analysis) identifying *every step that existed in the "prior art"—i.e.*, the computer-animation techniques the patent automated, including reviewing the transcript, adjusting the character model's features at relevant moments, and outputting video frames that created the illusion of the character speaking the dialogue—and stripped those steps from the claims. *Ibid.* (emphasis added). According to the court, that left only "the idea of using rules, including timing rules, to automate the process of generating keyframes." *Ibid.* Reduced to that element, the claim was an unpatentable abstract idea. See *id.* at *11.

Similarly, in *Thales Visionix, Inc.* v. *United States*, 122 Fed. Cl. 245 (2015), the Court of Federal Claims held that claim limitations should be disregarded whenever they recite a hardware device that is "generic" or has "already gained 'widespread acceptance.'" *Id.* at 253. *Thales* concerned an advanced motion-tracking system. Prior-art systems used "inertial trackers"—motion-sensing devices—to track motion relative to a *fixed* point. *Id.* at 248. The invention used that same hardware in a system that could track the motion of one object relative to a *moving* reference frame. *Ibid.* That opened up new

applications for motion-tracking technology, such as helmet-mounted heads-up displays for fighter pilots. *Ibid.*

At step one, the court found the claim was directed to an "abstract idea"—"mathematical equations for determining the relative position of a moving object to a moving reference frame." 122 Fed. Cl. at 252. At step two, the court held that the "claim fails to transform" the underlying equation "into a patent-eligible invention." *Id.* at 253. The court ignored the existence of the inertial sensors—and their configuration—in the claim because they were "generic, widely-used devices" in *other* contexts. *Ibid.* In doing so, the court invoked *Alice*'s statement that "'wholly generic computer implementation is not generally'" sufficient to render an abstract idea patent-eligible. *Id.* at 252 (quoting *Alice*, 134 S. Ct. at 2350-2351). The court never analyzed the claim as a whole—it never considered whether the integration of the navigation equation within the recited configuration of inertial sensors represented the sort of "improvement" in a "technology or technical field" that *Alice* suggested should be patent-eligible. 134 S. Ct. at 2359.[2] Other courts have taken a similarly expansive view of "purely

[2] Applying the separate machine-or-transformation test, the court concluded that the invention was not a technological improvement because "[t]he claims do not seek to improve upon inertial sensor technology and do not modify their capabilities." 122 Fed. Cl. at 256. That is, the claims did not improve the inertial-sensing hardware *itself*, *e.g.*, by making it more sensitive to motion. But that was not the invention's purpose.

conventional" activity, disregarding steps whenever they are "already known to" the relevant industry.[3]

2. The late Judge Pfaelzer, however, reached the opposite conclusion in *California Institute of Technology* v. *Hughes Communications Inc.*, 59 F. Supp. 3d 974 (C.D. Cal. 2014). *Caltech* concerned an invention for error-correction when transmitting data in computer systems. *Id.* at 977. Judge Pfaelzer scrutinized this Court's § 101 decisions, from *Gottschalk* v. *Benson*, 409 U.S. 63 (1972), through *Flook* and *Diehr*, up to *Alice*. See 59 F. Supp. 3d at 980-984. She concluded that claim elements are "conventional," and thus "insignificant" for § 101 purposes, only if the "elements were ubiquitous in the field," or they are an "obvious" or "necessary step" in performing the underlying, patent-ineligible concept. *Id.* at 992. She understood that, while "conventional elements and prior art may overlap," they are not coextensive. *Ibid.* Applying that methodology, she held that the claims—which utilized an abstract mathematical formula for error-correction, and implemented that formula on existing computer hardware—were patent-eligible. See *id.* at 993-1001.

