

Nos. 2015-1080, -1081, -1082, -1083, -1084, -1085, -1086, -1087, -1088, -1089,
-1090, -1092, -1093, -1094, -1095, -1096, -1097, -1098, -1099, -1100, -1101

**UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT**

MCRO, INC., d/b/a PLANET BLUE,

Plaintiff-Appellant,

– v. –

BANDAI NAMCO GAMES AMERICA INC., NAUGHTY DOG, INC.,
KONAMI DIGITAL ENTERTAINMENT, INC., SEGA OF AMERICA, INC.,
ELECTRONIC ARTS INC., OBSIDIAN ENTERTAINMENT, INC., DISNEY
INTERACTIVE STUDIOS, INC., SQUARE ENIX, INC., NEVERSOFT EN-
TERTAINMENT, INC., TREYARCH CORPORATION, CAPCOM USA, INC.,
SONY COMPUTER ENTERTAINMENT AMERICA LLC, ATLUS U.S.A.,
INC., SUCKER PUNCH PRODUCTIONS, LLC, INFINITY WARD, INC.,
LUCASARTS, A DIVISION OF LUCASFILM ENTERTAINMENT COMPA-
NY LTD. LLC, WARNER BROS. INTERACTIVE ENTERTAINMENT, A
DIVISION OF WARNER BROS. HOME ENTERTAINMENT INC.,
ACTIVISION PUBLISHING, INC., AND BLIZZARD ENTERTAINMENT,
INC.,

Defendants-Appellees,

VALVE CORPORATION, CODEMASTERS USA GROUP, INC.,
CODEMASTERS SOFTWARE INC., CODEMASTERS, INC., AND
THE CODEMASTERS SOFTWARE COMPANY LIMITED

Defendants-Appellees.

Appeal from the U.S. District Court for the
Central District of California, The Honorable George H. Wu
Nos. 2:12-cv-10322, 2:12-cv-10323, 2:12-cv-10327, 2:12-cv-10329, 2:12-cv-10331,
2:12-cv-10333, 2:12-cv-10335, 2:12-cv-10337, 2:12-cv-10338, 2:12-cv-10341, 2:12-cv-
10342, 8:13-cv-1870, 8:13-cv-1874, 2:14-cv-332, 2:14-cv-336, 2:14-cv-352, 2:14-cv-358,
2:14-cv-383, 2:14-cv-00389, 2:14-cv-417, 2:14-cv-439.

**BRIEF OF BSA | THE SOFTWARE ALLIANCE AS
AMICUS CURIAE IN SUPPORT OF REVERSAL**

Andrew J. Pincus
Paul W. Hughes
Mayer Brown LLP
1999 K Street, N.W.
Washington, D.C. 20006
(202) 263-3000

Counsel for amicus curiae

CERTIFICATE OF INTEREST

Pursuant to Federal Circuit Rule 47.4, Andrew J. Pincus, counsel for *Amicus Curiae* BSA | The Software Alliance, certifies the following:

1. The full name of every party or amicus we represent is:

BSA | The Software Alliance.

2. The name of the real party in interest (if not named in the caption) that we represent is:

Not applicable.

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party that we represent are:

Not applicable.

4. The names of all law firms and the partners and associates that appeared for appellants in the trial court or are expected to appear in this Court are:

Mayer Brown LLP; Andrew J. Pincus; Paul W. Hughes.

March 6, 2015

/s/ Andrew J. Pincus
Andrew J. Pincus
Attorney for *Amici Curiae*

TABLE OF CONTENTS

Certificate of Interest.....	i
Table of Authorities	iii
Interests of <i>Amicus Curiae</i>	1
Summary of Argument	1
Argument.....	4
I. Strong Patent Protection For Software Is Essential To America’s Economic Vitality.....	4
A. Software contributes substantially to the U.S. economy.....	5
B. The continued patentability of software furthers economic growth.	8
II. The District Court Erroneously Held The Asserted Claims Ineligible Under Section 101.	10
A. Because the asserted claims are not directed to an abstract idea, Section 101 is not implicated.	12
B. Even if these claims were directed to an abstract idea, they do substantially more than claim computer implementation of an abstract idea.	18
III. The District Court Erred By Transforming The Section 101 Analysis Into An Inquiry Into Obviousness And Indefiniteness.	23
A. Section 101’s test is separate and distinct from the obviousness inquiry.	25
B. The Section 101 inquiry is distinct from Section 112’s requirements.....	29
Conclusion	32

TABLE OF AUTHORITIES

Cases

<i>Accenture Global Servs., GmbH v. Guidewire Software, Inc.</i> , 728 F.3d 1336 (Fed. Cir. 2013).....	14, 21
<i>In re Alappat</i> , 33 F.3d 1526 (Fed. Cir. 1994) (en banc).....	11
<i>Alice Corp. Pty. v. CLS Bank International</i> , 134 S. Ct. 2347 (2014).....	<i>passim</i>
<i>Bancorp Servs., L.L.C. v. Sun Life Assur. Co. of Canada (U.S.)</i> , 687 F.3d 1266 (Fed. Cir. 2012).....	22
<i>Bilski v. Kappos</i> , 561 U.S. 593 (2010).....	<i>passim</i>
<i>buySAFE, Inc. v. Google, Inc.</i> , 765 F.3d 1350 (Fed. Cir. 2014).....	<i>passim</i>
<i>Cal. Inst. of Tech.</i> , 2014 WL 5661290 (C.D. Cal. 2014).....	25, 28
<i>Content Extraction & Transmission LLC v. Wells Fargo Bank, N.A.</i> , 776 F.3d 1343 (Fed. Cir. 2014).....	14, 16
<i>DDR Holdings, LLC v. Hotels.com, L.P.</i> , 773 F.3d 1245 (Fed. Cir. 2014).....	<i>passim</i>
<i>Diamond v. Diehr</i> , 450 U.S. 175 (1981).....	18, 26, 27
<i>Digitech Image Tech., LLC v. Elecs. for Imaging, Inc.</i> , 758 F.3d 1344 (Fed. Cir. 2014).....	13
<i>Eolas Techs. Inc. v. Microsoft Corp.</i> , 399 F.3d 1325 (Fed. Cir. 2005).....	11

