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**Hearing on "The Patent Eligibility Restoration Act – Restoring Clarity, Certainty, and Predictability to the U.S. Patent System"**

**Before the Subcommittee on Intellectual Property**
**U.S. Senate Committee on the Judiciary**

**January 23, 2024**

Chairman Coons, Ranking Member Tillis, and Members of the Subcommittee:

Thank you for this opportunity to testify on the Patent Eligibility Restoration Act (PERA). I am the Executive Director of the High Tech Inventors Alliance. HTIA members include many of the nation's most innovative and advanced manufacturers; they develop and build products that are critical to the U.S. economy. HTIA companies manufacture the microprocessors that allow computers to function and the networking and telecommunications equipment that let devices communicate with each other. HTIA members are also global leaders in the development of artificial intelligence, quantum computing, software, and cloud computing. HTIA includes some of the most innovative companies in the world and the largest users of the patent system, with its members collectively investing more than $165 billion each year in research and development and having been granted approximately 350,000 patents.

Today, I hope to communicate three main points:

First, I will explain why HTIA is skeptical that legislative changes are necessary to reform current patent eligibility jurisprudence. While advocates of PERA contend that current law is uncertain, the evidence tells a different story. Empirical studies and the Patent Office's own data show that the predictability of patent eligibility is on par with other major patent law doctrines.

Second, I will describe HTIA's concerns with PERA and why patent eligibility should not be expanded to encompass purported inventions that do not reflect an advance in technology.

And, third, in the hopes of fostering a more productive dialogue on this issue, I will suggest a potential path forward should the Subcommittee continue to explore legislative reform in this area.

## I. The current patent eligibility jurisprudence results in predictable and appropriate outcomes

The current test for patent eligibility is both clear and in line with historical and global standards for patenting: to be eligible under § 101, a patent must reflect the practical application of an advance in technology. This notion traces its origins back to the U.S. Constitution itself, in which the Framers authorized the grant of patents for the purpose of promoting the progress of the "useful arts," which has always been understood to mean technology.[1] Shortly after the Constitution's adoption, this understanding was confirmed in one of the very first Patent Acts: the Patent Act of 1793 defined patent-eligible subject as "any new and useful art, machine, manufacture or composition of matter"—in other words, the means for the practical implementation of an advance in technology.

The 1952 Patent Act replaced the word "art" with the more modern term "process," but it made clear that it was not changing the meaning of the word,[2] which continues to be defined by the industrial

[1] *See Bilski v. Kappos*, 561 U.S. 593, 634 (2010) (Stevens, J., concurring in judgment); *In re* Bilski, 545 F.3d 943, 1001 (Fed. Cir. 2008) (Mayer, J., dissenting); Peter S. Menell, *Forty Years of Wondering in the Wilderness and No Closer to the Promised Land: Bilski's Superficial Textualism and the Missed Opportunity to Return Patent Law to its Technological Mooring*, 63 STAN. L. REV. 1289, 1292-94 (2011).

[2] *See Bilski*, 545 F.3d at 975–76 (Dyk, J., concurring); Menell, *supra* note 1, at 1296–97, 1302.

context of the words that surround it: machines, manufactures, and compositions of matter.[3] This same statutory standard, virtually unchanged since 1793, remains the law today.

The current eligibility jurisprudence retains this focus on technological progress and can be distilled into two basic rules:

1. A patent must claim an *advance in technology* and cannot merely reflect a non-technological innovation in methods of organizing human activity, such as a business or financial method;[4] displaying or curating information for human consumption;[5] detecting or anticipating fraud or other human wrongdoing;[6] or games and aesthetic creations.[7]

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[3] *See Bilski*, 545 F.3d at 968–70 (Dyk, J., concurring); Brief for Respondent at 26–27, *Bilski v. Kappos*, 561 U.S. 593 (No. 08–964), 2009 WL 3070864, at 26-27.

