October 18, 2021

The Honorable Andrew Hirshfeld
Commissioner for PatentsDirector of the U.S. Patent and Trademark Office
600 Dulany Street
Alexandria, VA 22314

Submitted through the Federal eRulemaking Portal at *www.regulations.gov*

Re: Patent Eligibility Jurisprudence Study, Request for Information (86 FR 36257)
Docket No.: PTO-P-2021-0032

Dear Commissioner Hirshfeld:

Juniper Networks, Inc. respectfully submits these comments in response to your request for public input to assist in preparing a study on the current state of patent eligibility jurisprudence in the United States, and how the current jurisprudence has impacted investment and innovation. As we explain in greater detail below, Juniper Networks believes the current state of jurisprudence around section 101 of the Patent Act remains sound. In fact, adherence to the principle that abstract ideas are not and should not be patentable – as the courts have held – has allowed the software and information technology industries to flourish.

Founded in February 1996 and now employing over 9,000 people worldwide, Juniper's mission is to solve the world's most difficult problems in networking technology. As an innovator, Juniper is proud to hold more than 2,200 United States utility patents. Juniper also believes in protecting the public from the harms of incorrectly issued patents, and views the Supreme Court's eligibility jurisprudence as a necessary course correction to ensure that our patent system continues to benefit the public and promote innovation. Indeed, the Supreme Court's § 101 jurisprudence has been critically important to some of the largest and most innovative sectors of American industry, including software and internet technology.

Alice Was a Necessary Course Correction

The software and internet technology sectors have been especially targeted by meritless infringement suits based on overbroad, low-quality patents that are cheaper to settle than fight. In bringing these suits, the owners of these patents seek unearned rent, imposing a harmful tax on innovation. This results in the diversion of funds to legal fees that should be going to research and development, thus curbing or delaying the development of truly innovative new technologies. The Supreme Court's 2014 decision in *Alice Corp. Pty. v. CLS Bank Int'l* was a necessary course correction that steered the patent system back toward its constitutional origins, thus helping to reduce the harms imposed by such suits.[1]

The Founders did not intend the patent system to protect all types of subject matter, across all human endeavors. Rather, they intended it to "promote the Progress of Science and

[1] *Alice Corp. Pty. v. CLS Bank Int'l*, 573 U.S. 208 (2014).

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useful Arts." Consistent with what the Constitution commands, the Supreme Court has long held that abstract ideas are not patentable. For instance, the Supreme Court's 1852 decision in *Le Roy v. Tatham* explained that "[a] principle, in the abstract . . . cannot be patented."[2] And the Supreme Court's eligibility jurisprudence in 2010–2014 reaffirmed this long-standing rule against patenting abstract ideas.[3] This began in *Bilski*, which held that limiting the use of an abstract idea "to a particular technological environment" does not make it patentable.[4] In *Mayo*, the Supreme Court held that stating an abstract idea "while adding the words 'apply it' " is not enough for patent eligibility.[5] And *Alice*, the culmination of these cases, explained that "[s]tating an abstract idea while adding the words 'apply it with a computer' simply combines those two steps, with the same deficient result."[6] Thus, in *Alice*, the Supreme Court applied section 101 of the Patent Act and longstanding judicial precedent to prevent, as non-patentable subject matter, patent claims that do nothing more than implement an abstract idea "on a general-purpose digital computer."[7]

As recently observed in an amicus brief authored by US Senator Thom Tillis, "[c]oncerns about proliferation of unworthy patents and reexamination of standards of eligibility led [the Supreme] Court to provide guidance in *Alice* and *Mayo*."[8] And the core principle of these cases is sound.

In *Mayo*, the Court noted that the monopolization of the "basic tools of scientific and technological work … through the grant of a patent might tend to impede innovation more than it would tend to promote it."[9] Similarly, in *Alice*, the Court explained that the "building blocks of human ingenuity" must not be tied up by the grant of exclusive rights.[10] And whatever criticism

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[2] 55 U.S. (14 How.) 156 (1852); *accord Rubber-Tip Pencil Co. v. Howard*, 20 Wall. 498, 507 (1874) ("An idea of itself is not patentable"). Much later, § 101 of the Patent Act listed four categories of inventions, but did not change this longstanding rule. *E.g.*, H.R. Rep. No. 82-1923, at 6 (stating that although "a machine or a manufacture … may include anything under the sun that is made by man, … it is not necessarily patentable under section 101").