TABLE OF AUTHORITIES
(continued)

	Page(s)
<i>In re Hall</i> , 781 F.2d 897 (Fed. Cir. 1986).....	28
<i>KSR Int’l Co. v. Teleflex Inc.</i> , 550 U.S. 398 (2007).....	26, 29
<i>LizardTech, Inc. v. Earth Res. Mapping, Inc.</i> , 424 F.3d 1336 (Fed. Cir. 2005).....	30
<i>Mackay Radio & Tel. Co. v. Radio Corp. of Am.</i> , 306 U.S. 86 (1939).....	18
<i>Mayo Collaborative Servs. v. Prometheus Labs., Inc.</i> , 132 S. Ct. 1289 (2012).....	<i>passim</i>
<i>Mazer v. Stein</i> , 347 U.S. 201 (1954).....	9
<i>Nautilus, Inc. v. Biosig Instruments, Inc.</i> , 134 S. Ct. 2120 (2014).....	30
<i>Research Corp. Techs. v. Microsoft Corp.</i> , 627 F.3d 859 (Fed. Cir. 2010).....	<i>passim</i>
<i>Takeda Pharm. Co. v. Zydus Pharm. USA, Inc.</i> , 743 F.3d 1359 (Fed. Cir. 2014).....	30
<i>Ultramercial, Inc. v. Hulu, LLC</i> , 772 F.3d 709 (Fed. Cir. 2014).....	13, 19, 20, 27
 Statutes	
17 U.S.C. § 117	9
 Miscellaneous	
Henry J. Cittone, <i>Some Math Is Hard, Some Not: Rules for Patentable Subject Matter of Software</i> , 38 Rutgers Computer & Tech. L.J. 193 (2012).....	5

TABLE OF AUTHORITIES
(continued)

	Page(s)
Barry Jaruzelski, <i>et al.</i> , <i>The Global Innovation 1000: Proven Paths to Innovation Success</i> , Strategy& (2014).....	7
David Kappos, Keynote Address at Center for American Progress, <i>An Examination of Software Patents</i> (Nov. 20, 2012).....	4, 5, 6
Julie E. Cohen & Mark A. Lemley, <i>Patent Scope and Innovation in the Software Industry</i> , 89 Cal. L. Rev. 1 (2001)	8
Iain M. Cockburn & Megan MacGarvie, <i>Patents, Thickets, and the Financing of Early-Stage Firms: Evidence From the Software Industry</i> , Nat’l Bureau of Econ. Research, Working Paper 13644 (2007).....	10
Bradford L. Smith & Susan O. Mann, <i>Innovation and Intellectual Property in the Software Industry: An Emerging Role for Patents?</i> , 71 U. Chi. L. Rev. 241 (2004).....	9
Robert D. Atkinson & Andrew S. McKay, <i>Digital Prosperity: Understanding the Economic Benefits of the Information Technology Revolution</i> (Info. Tech. & Innovation Found. 2007).....	6
Nat’l Sci. Bd., <i>Science & Engineering Indicators</i> , Appendix Table 4-20 (2014)	7
Report to Congressional Committees, <i>Intellectual Property: Assessing Factors That Affect Patent Infringement Litigation Could Help Improve Patent Quality</i> , GAO-13-465	8
Ronald J. Mann & Thomas W. Sager, <i>Patents, Venture Capital, and Software Start-Ups</i> , 36 Research Policy 193 (2007)	10
Erik Brynjolfsson & Adam Saunders, <i>Wired for Innovation: How Information Technology is Reshaping the Economy</i> (MIT Press 2010)	6

TABLE OF AUTHORITIES
(continued)

	Page(s)
Robert J. Shapiro, <i>The U.S. Software Industry As an Engine for Economic Growth and Employment</i> (Sonecon 2014)	7, 8
The Boston Consulting Group (“BCG”), <i>The Great Software Transformation</i> (2013).....	5
U.S. Gov’t Accountability Office, Report to Congressional Committees, <i>Intellectual Property: Assessing Factors That Affect Patent Infringement Litigation Could Help Improve Patent Quality</i> , GAO-13-465 (2013)	8
Webster’s Third New International Dictionary (1981)	27

INTERESTS OF *AMICUS CURIAE*

BSA | The Software Alliance is an association of the world’s leading software and hardware technology companies.¹ On behalf of its members, BSA promotes policies that foster innovation, growth, and a competitive marketplace for commercial software and related technologies. BSA members pursue patent protection for their intellectual property and as a group hold a significant number of patents. Because patent policy is vitally important to promoting the innovation that has kept the United States at the forefront of software and hardware development, BSA members have a strong stake in the proper functioning of the U.S. patent system.

The members of the BSA include Adobe, Altium, Apple, ANSYS, Autodesk, Bentley Systems, CA Technologies, CNC/Mastercam, Dell, IBM, Intuit, Microsoft, Minitab, Oracle, PTC, salesforce.com, Siemens PLM Software, Symantec, Tekla, The MathWorks, and Trend Micro.

SUMMARY OF ARGUMENT

I. Software—whose benefits are ubiquitous in modern life—is a critical aspect of the U.S. economy. Industry invests substantial and grow-

¹ Pursuant to Fed. R. App. P. 29(c)(5), *amicus* affirms that no counsel for a party authored this brief in whole or in part and that no person other than *amicus* and their counsel made a monetary contribution to its preparation or submission. A motion for leave to file accompanies this brief.

ing amounts in research and development; and software creates significant efficiencies across all industry, acting as a catalyst to economic growth. Any new limitation on the patent-eligibility of software would curtail a key engine of U.S. economic growth.

II. The Supreme Court’s decision in *Alice Corp. Pty. v. CLS Bank International*, 134 S. Ct. 2347 (2014), makes clear that Section 101 applies to software in the same manner as to all other fields of invention. The Section 101 test encompasses a two-part inquiry.