[4] *See, e.g., cxLoyalty, Inc. v. Maritz Holdings Inc*., 986 F.3d 1367, 1376-77 (Fed. Cir. 2021) (system of using reward points for purchases); *Solutran, Inc. v. Elavon, Inc.*, 931 F.3d 1161, 1166-67 (Fed. Cir. 2019) (system of processing a check); *Inventor Holdings, LLC v. Bed Bath & Beyond, Inc.*, 876 F.3d 1372, 1375 (Fed. Cir. 2017) (paying for internet purchases at a physical location); *Smart Systems Innovations, LLC v. Chicago Transit Authority*, 873 F.3d 1364, 1371-72 (Fed. Cir. 2017) (pre-registering bank cards for purchase of transit fares); *Mortgage Grader, Inc. v. First Choice Loan Servs. Inc.*, 811 F.3d 1314, 1318 (Fed. Cir. 2016) (providing loans anonymously based on credit history); *Dealertrack, Inc. v. Huber*, 674 F.3d 1315, 1331-33 (Fed. Cir. 2012) (selling auto loans through an automated clearinghouse); *OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362 (Fed. Cir. 2015) (setting prices for goods based on consumer demand); *Versata Dev. Grp., Inc. v. SAP Am., Inc.*, 793 F.3d 1306, 1333 (Fed. Cir. 2015) (setting prices based on a combination of the class of products sold and the class of potential purchasers).

[5] *See Electric Power Group, LLC v. Alstom S.A.*, 830 F.3d 1350, 1355 (Fed. Cir. 2016) ("merely selecting information, by content or source, for collection, analysis, and display does nothing significant to differentiate a process from ordinary mental processes, whose implicit exclusion from § 101 undergirds the information-based category of abstract ideas."); *Trading Techs. Int'l v. IBG LLC*, 921 F.3d 1378, 1384 (Fed. Cir. 2019) (claimed interface is ineligible because it is "focused on providing information to traders in a way that helps them process information more quickly, not on improving computers or technology."); *Interval Licensing LLC v. AOL, Inc.*, 896 F.3d 1335 (Fed. Cir. 2018) (presenting information in the background without disrupting a user's primary activity on a computer); *Affinity Labs of Texas, LLC v. DIRECTV, LLC*., 838 F.3d 1253, 1256 (Fed. Cir. 2016) (streaming regional television broadcasts to mobile devices outside of the region).

[6] *See Universal Secure Registry LLC v. Apple Inc*., 10 F.4th 1342, 1348-50 (Fed. Cir. 2021) (using a third-party intermediary and existing technology such as biometric identification and two-factor authentication to confirm a transaction); *id.* at 1351-52 ("[A]uthenticating a user using conventional tools and generating and transmitting that authentication" is ineligible subject matter); *Bozeman Financial LLC v. Federal Reserve Bank of Atlanta*., 955 F.3d 971, 876-77 (Fed. Cir. 2020) (detecting fraud in financial transactions by checking identifying parameters stored at a third-party site); *id.* at 980 (claims were "directed to the abstract idea of collecting and analyzing information for financial transaction fraud or error correction).

[7] *See In re Guldenaar Holdings B.V.*, 911 F.3d 1157, 1159 (Fed. Cir. 2018) (game of dice using a specially marked die); *In re Smith*, 815 F.3d 816 (Fed. Cir. 2016) (new version of blackjack); *Planet Bingo, LLC v. VKGS LLC*., 576 F.App'x 1005, 1006 (Fed. Cir. 2014) (computerized bingo game); *In re Bongiorno*, 857 F.App'x 637 (Fed Cir. 2021) (planning a vacation or travel itinerary); *In re Sturgeon*, 839 F.App'x 517, 519 (Fed. Cir. 2021) (method of creating a floral arrangement); *In re Brown*, 645 F.App'x 1014 (Fed. Cir. 2016) (giving a haircut that is balanced to head shape); *Ubisoft Entertainment, S.A. v. Yousician Oy*, 814 F.App'x 588, 591–92 (Fed. Cir. 2020) (method of teaching a person to play the guitar); *In re Zunshine*, 816 F.App'x 477, 478–79 (Fed. Cir. 2020) (method of overcoming the urge to break a diet).