[3] *See, e.g.*, *Bilski v. Kappos*, 561 U. S. 593, 619 (2010) (Stevens, J., concurring) (noting that exclusions of abstract ideas and laws of nature "are consistent with the notion that a patentable process must be 'new and useful'").

[4] *Id*. at 610–611.

[5] *Alice*, 573 U.S. at 223 (quoting *Mayo Collaborative Servs. v. Prometheus Lab'ys, Inc.*, 566 U.S. 66 (2012)).

[6] *Alice*, 573 U.S. at 223.

[7] *Id*.

[8] Amicus Brief of United States Senator Thom Tillis, et al., in support of petition for certiorari in *Am. Axle & Mfg., Inc., v. Neapco Holdings LLC*, Sup. Ct. Docket No. 20-891.

[9] *Mayo*, 566 U.S. at 71.

[10] *Alice*, 573 U.S. at 216.

these cases have drawn in other fields,[11] they have had an overall positive effect on some of the largest and most innovative sectors of American industry. For instance, as detailed below, these cases have helped reduce litigation costs and improved patent quality in software and internet-related industries.

Alice Did not Harm Innovation in Software and Internet Technology

When the patent claims in Alice were being considered by the courts, some suggested that, if all of the claims were to found invalid, this would negatively impact the software industry.[12] But *Alice* had no such result.

On the contrary, as an industry organization previously commented, R&D spending in the "software & Internet" category increased substantially after *Alice*. In the year before that decision, growth in R&D spending on the software and internet sector was 16.5 percent. But in the year after *Alice*, that growth was 27 percent, "far greater than the growth of all other industries from 2014 to 2015."[13] This trend continued in 2016 and was driven specifically by companies in North America.[14]

More recent statistics show that this R&D spending in software and internet-related technology remains strong, particularly in America. According to the 2018 Global Innovation 1000 study, the most recent available, growth in R&D spending in "Software and Internet" was 20.6 percent.[15] A full 61 percent of this spending was from North American companies.[16] "Computing and Electronics" remained the top spending R&D sector overall, with 22.5% of all R&D spending, albeit with slower growth.

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[11] In *Mayo*, for instance, the justices found blood testing methods to be unpatentable because they cover only laws of nature, setting the ground for the invalidation of certain medical patents.

[12] *CLS Bank Int'l v. Alice Corp. Pty.*, 717 F.3d 1269, 1313 (Fed. Cir. 2013) (Moore, J. dissenting) ("[I]f all of these claims, including the system claims, are not patent-eligible, this case is the death of hundreds of thousands of patents, including all … software patents as well as many computer implemented and telecommunications patents.").

[13] Comments of the Electronic Frontier Foundation Regarding Request for Comments Regarding Subject Matter Eligibility (Docket No. PTO-P-2016-0041) at 3 (available at https://www.uspto.gov/sites/default/files/documents/Comments_EFF_jan172017.pdf) (citing PwC, 2014 Global Innovation 1000 and PwC, 2015 Global Innovation 1000).

[14] *Id*. at 4 ("[C]ompanies in North America are making the strongest shift to software offerings—from 15 percent of total R&D spending in 2010 to 24 percent in 2020") (quoting PwC, 2016 Global Innovation 1000).

[15] PwC, 2018 Global Innovation 1000, *What the Top Innovators Get Right*, at 26 (available at https://www.strategyand.pwc.com/gx/en/insights/innovation1000/2018-global-innovation-1000-fact-pack.pdf).

[16] PwC strategy+business, *What the Top Innovators Get Right* (October 30, 2018) (available at https://www.strategy-business.com/feature/What-the-Top-Innovators-Get-Right).