First, a court must determine whether a claimed innovation is directed to a patent-ineligible concept—an abstract idea, a law of nature, or a physical phenomena. Only “fundamental ... practice[s] long prevalent” qualify as “abstract ideas.” *Alice Corp.*, 134 S. Ct. at 2356 (quoting *Bilski v. Kappos*, 561 U.S. 593, 611 (2010)). Economic practices such as risk hedging, intermediated settlement, and third-party suretyships have been held to be “abstract ideas.”

Many computer innovations (particularly those directed to specific technological problems occasioned by digital systems) do not implement any “abstract idea” at all. When a patent claim is not directed to a patent-ineligible concept, it satisfies Section 101’s threshold inquiry. Contrary to the findings of the district court, the claims at issue in this case—relating

to a specific, automated process for lip-synching animated characters—do not implement any “abstract idea,” and thus are patent eligible.

Second, if a claim *is* directed to a patent-ineligible concept, it satisfies Section 101 if it does “significantly more” than merely describe and apply the abstract idea. *Alice Corp.*, 134 S. Ct. at 2357. In undertaking this inquiry, a court must discount “well-understood, routine, conventional activities’ previously known to the industry.” *Id.* at 2359-60. Three guide-posts aid in this analysis: (1) whether the claims unduly **preempt** too broad a category of innovation; (2) the degree of **detail** contained in the claims—because specific limitations demonstrate a limited application of the concept; and (3) whether the claims **improve technology**, because such claims are typically patent-eligible, as they use the abstract idea (or other patent-ineligible concept) in a concrete and useful way. Contrary to the findings of the district court, the claims at issue in this case include “significantly more” than any purported “abstract idea” described by the claims, and thus are within the boundaries of Section 101.

III. In reaching a contrary result, the district court appears to have imported into its Section 101 principles drawn from the separate obviousness test (of Section 103) and indefiniteness test (of Section 112). These

are important Patent Act requirements, with distinct, well-defined standards that must remain separate from the Section 101 inquiry.

Whether the claims at issue satisfy the other requirements of the Patent Act—in particular whether the patents are non-obvious as required by Section 103 and sufficiently detailed as required by Section 112—are determinations that have not yet been made in this case. The validity of these claims should be tested against the proper obviousness and indefiniteness standards on remand. *See Research Corp. Techs. v. Microsoft Corp.*, 627 F.3d 859, 869 (Fed. Cir. 2010) (“[A]n invention which is not so manifestly abstract as to override the statutory language of section 101 may nonetheless lack sufficient concrete disclosure to warrant a patent”).

ARGUMENT

I. Strong Patent Protection For Software Is Essential To America’s Economic Vitality.

“[M]any breathtaking software-implemented innovations power our modern world, at levels of efficiency and performance unthinkable even just a few years ago.” David Kappos, Keynote Address at Center for American Progress, *An Examination of Software Patents* (Nov. 20, 2012), <http://tiny.cc/f512ux>. “[P]atent protection” therefore “is every bit as well-deserved for software-implemented innovation” as for earlier innovations “that enabled man to fly, and before that for the innovations that enabled

man to light the dark with electricity, and before that for the innovations that enabled the industrial revolution.” *Id.* Subjecting software to patentability rules more restrictive than those applicable to other categories of inventions would reduce economic growth and diminish innovation that is enhancing virtually every aspect of American life.

A. Software contributes substantially to the U.S. economy.

As the world becomes increasingly digital, software technology is critical to virtually all major industries. It is no exaggeration that “most of the planet is currently run by software” as “[o]ur financial systems, energy production, transportation networks and a host of other fundamental systems are run using software.” Henry J. Cittone, *Some Math Is Hard, Some Not: Rules for Patentable Subject Matter of Software*, 38 Rutgers Computer & Tech. L.J. 193, 193-94 (2012). Software is used by “[p]atients with chronic diseases [who] wear[] devices that monitor and help to manage their conditions;” by “cities [to] monitor, manage, and reroute traffic during peak times;” and by insurers to “adjust[] premiums based on real-time driving habits of customers who agree to have sensors placed in their cars.” The Boston Consulting Group (“BCG”), *The Great Software Transformation* 11-12 (2013), <http://tiny.cc/rkd99w>. Indeed, “[s]oftware is the engine that has driven many, if not most, of the most disruptive business

models introduced over the past 25 years,” reforming countless industries. *Id.* at 5. In short, “software is at the heart of the global economy.” *Id.*

Information technology innovations have “been responsible, directly or indirectly, for most of the resurgence of productivity in the United States since 1995.” Erik Brynjolfsson & Adam Saunders, *Wired for Innovation: How Information Technology is Reshaping the Economy* xi (MIT Press 2010). They are “the key factor responsible for reversing the 20-year productivity slow-down from the mid-1970s to the mid-1990s and in driving today’s robust productivity growth.” Robert D. Atkinson & Andrew S. McKay, *Digital Prosperity: Understanding the Economic Benefits of the Information Technology Revolution* 10 (Info. Tech. & Innovation Found. 2007), <http://tiny.cc/3ld99w>.

To take just one example, software is revolutionizing the automobile industry. Automobiles today increasingly feature automated driving functions—such as automatic braking and self-parking cars. Many companies are developing fully autonomous cars. All of these innovations rely on software advances.

Investment in software reflects its critical importance to American industry. In 2011, companies invested approximately \$56.3 billion in research and development for software, information, and hosted-data ser-

vices, and computer-related services—approximately 24% of *total* industrial R&D expenditures for the nation. Nat'l Sci. Bd., Science & Engineering Indicators, Appendix Table 4-20 (2014), <http://tiny.cc/g6svux>. Reflecting this substantial investment, software firms are leading innovators, “with 69% of companies” engaged in software development “reporting the introduction of a new product or service, compared to the 9% average for all nonmanufacturing industries.” Nat'l Sci. Bd., Science & Engineering Indicators, at 6-39 (2014), <http://tiny.cc/1zsvux>.

Moreover, a growing share of R&D investment across the economy is directed to or critically dependent on software technology. In 2014, R&D spending in the software and Internet sector grew approximately 16.5% from the prior year, compared to just 1.4% R&D growth for the whole economy. Barry Jaruzelski, *et al.*, *The Global Innovation 1000: Proven Paths to Innovation Success*, Strategy& (2014), <http://tiny.cc/055cux>.