2. A patent must claim a practical implementation, as opposed to claiming mere goals or results,[8] the context in which the invention is implemented,[9] or an underlying law of nature or scientific principle in the abstract.[10]

These basic concepts are not confusing or overly complex. To the contrary, they are relatively simple and have proven to allow for consistent and predictable application by the USPTO and the courts.

Based on data from the decade since the Supreme Court's decision in *Alice Corp. v. CLS Bank International*, 573 U.S. 208 (2014), it has become clear that the current test for patent eligibility is—in fact—being predictably applied. For example, the USPTO has published a study examining the application of section 101 that considered both patent-eligibility rejection rates and the variability of examiners' eligibility determinations.[11] This study found that in the initial years after the Supreme Court's *Alice* decision, both rejection rates and examiner variability increased. Over time, however, the USPTO and the patent bar absorbed the teachings of *Alice*: the USPTO's study also found that by 2020, both rejection rates and examiner variability were *lower than they were before the Alice case was decided.*[12]

These decreases indicate that rejections under section 101 are both less frequent and more consistent today than they were before the *Alice* decision, which is precisely the opposite of what the stakeholders advocating reform contend. A review of the raw data on USPTO office actions confirms the conclusions of the USPTO study. After an initial spike, patent eligibility rejections appear to have fallen to rates that are equivalent to or lower than the pre-*Alice* rates. Assuming that the USPTO is not simply

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[8] *See, e.g., Bot M8 LLC v. Sony Corp. of Am.*, 4 F.4th 1342 (Fed. Cir. 2021) (claim to increasing the difficulty of a video game based on previous aggregate results found ineligible because "the claim leaves open *how* to accomplish this"—it "merely recites result-oriented uses of conventional computer devices"); *Free Stream Media Corp. v. Alphonso Inc.*, 996 F.3d 1355, 1363-64 (Fed. Cir. 2021) ("[Although the claimed invention purports to] allows devices on the same network to communicate where such devices were previously unable to do so," "the asserted claims do not at all describe how that result is achieved."); *American Axle & Manufacturing, Inc. v. Neapco Holdings LLC*, 967 F.3d 1285, 1295 (Fed. Cir. 2020) ("The Supreme Court has long held that claims that state a goal without a solution are patent ineligible."); *Internet Patents Corp. v. Active Network, Inc.*, 790 F.3d 1343, 1348 (Fed. Cir. 2015) (system of retaining the state of data in online forms while navigating between forms); *id.* at 1348 (section 101 proscribes claims that "describe[] the effect or result disassociated from any method by which . . . [it] is accomplished.").

[9] *See, e.g., Simio, LLC v. FlexSim Software Prods.*, Inc., 983 F.3d 1353, 1360, 1361 (Fed. Cir. 2020) ("Simply applying the already-widespread practice of using graphics instead of programming to the environment of object-oriented simulations is no more than an abstract idea."); *id.* ("[T]he claim is directed to the use of conventional or generic technology [*i.e.*, graphical processing] in a well-known environment."); *ChargePoint, Inc. v. SemaConnect, Inc.*, 920 F.3d 759, 770 (Fed. Cir. 2019) (finding claims ineligible because they simply "add networking capabilities to existing charging stations to facilitate various business transactions")

[10] *See Illumina, Inc. v. Ariosa Diagnostics, Inc.*, 952 F.3d 1367, 1371 (Fed. Cir. 2020) ("Laws of nature and natural phenomena are not patentable"); *In re Gitlin*, 775 F.App'x 689, 691 (Fed. Cir. 2019) (barring claims to the mathematical concept of interpolation); *Diamond v. Diehr*, 450 U.S. 175, 185 (1981) ("[L]aws of nature, natural phenomena, and abstract ideas" are "[e]xcluded from . . . patent protection."); *Le Roy v. Tatham*, 55 U.S. 156, 175 (1852) ("A principle, in the abstract, is a fundamental truth; an original cause; a motive; these cannot be patented, as no one can claim in either of them an exclusive right.").