3. The wide disparity in the understanding of "conventional activity" is likely to be outcome-determinative in countless cases. There is a tremendous difference between a standard that disregards the significance of any claim step that is "already known" in the "prior art," and one that disregards only claim steps that are so "ubiqui-

---

[3] *CMG Fin. Servs., Inc.* v. *Pac. Tr. Bank, F.S.B.*, 50 F. Supp. 3d 1306, 1326 (C.D. Cal. 2014); see *Exergen Corp.* v. *Brooklands Inc.*, No. 12-12243, 2015 WL 5096464, at *6 (D. Mass. Aug. 28, 2015) (steps are "unconventional" only if practitioners "were not using [them] in the field at the time").

tous" as to be a "necessary step" in applying the patent-ineligible concept.

The approach adopted in *McRO*, *Thales*, and cases like them, moreover, disserves the purposes of § 101. "[I]nventions in most, if not all, instances rely upon building blocks long since uncovered * * *." *KSR Int'l Co.* v. *Teleflex Inc.*, 550 U.S. 398, 418 (2007). Indeed, "claimed discoveries almost of necessity" utilize processes or devices that are "already known." *Id.* at 418-419. Given that, it makes no sense to disregard all "already known" elements when trying to determine whether the claim *as a whole* recites a patent-*eligible* invention. The novelty of patent steps is "relevant to other statutory sections of the patent law," Pet. App. 78a (Lourie, J., concurring), such as anticipation under § 102 and obviousness under § 103. But when determining whether claim limitations convert a mere "idea" into a patent-eligible application, steps should be discarded only if they are so closely linked to the idea as to be necessary to implementing it.

B. The Federal Circuit Cannot Resolve the Uncertainty

Confronted with this Court's precedents and disarray in district courts, the Federal Circuit has strived to provide guidance regarding "purely conventional" activity at *Mayo/Alice*'s step two. For example, in the decision below, the court stated that, for "process claims that encompass natural phenomenon, the process steps" implementing the underlying concept "must be new and useful." Pet. App. 12a. Otherwise, they are "conventional," and should be disregarded. *Id.* at 13a-16a.

As Judge Lourie explained, that approach "*oblige[s] [courts] to divorce* the additional steps from the asserted" patent-ineligible concept and then determine whether the additional steps are, by themselves, "*innovative*."

Pet. App. 81a (Lourie, J., concurring) (emphasis added). Thus, the Federal Circuit indicated that the "search for an 'inventive concept'" at step two, *Alice*, 134 S. Ct. at 2355 (quoting *Mayo*, 132 S. Ct. at 1294), requires courts to divvy the patent up; exclude steps that reflect only the abstract idea; exclude any steps not themselves "new and useful"; and consider only what is left, ignoring the relationship between those steps and the innovation they implement. That effort to clarify the *Mayo*/*Alice* analysis presents significant problems.

1. For one, the Federal Circuit's view cannot be reconciled with this Court's precedent. The Court has on multiple occasions rejected the notion that courts should "divorce" the additional steps from the underlying concept and assess them separately. Pet. App. 81a (Lourie, J., concurring). In *Diehr*, the Court held that, in "determining the eligibility of [the] * * * claimed process for patent protection under § 101, [the] claims must be considered as a whole." 450 U.S. at 188. *Diehr* explained that "[i]t is inappropriate to dissect the claims into old and new elements and then to ignore the presence of the old elements in the analysis." *Ibid.* And *Alice* reaffirmed *Diehr*'s "general rule," stating that courts must "consider[] *all* claim elements, both individually and *in combination*." 134 S. Ct. at 2355 n.13 (emphasis added). The Federal Circuit's approach requires what this Court has prohibited.

The Federal Circuit reached its conclusion based on the (not-unreasonable) view that in *Mayo*, the Court "discounted, seemingly without qualification, any '[p]ost-solution activity that is purely conventional or obvious.'" Pet. App. 21a (Linn, J., concurring). But as explained below, the Court's *analysis* in *Mayo* does significantly "qualif[y]" that facially broad statement—it demon-

strates that a claim step is "purely conventional," and cannot confer patent-eligibility, when it is inherent in, or amounts to little more than an instruction to apply, the ineligible concept itself. See pp. 19-23, *infra*. And in any event, *Alice* confirmed that "the approach [the Court] made explicit in *Mayo*" requires courts to consider the claim "'as a whole.'" 134 S. Ct. at 2355 n.13 (quoting *Diehr*, 450 U.S. at 188).