Finally, the software industry creates a substantial number of high-paying American jobs. Software companies and related services employed over 2.5 million U.S. workers as of 2014, making up a 2.2% share of total private workforce nationwide. Robert J. Shapiro, *The U.S. Software Industry As an Engine for Economic Growth and Employment* 7 (Sonecon 2014), <http://tiny.cc/mkwvux>. These companies pay wages and salaries that are,

on “average, about three times the average wage or salary for other private-sector workers in America.” *Id.* at 17.

Given the integral role computer software plays in all aspects of modern life, it comes as little surprise that inventors are increasingly seeking patent protection for software innovations; “the number of software-related patents grew as computers were integrated into a greater expanse of everyday products.” U.S. Gov’t Accountability Office, Report to Congressional Committees, *Intellectual Property: Assessing Factors That Affect Patent Infringement Litigation Could Help Improve Patent Quality*, GAO-13-465, at 12-13 (2013), <http://tiny.cc/0md99w>. Currently, about half of all new patents relate in some manner to computer software, the vast majority of which go to inventors and companies outside the software sector. *Id.* at 11-13.

B. The continued patentability of software furthers economic growth.

“[B]oth economic theory and practical experience suggest that the availability of patents for software promotes innovation by supplying (additional) incentives to inventors.” Julie E. Cohen & Mark A. Lemley, *Patent Scope and Innovation in the Software Industry*, 89 Cal. L. Rev. 1, 5 (2001). New limitations on that patent protection would therefore inflict very significant injury on the U.S. economy.

First, because patent protection is a critical incentive to expenditures for software research and development, limitation of software patentability would lead to a decline in software innovations. Without patent protection, prospective software entrepreneurs face serious risks that competitors will free-ride on their innovations by pilfering the essential elements of a software program. *See, e.g.*, Bradford L. Smith & Susan O. Mann, *Innovation and Intellectual Property in the Software Industry: An Emerging Role for Patents?*, 71 U. Chi. L. Rev. 241, 241-42 (2004). With proper protection, by contrast, potential innovators are motivated to pursue new inventions and to proceed to commercial development to collect their economic rewards. *Id.* at 256-257.²

Second, any new obstacles to software development would carry a penalizing multiplier effect that could threaten the broader economy. Because software is at the heart of the efficiency revolution that has contributed vastly to U.S. economic growth over the past few decades, causing companies to divert their resources away from software research and de-

² Although software is protected by copyright (*see* 17 U.S.C. § 117), “[u]nlike a patent, a copyright gives no exclusive right to the art disclosed; protection is given only to the expression of the idea—not the idea itself.” *Mazer v. Stein*, 347 U.S. 201, 217 (1954).

velopment would have a ripple effect on productivity, affecting all segments of the economy. *See* BCG, *supra*, at 11.

Third, limiting software patentability would particularly harm small and start-up entities, which rely upon software patents in order to gain critical early funding. Software patents “play a role of some importance in the development of firms seeking to enter the software industry” insofar as they significantly improve a company’s efforts to obtain venture capital. Ronald J. Mann & Thomas W. Sager, *Patents, Venture Capital, and Software Start-Ups*, 36 *Research Policy* 193, 194 (2007), <http://tiny.cc/snd99w>. Thus, in the software space, start-up “[f]irms that have higher numbers of patents and patent applications pending are more likely to receive funding from outside investors, and more likely to subsequently ‘exit’ from the entrepreneurial phase through IPO or acquisition.” Iain M. Cockburn & Megan MacGarvie, *Patents, Thickets, and the Financing of Early-Stage Firms: Evidence From the Software Industry*, Nat’l Bureau of Econ. Research, Working Paper 13644, at 42 (2007), <http://tiny.cc/nod99w>.

II. The District Court Erroneously Held The Asserted Claims Ineligible Under Section 101.

Section 101—which extends patent eligibility to “any new and useful process, machine, manufacture, or composition of matter”—plainly encompasses software. In *Alice Corporation*, the Supreme Court recognized that

“many computer-implemented claims are formally addressed to patent-eligible subject matter.” 134 S. Ct. at 2359. This Court has repeatedly reached the same conclusion.³

Of course, the fact that software is not categorically excluded from patent eligibility does not mean that every software claim satisfies Section 101. Software claims are subject to the very same Section 101 standards that apply to all other categories of patents—no more generous and no more restrictive. (Software claims are also subject to the other distinct patent requirements applicable to all claims, including Sections 102, 103, and 112—standards that have yet to be applied to the claims at issue here.)

The Supreme Court has established a two-step test to “distinguish[] patents that claim laws of nature, natural phenomena, and abstract ideas from those that claim patent-eligible applications of those concepts.” *Alice Corp.*, 134 S. Ct. at 2355. A court first “determine[s] whether the claims at issue are directed to one of those patent ineligible concepts.” *Id.* If—and

³ Following *Alice Corp.*, this Court has confirmed that software innovations are eligible for patent protection. See *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1259 (Fed. Cir. 2014). That result is consistent with decades of past practice. See, e.g., *Research Corp. Techs.*, 627 F.3d at 862-64; *Eolas Techs. Inc. v. Microsoft Corp.*, 399 F.3d 1325 (Fed. Cir. 2005); *In re Alappat*, 33 F.3d 1526 (Fed. Cir. 1994) (en banc).

only if—the claims is so directed, a court “determine[s] whether the additional elements ‘transform the nature of the claim’ into a patent eligible application.” *Id.*

The Court has described “the concern that drives this exclusionary principle as one of pre-emption.” *Alice Corp.*, 134 S. Ct. at 2354. That concern requires a careful balance: while “[m]onopolization” of “[l]aws of nature, natural phenomena, and abstract ideas”—the “basic tools of scientific and technological work”—would “tend to impede innovation more than it would tend to promote it,” it is also true that too broad an application of “this exclusionary principle” would “swallow all of patent law,” as “[a]t some level, all inventions ... embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas.” *Id.* (quotations omitted).