[11] *See* USPTO, Adjusting to *Alice*: USPTO patent examination outcomes after *Alice Corp. v. CLS Bank International* (April 2020).

[12] *See id.* at pp. 5-7.

flouting the law, the only plausible explanation for this is that patent applicants are successfully predicting how examiners will assess patent eligibility.

Similar predictability is evident in the courts. A recent academic study that examined all 368 patent eligibility decisions that were made by the Federal Circuit between 2012 and 2022 confirms that courts are also applying the section 101 jurisprudence in a predictable way.[13] The authors found that patent eligibility decisions by district courts and the Patent Trial and Appeal Board are affirmed at the high rate of 87%, indicating that eligibility determinations are (at least according to the Federal Circuit) overwhelmingly correct. Perhaps more importantly, the study also found that there was relatively little evidence of disagreement among Federal Circuit judges regarding how to apply the Supreme Court's patent-eligibility jurisprudence. As the authors noted in a summary of their study, "under one of the most well-established metrics for measuring the predictability in the law, § 101 proved to be *more predictable* than other areas of patent law over the past decade."[14]

Moreover, the benefits of the *Alice* decision are not limited to the relative increase in predictability. Other empirical studies have, for example, separately concluded that the *Alice* decision directly resulted in increased R&D investment,[15] was correlated with increased sales by software firms,[16] that "*Alice* was associated with a significantly higher likelihood of receiving a new round of VC funding" for tech startups,[17] and there was "a positive association between *Alice* and both R&D spending by software firms and patenting by firms that held relatively more software patents prior to the Court's opinion."[18]

In sum, the current patent eligibility jurisprudence is neither unpredictable in its outcomes nor harmful to venture capital or R&D investments. Rather, it is *Alice* and its progeny that encourages and protects technological innovation.

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[13] *See* Datzov, Nikola and Rantanen, Jason, Predictable Unpredictability (July 28, 2023). Available at SSRN: https://ssrn.com/abstract=4380434 or http://dx.doi.org/10.2139/ssrn.4380434.

[14] The Predictability of the Mayo/Alice Framework—A New Empirical Perspective, PatentlyO, Nov. 15, 2023 (emphasis added). For another academic expert's perspective on the predictability of the current jurisprudence, *see* Chris Holman, Further Thoughts on Patent Eligibility and Predictability, PatentlyO, Nov. 20, 2023 ("[I] was not surprised by [Rantanen and Datzov's] conclusion that the courts are generally applying the Supreme Court's patent eligibility precedent in a relatively predictable manner. I have not conducted such a systematic review of patent eligibility decisions, but over the years I have read quite a few of them, and for some time I have felt that I can usually predict which way the court will go in deciding these cases. . . . . Occasionally I am surprised by a decision, but from what I have seen the courts are generally treating the 'abstract ideas' exception as a bar to the patenting of non-technological innovations.").

[15] Srinivasan, Sridhar, Do Weaker Patents Induce Greater Research Investments? (December 22, 2018). Available at SSRN: https://ssrn.com/abstract=3185148 or http://dx.doi.org/10.2139/ssrn.3185148.

[16] Lin, Yu-Kai and Rai, Arun, Patent Protection and Software Innovation: Evidence from Alice, at 16-17 (September 9, 2020); https://ssrn.com/abstract=3703055.

[17] *Id.* at 22.

[18] Helmers, Christian and Love, Brian J., Patent Law Reform and Innovation: An Empirical Assessment of the Last 20 Years (September 22, 2023); https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4580645.

## II. PERA would create greater uncertainty while inappropriately expanding patent eligibility to non-technological innovation.