The Global Innovation Index 2020, published by Cornell's SC Johnson College of Business, tells a similar story. Its "ICT [Information Communications Technology] and Electronic Equipment" category is the top R&D-spending sector at 23.5 percent, while "Software and ICT Services" is 14.4 percent.[17] Notably, the companies that spend the most on R&D in the world are United States-based companies in the software category, and they have often written in support of *Alice*'s eligibility test.[18]

Hence, it would not be prudent to discount innovators in the software and internet technology sectors in favor of the purportedly "critical" technologies identified in the request for information. Any judicial or legislative attempt to undo *Alice* or reform § 101 should be careful not to negatively impact these sectors.

Criticism of the *Alice* Test Is Overstated

As noted in the request for information, the Federal Circuit recently issued a split panel decision in *American Axle & Manufacturing, Inc. v. Neapco Holdings LLC*, concluding that a method for manufacturing drive shafts was patent ineligible, followed by a split decision when denying rehearing en banc.[19] American Axle petitioned for writ of certiorari, and the Supreme Court called for the views of the Solicitor General on May 3, 2021. But in many instances, the Supreme Court's two-part eligibility test, as developed in *Alice*, has not been nearly so controversial, and has led to sound outcomes.

Such outcomes include *Alice* itself, where the Court concluded that claims directed to intermediated settlement were not eligible because they did no more than "simply instruct the practitioner to implement the abstract idea of intermediated settlement on a generic computer."[20] Thereafter, the Federal Circuit held invalid numerous patent claims that would have impeded innovation.[21] By contrast, where the Federal Circuit found claims directed to some improvement

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[17] Cornell SC Johnson College of Business, Global Innovation Index 2020, at 4 (available at https://www.wipo.int/edocs/pubdocs/en/wipo_pub_gii_2020.pdf).

[18] *See*, *e.g.*, Allen Lo, The Hill, *Protecting Alice protects patent quality and technological innovation* (Dec. 8, 2016) (available at https://thehill.com/blogs/congress-blog/judicial/309416-protecting-alice-protects-patent-quality-and-technological) ("While Google and many other tech companies invest many billions of dollars in research and development (R&D) to make [their patented inventions] possible, not all software patents issued by the Patent and Trademark Office (PTO) are of high quality. … Case law and PTO practices had swung too far toward allowing these low-quality claims to remain unchallenged, and a course correction was needed."); *see also* Jan. 18, 2017 Comments of Google Inc. Regarding Request for Comments on Legal Contours of Patent Subject Matter Eligibility (Docket No. PTO-P-2016-00410).

[19] 966 F.3d 1347 (Fed. Cir. 2020).

[20] *Alice*, 573 U.S. at 225.

[21] *See*, *e.g.*, *Intellectual Ventures I LLC v. Symantec Corp.*, 838 F.3d 1307, 1313 (Fed. Cir. 2016) (finding ineligible claims directed to abstract idea of email filtering, an idea long present in corporate mailrooms, merely applied with a computer); *Intellectual Ventures I LLC v. Capital One Bank (USA)*, 792 F.3d 1363, 1368 (Fed. Cir. 2015) (finding ineligible claims directed to

in computer technology, the court concluded that those claims were eligible.[22] As a previous commenter representing many stakeholders in the software and internet technology industries explained, this focus on technological improvements has aligned the eligibility analysis "as it applies to software patents with the purposes of the patent system to promote technical innovation," and "has reduced litigation costs and promoted greater efficiency by often introducing a threshold analysis of eligibility."[23]

In Juniper's unfortunately frequent experience as a defendant in patent-infringement cases that lack merit, there still are many patents, entitled to a presumption of validity, that in the words of *Alice* boil down to "stating an abstract idea while adding the words 'apply it with a computer.'"[24] Resources that companies such as Juniper could devote to further innovations are instead devoted to such litigation.

It is always possible, of course, that further clarity on the application of § 101 could be beneficial in further limiting costs. As with other industries, predictability is a factor that can drive investment into new software and internet technologies. If, however, predictability takes the form of opening the floodgates to low quality patents, this will only impede innovation in major sectors of American industry.