Here, the district court erred at both steps of the analysis. It incorrectly held that the patent claims are directed to an “abstract idea.” And it erred in its assessment of whether the claims were sufficient to transform an abstract idea into a patent-eligible application of such an idea.

A. Because the asserted claims are not directed to an abstract idea, Section 101 is not implicated.

The Supreme Court has defined abstract ideas as “fundamental economic practice[s]” that are “long prevalent.” *Bilski*, 561 U.S. at 611 (quotation omitted). Thus, in *Bilski*, the Court identified “the basic concept of

hedging” as an abstract idea because it “is a fundamental economic practice long prevalent in our system of commerce and taught in any introductory finance class.” *Id.* (quotation omitted). Likewise, in *Alice Corporation*, the Court held that “intermediated settlement” is similarly a “fundamental economic practice” that is a “building block of the modern economy.” 134 S. Ct. at 2356 (quotation omitted).

Two principles are relevant in applying this concept in the software context.

First, although the Supreme Court has not “delimit[ed] the precise contours of the ‘abstract ideas’ category” (*Alice Corp.*, 134 S. Ct. at 2357), *Alice Corporation* and *Bilski* provide clear guidance—other asserted “abstract ideas” can be assessed by comparing them to the two concepts (risk hedging and intermediated settlement) that the Supreme Court identified as abstract in *Alice Corporation* and *Bilski*.

This Court has properly applied these principles to hold patent-ineligible other concepts such as third party performance guarantees (*buySAFE, Inc. v. Google, Inc.*, 765 F.3d 1350, 1355 (Fed. Cir. 2014)), viewing advertising as a form of currency (*Ultramercial, Inc. v. Hulu, LLC*, 772 F.3d 709, 715 (Fed. Cir. 2014)), organizing information that is “not tied to a specific structure or machine” (*Digitech Image Tech., LLC v. Elecs. for*

Imaging, Inc., 758 F.3d 1344, 1350 (Fed. Cir. 2014)), and processing insurance claims (*Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1338 (Fed. Cir. 2013)).

All are “fundamental ... practice[s]” and “building block[s]” (*Alice Corp.*, 134 S. Ct. at 2356), that are “basic concept[s],” “undisputedly well-known,” that “humans have always performed” (*Content Extraction & Transmission LLC v. Wells Fargo Bank, N.A.*, 776 F.3d 1343, 2014 WL 7272219, at *3 (Fed. Cir. 2014)), and that are of “ancient lineage” (*buySAFE*, 765 F.3d at 1355).

Second, patent claims directed to a technological problem specific to the digital environment do not implement *any* abstract idea. Thus, when the digital environment “introduces a problem that does not arise in the ‘brick and mortar’ context” and the claim is directed at solving that particular problem, it typically is not an abstract idea. *DDR Holdings, LLC v. Hotels.com, L.P.*, 773 F.3d 1245, 1258 (Fed. Cir. 2014). For the same reason, a claim that “presents functional and palpable applications in the field of computer technology” is not excluded by Section 101. *Research Corp. Techs.*, 627 F.3d at 868.

The federal government embraced this position before the Supreme Court in *Alice Corporation*, explaining that “the abstract-ideas exception

should not encompass innovations in technology, science, or industry as such, e.g., inventions that improve the way computers function, including those ‘based on linear programming, data compression, and the manipulation of digital signals.’” U.S. Amicus Br. at 15-16, *Alice Corp.*, 134 S. Ct. 2347 (No. 13-298), 2014 WL 828034 (quoting *Bilski*, 561 U.S. at 605). Such “inventions should be patent-eligible because they disclose concrete technological applications and fall within patent law’s traditional bailiwick of the scientific, technological, and industrial arts.” *Id.* at 16.

Examples include a software process that permits a user to quickly manipulate a digital photo by removing unwanted blemishes; software that creates a means for tracking human gestures as an input mechanism for computers; and user interface software that enables users to quickly and efficiently rearrange the user interface of a device. These innovations all are *unique* to the digital world. That they are the result of substantial—and substantially costly—research and development efforts underscores that these advancements are anything but abstract. In such circumstances—which apply to a significant majority of software patents—no further analysis under Section 101 is required to determine that the claim is patent-eligible.

The district court failed to apply these principles in holding that the asserted claims here implicate the “abstract idea” exception to Section 101.

To begin with, the court—after quoting the claim language—correctly noted that “[f]acially, these claims do not seem directed to an abstract idea.” A13. That observation should have ended Section 101’s “threshold” inquiry.

But the lower court went on to say that to the extent the claims *were* directed to an “abstract idea,” “it would be fair to characterize the claims as drawn to the idea of automated rules-based use of morph targets and delta sets for lip-synchronized three-dimensional animation.” A16. Merely reciting this “idea” demonstrates that it bears no resemblance whatsoever to “abstract ideas” such as risk hedging, intermediated settlement, and third-party performance guarantees. *See supra*, 13-14.

The “idea of automated rules-based use of morph targets and delta sets for lip-synchronized three-dimensional animation” is decidedly *not* a “fundamental ... practice” (*Alice Corp.*, 134 S. Ct. at 2356), it is not a “basic concept,” “undisputedly well-known,” that “humans have always performed” (*Content Extraction & Transmission*, 2014 WL 7272219, at *3), nor is it of “ancient lineage” (*buySAFE*, 765 F.3d at 1355).

To the contrary, these claims describe an approach to accomplishing a specific, practical, and useful improvement to the existing computer-aided processes used for lip synching in animation. There is no “building block” at issue that, if monopolized, would “improperly [tie] up ... human ingenuity.” *Alice Corp.*, 134 S. Ct. at 2354. (And the district court’s apparent concern with the breadth of the claimed invention is properly addressed by applying the separate requirements of Section 112, *see infra*, 29-30, not by broadening the Section 101 test.)