PERA would, for the first time in our nation's history, amend the Patent Act to broadly allow the patenting of nontechnological innovation. The literal text of PERA would expand patenting and patent infringement liability to any area of human activity that uses or relies on any type of machine or manufacture—from computers and routers to pencils and paper—or to any subject matter that the patentee has simply chosen to claim in conjunction with using technology. The hard experience of the pre-*Alice* era shows that this would not only lead to absurd patents but would do real damage to the U.S. economy.

### a. The proposed "practically performed" test is fundamentally flawed.

PERA would add a subsection (b)(1)(B) to § 101 that would provide that a process that is "substantially economic, financial, business, social, cultural, or artistic" in nature can nevertheless be patented if "the process cannot practically be performed without the use of a machine or manufacture."

To my knowledge, this type of "practically performed" test has no basis in the over two centuries of American patent law. As a result, there is no caselaw or doctrinal guideposts that tell us what "practically be performed" means. That means that neither patent examiners nor the courts possess any significant expertise in assessing whether a claimed process can be "practically performed" without the aid of a machine or manufacture.

In addition, whether something can be done "practically" is an inherently subjective—and, therefore, uncertain—test. It is difficult to imagine how this proposed test would not lead to greater inconsistency and less predictability in the application of section 101 relative to current law.

Equally important, it is not at all clear why patent eligibility should turn on whether something could be done "practically" without the aid of some artifact of human technology (*i.e.*, without a machine or manufacture). This does not resemble any traditional theory of patent eligibility of which I am aware and seems certain to produce outcomes that are completely detached from the patent system's purpose of incentivizing advances in technology.

While there is significant uncertainty about how the "practically performed" test would be applied, what does seem certain is that PERA would expand patent eligibility to potentially include any nontechnological process. Statements made by some of the advocates of PERA, including a former appellate judge, appear to indicate that they believe—as do I—that the "practically performed" test would result in a nontechnological process's being eligible for patenting if, in practice, it would be expected to be performed at a speed, accuracy, or scale that would normally require the use of a machine.[19]

This would mean that, if a process was of a type that would normally be considered in the real world to—as a practical matter—require the use of a telephone, a computer, or the internet—or even a

[19] *See, e.g.*, The Hon. Paul Michel, "Passing PERA Assures Patent Eligibility for All Useful Inventions," IPWatchdog, Sep. 5, 2023 ("For example, methods of quickly calculating and allocating numerous stock account values at the end of the trading day clearly cannot be performed mentally or by a person with only pencil and paper. Obviously, a computer is required. The argument that the patent [under PERA] would have to contain precise time limits, such as 'within 1 millisecond' is fanciful, if not silly.").

pen to record or communicate information—it would be patent eligible. Given the volume of human activity that is normally conducted with the use of such devices, this would result in an enormous expansion that would result in the scope of patent eligibility being far broader than it ever has been at any time in the history of the United States or—to my knowledge—of any other country.

However, even this description understates the scope of patent eligibility under PERA because it focuses only on the subset of machines used for processing and communicating information. PERA is not so limited; it would extend eligibility to any process that requires *any* type of machine or *any* type of "manufacture" (*i.e.*, essentially anything that was made by a human being, as opposed to being found in nature). Although this may not have been the drafters' intent, the literal text of PERA would appear to extend eligibility to almost any type of modern process imaginable, especially if the process in question was of a type that would be performed at an industrial or commercial scale.

Take, for example, the process of running a particular offensive play in the context of a football game. Would a jury conclude that it would be *practical*, in the real world, to perform an offensive football play without using a football (which is a manufacture)? Or would a USPTO examiner conclude that it would be *practical,* in the real world, to conduct the type of marriage ceremony that is customary in this country without the use of a wedding ring (which is also a manufacture)? If not, then things like football plays and traditional wedding ceremonies—along with a host of other human activities—would be eligible for patenting under PERA.