2. The Federal Circuit's focus on whether the "additional" "process steps" in the claim are themselves "new and useful," Pet. App. 12a, cannot be reconciled with this Court's precedent for another reason. *Diehr* recognized the principle that "a new combination of steps in a process may be patentable *even though all the constituents* of the combination *were well known and in common use* before the combination was made." 450 U.S. at 188 (emphasis added). Thus, it held that "[t]he *'novelty' of any element or steps* in a process * * * *is of no relevance* in determining whether the subject matter of a claim" satisfies §101's requirements. *Id.* at 188-189 (emphasis added). That forecloses the Federal Circuit's suggestion that courts must exclude steps that are not independently "new and useful." Only this Court can provide the needed clarification of its own precedent.

II. THE ISSUE IS IMPORTANT AND RECURRING

The issue is important and recurring—as shown by the number of §101 cases this Court itself has decided. The issue is pervasive. "At some level, all inventions * * * embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas." *Alice*, 134 S. Ct. at 2354 (quotation marks omitted). Petitioner demonstrates the potentially devastating impact on biotechnology industries. But the uncertainty and impact sweep far more broadly. Indeed, the mode of analysis

employed below and in many courts threatens the viability of patents in virtually every field of endeavor. And nowhere is that threat more acute than for software and other computer-implemented innovations.

1. Under the approach exemplified below, courts disregard any "abstract idea" underlying the claimed invention *and* any limitations that were already known. That, however, would potentially exclude from protection many of history's most iconic inventions—including Thomas Edison's incandescent light bulb. The idea of producing light by passing electricity through a vacuum bulb was well-known before Edison. "Long before" Edison, "British inventors were demonstrating that electric light was possible with the arc lamp." Dep't of Energy, *The History of the Light Bulb* (Nov. 22, 2013), http://www.energy.gov/articles/history-light-bulb. For decades, scientists "tinker[ed]" with various elements, including a vacuum bulb and filaments made of different substances. *Ibid.* But early bulbs had "extremely short lifespans, were too expensive to produce or used too much energy." *Ibid.* When Edison began experimenting with electric light in 1878, he tested various elements before deciding on a carbon filament. *Ibid.* A year later, he suspended a carbon filament in a vacuum, connected electrified wires to each side, and housed it in a glass bulb. That bulb burned for over 14 hours, and later versions burned for over 1,200 hours, making them the first commercially viable light bulbs. *Ibid.*

Edison was awarded a patent—and properly so. See U.S. Patent No. 223,898 (issued Jan. 27, 1880). But under the approach many courts have adopted, his invention would not be patent-eligible. His genius was his conceptual insight into how, given the natural properties of a carbon filament and a vacuum bulb, they could be ar-

ranged to produce a long-lasting incandescent light bulb. But that idea itself would be considered a patent-ineligible abstract idea or natural law. And the physical elements—vacuum bulbs, carbon filaments, electricity—would all be disregarded as "conventional" in step two of the *Mayo/Alice* test because they were "already known" and had been used by others in the field, leaving no "inventive concept."

2. As the example of Edison's light bulb illustrates, the analysis adopted below threatens patents in all fields of endeavor. But it poses a "particular[ ]" problem in the field of computer-implemented inventions. Pet. App. 76a (Lourie, J., concurring). Such inventions often will invoke "an algorithm or concept which, when viewed in isolation, will seem abstract." *Caltech*, 59 F. Supp. 3d at 990. And that concept will, the vast majority of the time, be implemented on existing, general-purpose computer hardware. Those additional claim steps generally are not "new," and thus would be disregarded, under the approach adopted by many courts, leaving only a patent-ineligible concept. Indeed, since *Alice*, the Federal Circuit has upheld a patent to a purportedly computer-implemented invention against a §101 challenge only once—in *DDR Holdings, LLC* v. *Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014). The other 12 times it has confronted the issue, it held the patent claims invalid.[4]