The district court thus ignored the standards established in *Alice Corporation*, *Bilski*, *buySAFE*, and other Section 101 decisions; it simply identified an “idea” (“using a rules-based morph target approach” to achieve digital “lip synchronization”) and labeled the idea “abstract.” But that approach would allow any process or method claim to be categorized as an “abstract idea,” because *every* process or method is—at bottom—the “idea” of performing a series of steps to achieve a particular outcome. If Section 101 excluded all such “ideas,” any process claim could be rendered non-patentable. *See Mayo Collaborative Servs. v. Prometheus Labs., Inc.*, 132 S. Ct. 1289, 1293 (2012) (cautioning that “too broad an interpretation” of the scope of Section 101, including the definition of an abstract idea, would “eviscerate patent law”).

Because no abstract idea is at issue here, the claims are patent eligible under Section 101.

B. Even if these claims were directed to an abstract idea, they do substantially more than claim computer implementation of an abstract idea.

An abstract idea is not patentable subject matter under Section 101, but the Supreme Court has long recognized that an “*application*” of an abstract idea “may well be deserving of patent protection.” *Diamond v. Diehr*, 450 U.S. 175, 187 (1981); *see also Mackay Radio & Tel. Co. v. Radio Corp. of Am.*, 306 U.S. 86, 94 (1939) (“While a scientific truth, or the mathematical expression of it, is not a patentable invention, a novel and useful structure created with the aid of knowledge of scientific truth may be.”). The claim satisfies Section 101 if it “contains an ‘inventive concept’ sufficient to ‘transform’ the claimed abstract idea into a patent-eligible application.” *Alice Corp.*, 134 S. Ct. at 2357.

The claim “must include additional features to ensure that the claim is more than a drafting effort designed to monopolize the abstract idea.” *Alice Corp.*, 134 S. Ct. at 235 (quotation and alterations omitted). That means it must do “significantly more” than describe the abstract idea. *Id.* at 2359-60 (quotation omitted).

Although the Supreme Court has not provided express guidance to assess whether a claim does “significantly more” than describe an abstract idea, *Alice Corporation* and *Bilski* identify three guideposts—the preemptive effect of the claim, its degree of detail, and whether the claim constitutes an improvement upon technology. The claims here plainly satisfy the “significantly more” standard.

First, the claim’s **preemptive effect**—the extent to which it would “inhibit further discovery”—informs whether it has satisfied the second step of the Section 101 inquiry. *Alice Corp.*, 134 S. Ct. at 2354 (quotation omitted). Claims that “do not attempt to preempt every application of the idea” generally satisfy the Section 101 threshold. *DDR Holdings*, 773 F.3d at 1259. Thus, claims that “recite a specific way” of accomplishing a task—including a specific kind of automation that “resolv[es] [a] particular Internet-centric problem”—do not broadly preempt any asserted abstract idea, and are therefore patent-eligible. *Id.*

By contrast, where claims “add nothing of practical significance to the underlying abstract idea,” they are typically patent-ineligible because their effect is to preempt innovation with respect to the entire abstract idea. *Ultramercial*, 772 F.3d at 716. And for the same reason, merely “[n]arrowing the abstract idea” to a “particular” “environment” generally

does not render it patent-eligible, as the claim would still wholly preempt that idea within the limited environment. *Id.* (quotation omitted).

The claims here do not preempt a broad building block that would unduly obstruct innovation. Instead, the claims describe a very specific means for providing automatic animation of lip synchronization of three dimensional characters. There is no risk that the claims could foreclose innovation by others.

The district court appears to have agreed—it found that the patents “do not claim a monopoly, as Defendants argue, on ‘the idea that the human mouth looks a certain way while speaking particular sounds,’ ‘applied to the field of animation.’” A13. Moreover, the court expressly found that “the patents do not preempt the field of automatic lip synchronization for computer-generated 3D animation.” A19. The court’s analysis should have stopped at this point, as these conclusions demonstrate that the claims are patent-eligible. Working backward from the issued claim by selectively removing elements and then declaring anything that is left to be an abstract idea, as the court appears to have done, is a recipe for unpredictable and inconsistent patent-eligibility decisions that are totally unrelated to the preemptive effect of the claim.

Second, the **degree of detail** regarding the application or implementation of the innovation informs whether it is eligible. As the Supreme Court has explained, courts must ask whether the limitations in “the patent claims,” taken as a whole, “add *enough*” in the way of specific, practical application to differentiate the scope of the claimed invention from the underlying abstract idea itself. *Mayo*, 132 S. Ct. at 1297. When there are “additional features to ensure that the claim is more than a drafting effort designed to monopolize the abstract idea,” the claim is typically eligible for patent protection. *Id.* The detail must “narrow, confine, or otherwise tie down the claim.” *Accenture Global Servs., GmbH v. Guidewire Software, Inc.*, 728 F.3d 1336, 1345 (Fed. Cir. 2013).

“Simply appending conventional steps, specified at a high level of generality, [is] not *enough* to supply an ‘inventive concept.’” *Alice Corp.*, 134 S. Ct. at 2357. For this reason, merely adding a token reference to the application of a non-technical process “on a computer” is insufficient to establish eligibility.

Unlike the claims at issue in *Alice Corp.*, *buySAFE*, and similar cases, the claims here do not merely add to an abstract idea a bald instruction to perform the idea on a computer. Rather, they recite a practical innovation and contain a significant degree of detail regarding how this innova-

tion is accomplished in practice—for example, the sequences necessary to accomplish the claimed process. The detail contained in the claims strongly suggests they amount to a practical application of an idea, rather than effectively claiming the idea itself.

Third, claims that **improve technology** are patent eligible. That is, claims that “improved an existing technological process” fall within the scope of Section 101. *Alice Corp.*, 134 S. Ct. at 2358. In the context of software innovations, claims that “improve the functioning of the computer itself” or “effect an improvement in any other technology or technical field” are patent eligible. *Id.* at 2359. Accord, *DDR Holdings*, 773 F.3d at 1257 (where a “claimed solution is necessarily rooted in computer technology in order to overcome a problem specifically arising in the realm of computer networks,” it is typically eligible for patent protection); *Bancorp Servs., L.L.C. v. Sun Life Assur. Co. of Canada (U.S.)*, 687 F.3d 1266, 1278 (Fed. Cir. 2012) (Section 101 satisfied where a computer is “integral to the claimed invention, facilitating the process in a way that a person making calculations or computations could not”); *Research Corp. Techs.*, 627 F.3d at 869 (claims that are “inventions with specific applications or improvements to technologies in the marketplace are not likely to be so abstract”).