Several Federal Circuit decisions after 2018 may have curbed *Alice*'s usefulness in disposing of litigation early and with the least expense. For instance, in *Berkheimer v. HP Inc.* and *Aatrix Software Inc. v. Green Shades Software Inc.*, the Federal Circuit found that the eligibility inquiry under *Alice* step two, concerning whether the invention contained limitations that were "well understood, routine and conventional," was a factual inquiry.[25] In Juniper's experience, regardless of whether analogous factual issues are present, some courts now delay

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system of tracking spending against a pre-set limit using only generic computing functions); *Versata Development Group, Inc. v. SAP America, Inc.*, 793 F.3d 1306, 1334 (Fed. Cir. 2015) (finding ineligible that weren't "rooted in computer technology to solve a problem specifically arising in some aspect of computer technology" and were instead directed to "a commonplace business method . . . applied on a general purpose computer"); *In re Chorna*, 656 Fed. App'x 1016, 1021–22 (Fed. Cir. 2016) (finding ineligible claims directed to "buying and selling financial instruments via computers and communication networks" by "selecting the best performing financial instruments within a tracking set of financial instruments"); *FairWarning IP, LLC v. Latric Systems, Inc.*, 839 F.3d 1089 (Fed. Cir. 2016) (finding ineligible claims directed to "the same questions . . . that humans in analogous situations detecting fraud have asked for decades, if not centuries").

[22] *See DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245 (Fed. Cir. 2014); *Enfish, LLC v. Microsoft Corp.*, 822 F.3d 1327 (Fed. Cir. 2016).

[23] Jan. 18, 2016 Comments of the Software and Information Industry Association Re: Notice of Roundtables and Request for Comments Related to Patent Subject Matter Eligibility.

[24] *Alice*, 573 U.S. at 223.

[25] *See Berkheimer v. HP Inc.*, 881 F.3d 1360, 1365, 1368 (Fed. Cir. 2018); *Aatrix Software, Inc. v. Green Shades Software, Inc.*, 882 F.3d 1121, 1125 (Fed. Cir. 2018).

resolution of § 101 issues as a matter of course. Other courts, however, may still address § 101 issues early. Further clarity on when this analysis is appropriate could be beneficial in limiting costs.

Any Reform Efforts Should Be Careful to Protect Real Innovation in Software and Internet Technology.

Evidence regarding the performance of software companies, employment growth for software developers, and R&D spending on software all show a thriving sector. Some of the largest R&D spenders in the world are American companies in the Software and Internet industry. Under *Alice*, courts and the PTAB have invalidated many abstract software patents that had no value except as litigation weapons. Thus, as another commenter noted in connection with possible legislation, rather than harming the software industry, *Alice* has allowed the industry to thrive.[26] Indeed, *Alice* has been especially valuable as a tool to promptly resolve weak cases where a defendant would otherwise be subject to settlement pressure created by the cost of litigation. Many district courts have found claims patent ineligible under Alice on the pleadings and this practice has been affirmed by the Federal Circuit.

Moreover, Juniper's own patents and patent applications, because they comply within the confines of patent eligible subject matter, remain largely unimpacted by *Alice*. This is consistent with other commentators' observations that *Alice* primarily invalidated patents that were used to "harm real innovators in the software industry who did the hard work of finding the technical solutions that are necessary to create valuable products."[27]

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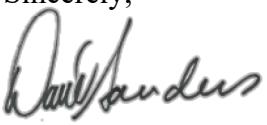
For these reasons, we believe that the current jurisprudence around subject matter patent eligibility remains sound. Juniper appreciates the opportunity to provide its views, and thanks the USPTO for its consideration.

Sincerely,



David Saunders
Director, Litigation
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[26] Mozilla, Jan. 18, 2017 Comment Regarding Notice of Roundtables and Request for Comments Related to Patent Subject Matter Eligibility (Docket No. PTO-P-2016-0041) at 4 ("The overall effect of Alice has been positive to the software industry.").

[27] *Id*. at 2 (quoting Allen Lo, The Hill, *Protecting Alice protects patent quality and technological innovation* (Dec. 8, 2016)).