---

[4] See *Mortg. Grader, Inc.* v. *First Choice Loan Servs. Inc.*, 811 F.3d 1314 (Fed. Cir. 2016); *Vehicle Intelligence & Safety LLC* v. *Mercedes-Benz USA, LLC*, — F. App'x —, 2015 WL 9461707 (Fed. Cir. 2015) (per curiam); *Intellectual Ventures I LLC* v. *Capital One Bank (USA)*, 792 F.3d 1363 (Fed. Cir. 2015); *Internet Patents Corp.* v. *Active Network, Inc.*, 790 F.3d 1343 (Fed. Cir. 2015); *OIP Techs., Inc.* v. *Amazon.com, Inc.*, 788 F.3d 1359 (Fed. Cir.), cert. denied, 136 S. Ct. 701 (2015); *Allvoice Devs. US, LLC* v. *Microsoft Corp.*, 612

The situation is little different in the district courts and before the PTAB.[5]

Those numbers may, by themselves, overstate the impact. In the wake of *Mayo* and *Alice*, it is unsurprising that many non-meritorious patents would be weeded out. But the reasoning employed creates grave uncertainty, threatening to invalidate even meritorious computer-implemented inventions as well. Ironically, the very feature that has made computer-implemented inventions vulnerable to attack under §101 is their greatest strength. Software can be employed on existing devices to perform a boundless array of new features. Different programs can enable the same general-purpose computer hardware to be used for new and different tasks, such as typing a document, taking a photograph, making a telephone call, or watching a movie. No one would doubt that a better typewriter, camera, or DVD player would be a patent-eligible invention. A computer-implemented invention that enables the same functional advances

---

F. App'x 1009 (Fed. Cir.), cert. denied, 136 S. Ct. 697 (2015); *Content Extraction & Transmission LLC* v. *Wells Fargo Bank, Nat'l Ass'n*, 776 F.3d 1343 (Fed. Cir. 2014), cert. denied, 136 S. Ct. 119 (2015); *Ultramercial, Inc.* v. *Hulu, LLC*, 772 F.3d 709 (Fed. Cir. 2014), cert. denied, 135 S. Ct. 2907 (2015); *buySAFE, Inc.* v. *Google, Inc.*, 765 F.3d 1350 (Fed. Cir. 2014); *Planet Bingo, LLC* v. *VKGS LLC*, 576 F. App'x 1005 (Fed. Cir. 2014); *Digitech Image Techs., LLC* v. *Elecs. for Imaging, Inc.*, 758 F.3d 1344 (Fed. Cir. 2014).

[5] Since *Alice*, district courts have invalidated 69.2% of patents (128 in total) challenged under §101. Robert R. Sachs, *#AliceStorm: When It Rains, It Pours* . . . (Jan. 22, 2016) ("*When It Rains*"), http://www.bilskiblog.com/blog/2016/01/alicestorm-when-it-rains-it-pours.html. And not one patent has survived the "covered business method" patent review proceedings before the PTAB authorized by the Leahy-Smith America Invents Act, §18, Pub. L. No. 112-29, 125 Stat. 284 (2011). See *ibid.*

using new software on existing hardware should be no different.

Indeed, computer-implemented advances are the modern-day heirs to the unquestionably patent-eligible mechanical innovations of the past. For example, the typewriter was improved by the invention of the capital-shift mechanism for toggling between upper- and lower-case characters. It was further improved by the addition of a mechanism that allowed for proportional spacing, which produces more aesthetically pleasing typesetting. Each of those advances was awarded patent protection. See U.S. Patent No. 202,923 (issued Apr. 30, 1878); U.S. Patent No. 2,111,410 (issued Apr. 15, 1935). An invention that achieves similar advances in the context of today's word-processing software should be no less patent-eligible, even if it runs on a general-purpose computer and achieves the advances through software rather than modifications to a mechanical device. Such advances are precisely the type of invention that has "historically been eligible to receive the protection of our patent laws." *Diehr*, 450 U.S. at 184.