By contrast, the bulk of the recent precedents applying Section 101 have involved so-called “business method” patent claims. *See, e.g. Alice Corp.*, 134 S. Ct. at 2357; *Bilski*, 561 U.S. at 609-10; *buySAFE*, 765 F.3d at 1354. In these cases, “generic computer implementation” of a non-technological process or method, without anything more, “fail[s] to transform” such an idea “into a patent-eligible invention.” *Alice Corp.*, 134 S. Ct. at 2357.

The claims here have an obvious technological effect: they aid in the technological goal of generating computer animation. These are not claims that contain mere token references to a computer or its use; instead, these claims are inherently tied to the digital creation of a three-dimensional computer animation. Indeed, the district court itself acknowledged that the claims “are tangible, each covering an approach to automated three-dimensional computer animation, which is a specific technological process.” A13.

The claims are therefore patent-eligible under Section 101.

III. The District Court Erred By Transforming The Section 101 Analysis Into An Inquiry Into Obviousness And Indefiniteness.

The Section 101 test may, in some limited circumstances, “overlap” with other requirements of the Patent Act (*Mayo*, 132 S. Ct. at 1304), but

the other crucial “limitations”—including that “any claimed invention must be novel, § 102, nonobvious, § 103, and fully and particularly described, § 112”—“serve a critical role in adjusting the tension, ever present in patent law, between stimulating innovation by protecting inventors and impeding progress by granting patents when not justified by the statutory design” (*Bilski*, 561 U.S. at 609). Section 101, while important, is—and must remain—“*only a threshold test.*” *Id.* at 602 (emphasis added).

The district court effectively imported into Section 101 elements of the separate obviousness and definiteness inquiries. By considering extensive prior art to determine the “point of novelty” at issue in the claims (*see, e.g.*, A17), the court conducted what was in practical effect an obviousness analysis—and applied a Section 103-like legal standard that is plainly inappropriate under Section 101. Moreover, in considering whether the claims were “specified at the highest level of generality” (*see, e.g.*, A18), the court effectively evaluated whether the claims are sufficiently definite—but without reference to the standards established under Section 112.

It is, of course, entirely appropriate for the lower court to assess compliance with Sections 103 and 112, and *amici* take no position on whether the patents at issue satisfy these requirements. But those inquiries have no place in assessing the claims under Section 101.

A. Section 101’s test is separate and distinct from the obviousness inquiry.

While a court must discount certain “well-understood, routine, [and] conventional activit[ies]” in conducting the second step of the Section 101 analysis (*see Alice Corp.*, 134 S. Ct. at 2359 (quoting *Mayo*, 132 S. Ct. at 1299)), that requirement is fundamentally different from a Section 103 obviousness inquiry. The district court here erred **procedurally**, because Section 101 requires it to identify the abstract idea *before* discounting “conventional activity;” and it erred **substantively**, because “conventional activity” is fundamentally different from the standard for obviousness, but the district court equated the two.

First, as already discussed, Section 101 requires a court, as an initial matter, to identify the abstract idea at issue in the patent claim. If such a non-patentable concept is present, the court must then consider whether the claims do “significantly more” than describe the unpatentable concept. *Mayo*, 132 S. Ct. at 1294.

The district court’s approach here, however, was the reverse—and therefore clear error. *See Cal. Inst. of Tech.*, 2014 WL 5661290, at *11 (C.D. Cal. 2014). The court *first* discounted what it found in the prior art to arrive at what it termed the “point of novelty”—and then considered whether that asserted innovation was patent eligible.

It is a long-standing, “general rule that patent claims ‘must be considered as a whole.’” *Alice Corp.*, 134 S. Ct. at 2355 n.3 (quoting *Diehr*, 450 U.S. at 188). Section 101 does *not* permit a court to “dissect[] the claims into old and new elements and then ... ignor[e] the presence of the old elements in the analysis.” *Bilski*, 561 U.S. at 611 (quoting *Diehr*, 450 U.S. at 188). Indeed, “all inventions at some level embody, use, reflect, rest upon, or apply laws of nature, natural phenomena, or abstract ideas,” and “too broad an interpretation” of Section 101 could therefore “eviscerate patent law.” *Mayo*, 132 S. Ct. at 1293.

Virtually any patent claim—if stripped down far enough—will rest on some kind of patent-ineligible concept. *Alice Corp.*, 134 S. Ct. at 2355 n.3. Indeed, “inventions in most, if not all, instances rely upon building blocks long since uncovered, and claimed discoveries almost of necessity will be combinations of what, in some sense, is already known.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 418-19 (2007). The district court’s approach is therefore a recipe for invalidation of virtually any patent claim.

Second, the district court erred as a substantive matter. It wrongfully equated the steps that should be disregarded in Section 101 analysis—those activities that are “well-understood,” “routine” and “conventional”

(*Alice Corp.*, 134 S. Ct. at 2359)—with *all* of the concepts found in the relevant prior art.

As the Supreme Court has held since *Diehr*, “conventional” in the context of Section 101 means “conventional industry practice.” *Alice Corp.*, 134 S. Ct. at 2358 (quoting *Diehr*, 450 U.S. at 178). Activity is “conventional” only where it is “known to the industry.” *Id.* at 2358-59. This follows from the meaning of “conventional” itself, which is defined as “conforming to” or “based on” “traditional usages or attitudes” as well as “commonly encountered, observed, or performed.” Webster’s Third New International Dictionary 498 (1981).

And “conventional” is not the only limiting factor; to discount the activity in conducting the Section 101 analysis, it must also be “well-understood” and “routine.” *Alice Corp.*, 134 S. Ct. at 2359. As this Court has explained, “routine and conventional” activity is disregarded under Section 101. *DDR Holdings*, 773 F.3d at 1259; *see also Ultramercial*, 772 F.3d at 715.

Accordingly, the Supreme Court has made plain that Section 101 requires the discounting of only a narrow range of conduct that is so well-understood that it is the sort of activity “*commonly* encountered, observed, or performed” in the relevant industry. As this Court explained (prior to

adoption of the two-step framework in *Mayo* and *Alice Corporation*), a patent claim is outside the scope of Section 101 by virtue of a “disqualifying characteristic” only where that characteristic “exhibit[s] itself so manifestly as to override the broad statutory categories of eligible subject matter.” *Research Corp. Techs.*, 627 F.3d at 868. That standard provides an appropriate basis for identifying this limited category of conventional activity.

Thus, one lower court has correctly observed that such “conventional elements do not constitute everything in the prior art.” *California Inst. of Tech.*, 2014 WL 5661290, at *14. To be sure, “conventional elements and prior art may overlap” (*id.*); any “conventional element” is almost certainly within the prior art for purposes of obviousness. But the prior art contains in addition many concepts that, while relevant to a patent’s validity under Sections 102 and 103, are not “conventional” within the meaning of *Alice Corporation*, *Mayo Clinic*, and their progeny. Thus, an unpublished doctoral thesis available only in the library of Freiburg University qualifies as relevant prior art for Sections 102 and 103. *See In re Hall*, 781 F.2d 897, 899-900 (Fed. Cir. 1986).

Here, in disregarding *all* elements that were contained in the prior art to conduct the Section 101 analysis (*see* A17-18), the court wrongly conflated *all* ideas contained in the prior art with the much narrower category

of conventional, industry-standard activity. That error enormously and erroneously expanded the reach of Section 101.

Whether the claims are “obvious” for purposes of Section 103—which requires identification of “differences between the prior art and the claims” and “the level of ordinary skill in the pertinent art”—is a separate question that remains for determination on remand. *KSR*, 550 U.S. at 406 (quotation omitted).

B. The Section 101 inquiry is distinct from Section 112’s requirements.

In conducting its putative Section 101 analysis, the district court appeared to equate “abstract idea” with indefiniteness: “[a]n abstract idea is the extreme case of functional language.” A15. The court found the asserted claims too “general[]” to warrant patent protection. A18.

Section 112 “provides powerful tools to weed out claims that may present a vague or indefinite disclosure of the invention.” *Research Corp. Techs.*, 627 F.3d at 869. Permitting district courts to develop a separate “generality” jurisprudence divorced from Section 112’s detailed requirements opens the door to random invalidation of patents based on individual courts’ views of “generality.” The district court’s approach thus impermissibly broadened the reach of Section 101’s exclusionary principle.

Moreover, the court ignored the detailed standards governing Section 112 in undertaking this unauthorized inquiry. *See, e.g., Nautilus, Inc. v. Biosig Instruments, Inc.*, 134 S. Ct. 2120, 2124 (2014) (claim must “inform, with reasonable certainty”); *Takeda Pharm. Co. v. Zydus Pharm. USA, Inc.*, 743 F.3d 1359, 1368-69 (Fed. Cir. 2014) (enablement); *LizardTech, Inc. v. Earth Res. Mapping, Inc.*, 424 F.3d 1336, 1344 (Fed. Cir. 2005) (best mode).

The district court did not apply any of these standards in reaching its “generality” holding, and instead created a new, vague test not authorized by the statute. Whether the asserted claims of the ’576 and ’278 patents satisfy the Section 112 definiteness requirement is a matter to be addressed on remand—it is not part of the Section 101 inquiry.

* * *

In the wake of the Supreme Court’s decision in *Alice Corp.*, district courts are confronting a large number of Section 101 challenges to computer-related patents. As the decision below demonstrates, there is considerable confusion about how courts should analyze this question—and that confusion is undermining the clarity and predictability of patent protection, which is essential to ensure continued innovation in this critical area of the economy.

This case presents the Court with an opportunity to explain to district courts how to address Section 101 questions:

- First, by determining whether the claim is directed to an abstract idea, a category that does not include claims directed to technological problems specific to the digital environment;
- Second, if the claim is directed to an abstract idea, by assessing whether the claim does “significantly more” than simply describe the abstract idea—taking into account the claim’s preemptive effect, degree of detail, and whether it relates to an improvement of technology; and
- Third, by not importing into the Section 101 inquiry the separate standards and legal principles established under other patent requirements, such as Section 103 and Section 112.

Providing the lower courts with clear guidance will eliminate the uncertainty surrounding this issue, and ensure that Section 101 does not swallow up the separate, well-defined prerequisites for patent protection.

CONCLUSION

The Court should conclude that the asserted claims of the '576 and '278 patents satisfy Section 101's threshold requirement of patent eligible subject matter.

Respectfully submitted,

/s/ Andrew J. Pincus

Andrew J. Pincus

Paul W. Hughes

Mayer Brown LLP

1999 K Street, N.W.

Washington, D.C. 20006

(202) 263-3000

Counsel for amici curiae

Dated: March 6, 2015

CERTIFICATE OF COMPLIANCE

Pursuant to Federal Rule of Appellate Procedure 32(a)(7)(C), the undersigned counsel certifies that this brief:

(i) complies with the type-volume limitation of Rule 29(d) because it contains 6,373 words, including footnotes and excluding the parts of the brief exempted by Rule 32(a)(7)(B)(iii); and

(ii) complies with the typeface requirements of Rule 32(a)(5) and the type style requirements of Rule 32(a)(6) because it has been prepared using Microsoft Office Word 2007 and is set in Century Schoolbook font in a size equivalent to 14 points or larger.

Respectfully submitted,

/s/ Andrew J. Pincus
Andrew J. Pincus
MAYER BROWN LLP
1999 K Street, N.W.
Washington, D.C. 20006
(202) 263-3000

March 6, 2015

CERTIFICATE OF SERVICE

I hereby certify that on March 6, 2015, I served the foregoing brief on all counsel of record via the Court's CM/ECF system.

Respectfully submitted,

/s/ Andrew J. Pincus
Andrew J. Pincus
MAYER BROWN LLP
1999 K Street, N.W.
Washington, D.C. 20006
(202) 263-3000

March 6, 2015