The grave uncertainty and unpredictability under existing law threatens serious damage to one of the Nation's most important industries. Software provides the "infrastructure" of innovation in today's world. President's Info. Tech. Advisory Comm., Nat'l Coordination Office for Computing, Info. & Commc'ns, *Information Technology Research: Investing in Our Future* 23 (1999), available at http://research.microsoft.com/en-us/um/people/gray/papers/pitac_report_99_2_24.pdf. It is also a critical component of the U.S. economy. It was worth $425 billion in 2012, and over the eight years prior, was responsible for 15.4% of total productivity gains by American workers. SIIA, *The U.S. Software Industry:*

An Engine for Economic Growth and Employment 2 (2014), https://www.siia.net/Adin/FileManagement.aspx/LinkClick.aspx?fileticket=yLPW0SrBfk4%3D&portalid=0. "[B]oth economic theory and practical experience suggest that the availability of patents for software" is necessary to "promote[ ]" that "innovation by supplying (additional) incentives to inventors." Julie E. Cohen & Mark A. Lemley, *Patent Scope & Innovation in the Software Industry*, 89 Cal. L. Rev. 1, 5 (2001).

As this Court indicated in *Alice*, claims that "effect an improvement" in a "technical field" should be patent-eligible. 134 S. Ct. at 2359. Yet there is currently deep uncertainty regarding "when, if ever," computer-implemented inventions "survive §101." *Caltech*, 59 F. Supp. 3d at 984. The present trend of courts disregarding any claim elements unless they are "new and useful"—without regard to how they are integrated with any underlying conceptual advance in the claim—is a step in the wrong direction. Pet. App. 12a. Review is warranted.

III. THE COURT SHOULD CLARIFY THAT ONLY LIMITATIONS THAT ARE INHERENT OR INTRINSIC TO THE ABSTRACT IDEA ARE "PURELY CONVENTIONAL"

In *Mayo*, this Court stated that "[p]urely 'conventional or obvious'" claim elements "normally" will not suffice to convert an abstract idea into a patent-eligible invention. 132 S. Ct. at 1298. That statement has precipitated the uncertainty and problematic rulings that now pervade this area. Indeed, as explained above (at 7-11), many courts have given that phrase an extreme construction—that courts must disregard everything in the prior art—that cannot be reconciled with precedent or the purpose of §101.

This Court's *analyses* in *Mayo* and *Alice*, however, defy that approach. They indicate that "purely conventional" does *not* encompass everything in the prior art. Instead, a claim step is "purely conventional"—and thus cannot confer patent-eligibility—when it is inherent in implementing the ineligible concept, or is so closely tied to the abstract idea that it amounts to little more than an instruction to apply the idea.

Mayo concerned a § 101 challenge to a patent claiming methods for calibrating the appropriate dose of thiopurine drugs (which are used to treat autoimmune diseases) based on the concentration of certain metabolites in the patient's blood. See 132 S. Ct. at 1294-1295. The patent steps recited "administering" a thiopurine drug to patients with certain diseases; "determining" the level of the relevant metabolites in the blood; and deciding whether the thiopurine dosage should be altered based on the metabolite levels. See *id.* at 1297-1298.

At step one, the Court found that the patent claims were directed to a patent-ineligible natural law—the "relationships between concentrations of certain metabolites in the blood and the likelihood that a dosage of a thiopurine drug will prove ineffective or cause harm." 132 S. Ct. at 1296-1297. At step two, the Court held that the additional steps did not transform the claim into a patent-eligible application of that natural law. The "administering" step just defined the field of use—cases where thiopurine was being administered. See *id.* at 1297. And the "determining" step involved "well-understood, routine, conventional activity previously engaged in by scientists who work in the field." *Id.* at 1298. The Court further stated that "[p]urely conventional or obvious" steps are "normally not sufficient to transform an

unpatentable law of nature into a patent-eligible application of such a law." *Ibid.* (quotation marks omitted).

Notwithstanding the confusion that language has engendered, the rest of the Court's analysis makes its meaning evident. The Court explained that the issue was not simply that the "administering" and "determining" steps were *known*. It was that the steps "*must be taken* in order to apply the laws in question." 132 S. Ct. at 1299 (emphasis added). It explained that, because "anyone who wants to make use of these laws *must*" perform the additional claim steps, "the combination amounts to nothing significantly more than an instruction to apply the applicable laws when treating their patients." *Id.* at 1298 (emphasis added). Thus, "purely conventional" activity is not excluded because it is prior art or not "novel." It is excluded because it is inherent in the abstract idea itself or self-evidently required to apply the idea.

Alice makes that principle clearer still. The challenged patent there covered a "computerized scheme for mitigating 'settlement risk.'" 134 S. Ct. at 2352. The claims recited a series of steps "designed to facilitate the exchange of financial obligations between two parties by using a computer system as a third-party intermediary." *Ibid.* The steps included creating and updating "shadow" credit and debit records reflecting the parties' balances in real-world accounts; the intermediary then would instruct the relevant financial institutions to execute the transactions only if those records showed that both parties could satisfy their obligations. *Ibid.*

At step one, the Court found the patent claims were directed to a patent-ineligible abstract idea—the "concept of intermediated settlement." 134 S. Ct. at 2356. At step two, the Court noted that the claims were "imple-

mented using a computer." *Id.* at 2353. The computer limitations, however, were "'[p]urely conventional'" because, taken as a whole, they did nothing more than "instruct the practitioner to implement the abstract idea of intermediated settlement on a generic computer." *Id.* at 2359. They "add[ed] *nothing of substance* to the underlying abstract idea" of performing intermediated settlement. *Id.* at 2360 (emphasis added). That was insufficient to "transform a patent-ineligible abstract idea into a patent-eligible invention." *Id.* at 2358. Thus, no less than *Mayo*, *Alice* indicates that "purely conventional" activity means activity inherent in implementing the abstract idea, or self-evidently the way any practitioner would implement it. Monopolizing that activity would monopolize the abstract idea itself—precisely what § 101 seeks to prevent.

The claim steps the Court disregarded in *Mayo* and *Alice* were so integral to the underlying concept that they amounted to nothing "more than simply stating the [patent-ineligible concept] while adding the words 'apply it.'" *Alice*, 134 S. Ct. at 2357 (quotation marks omitted). It makes sense that such steps would be insignificant for § 101 purposes—if a step is inherent in the concept itself, it clearly cannot "add *enough*" to the claim's statement of that concept to make it a patent-eligible *application* of the concept. *Mayo*, 132 S. Ct. at 1297.

The lower courts have largely failed to recognize that critical feature of *Mayo* and *Alice*. By construing those cases to require the exclusion of any non-novel step, they have placed *Mayo* and *Alice* in conflict with *Diehr*—and with other parts of *Mayo* and *Alice* themselves. See pp. 13-14, *supra*. But this Court did *not* suggest that any step that is known to practitioners, or that existed in the prior art, must be disregarded in § 101 analysis. Nor did

it overrule *Diehr*'s direction that "[t]he 'novelty' of any element or steps in a process * * * is of no relevance in determining" whether a claim is patent-eligible under § 101. 450 U.S. at 188-189. Because courts are giving *Mayo* and *Alice* precisely that effect, further review is warranted.

CONCLUSION

The petition for a writ of certiorari should be granted.

Respectfully submitted.

JEFFREY A. LAMKEN
Counsel of Record
MICHAEL G. PATTILLO, JR.
MOLOLAMKEN LLP
The Watergate, Suite 660
600 New Hampshire Ave., N.W.
Washington, D.C. 20037
(202) 556-2000
jlamken@mololamken.com

Counsel for Amicus Curiae

APRIL 2016