**b. Eligibility under PERA would be easily manipulated by means of "clever claiming."**

Unfortunately, patent eligibility under PERA would be easily manipulated through clever claiming, which substantially exacerbates these concerns. As described above, the bill's test would make eligible "any process" that cannot practically be performed without the use of a machine or manufacture. In practice, the "process" at issue in any particular case would be the process that is claimed in the application or patent in question. Because applicants are free to draft their claims using whatever language they see fit, a literal reading of PERA would allow an applicant to transform virtually any nontechnical process into a patent eligible invention merely by including an express requirement in the claim that a particular machine or manufacture be used to perform one or more of the steps of the claimed process. For example, a process for proposing marriage would be eligible under PERA as long as the process, as claimed, requires the presentation of an engagement ring (which is a manufacture).

In modern life, there are very few human activities that do not involve a machine or manufacture. The consequence is that almost any activity could be claimed in a manner that makes it patent eligible under a reading of PERA that interprets its words and phrases according to their customary meaning—which is how the courts, and particularly the Supreme Court, would generally construe a new statute.[20]

[20] We recognize that some believe that PERA would be interpreted in a more limited way in light of current patent examination practices at the USPTO. HTIA respectfully disagrees with this conclusion because these examination practices arise from the very judicial exceptions that would be explicitly abrogated by PERA. Additionally, the Supreme Court—which has the ultimate say in construing federal statutes—is unlikely to be versed in examination practice or to adopt an interpretation that is based on the USPTO's internal practices rather than the text of the statute.

**c. PERA's other limitations on patent eligibility would be equally ineffective.**

The only other limitations contained in PERA that would typically be relevant to the types of patents usually encountered outside of the life sciences are the exclusions relating to "mathematical formula[s]" and "mental process[es]."

However, PERA would exclude a mathematic formula only if it were "claimed as such" and not as a "part" of a "useful process, machine, manufacture, or composition of matter, or any useful improvement thereof." Read literally, this would appear to exclude a mathematical formula only if it were claimed "as such" (*i.e.*, as a "mathematical formula," which is generally understood to mean a mathematical relationship or rule expressed using mathematical symbols) and, even then, only if claimed completely on its own rather than as applied in a process or by a machine.

Similarly, a "mental process" would be excluded only if it is "performed solely in the human mind" and only if "claimed as such." Therefore, PERA would exclude only those mental processes that are claimed as being performed solely in the mind. Thus, any mental process would be rendered eligible simply by, for example, appending a requirement that the result be recorded outside the mind. In conjunction with the "claimed as such" phrase, this language could be read to make purely mental processes patent eligible so long as they were not explicitly claimed as being performed solely in the human mind. In other words, the mere silence of a claim as to whether a process was to be performed solely in the mind or on a computer would be sufficient to establish the patent eligibility of a purely mental process.

**d. Expanding patent eligibility to include non-technological innovations would cause real and substantial harms.**

While patents on football plays and marriage proposals are not themselves of much concern to HTIA, they demonstrate the vastness of the non-technological subject matter that falls between what is currently patent eligible and what would be eligible under PERA. As amply demonstrated by the history of patent litigation in this country, HTIA's concerns are more than credible, given the well-documented harm imposed on HTIA members (and many others) by the assertion of patents for non-technological "inventions" such as business methods prior to the *Alice* decision. Having experienced the flood of low-quality patents claiming business methods "on a computer" in the wake of the introduction of personal computers and a second flood of similarly harmful patents claiming nontechnological processes performed "on the internet," HTIA members and other similarly-situated technology companies were forced to absorb billions of dollars of additional (and completely unnecessary) litigation costs in order to defend themselves against infringement suits based on patents—mostly involving obvious implementations of business methods—that were invalid under Supreme Court caselaw and should never have been issued.

In addition to these very sizeable direct economic costs, tech companies have also experienced first-hand the substantial business distractions, disruption, and uncertainties associated with the meritless—but all too often profitable—assertion of invalid patents. The expansion of patent eligibility to nontechnological subject matter is of particular concern to HTIA due to the decreased availability of review by the PTAB—largely as a result of the practice of discretionarily denying meritorious petitions – and because the PTAB is not allowed to consider patent ineligibility as grounds for cancellation in an inter partes review. Based on these very negative first-hand experiences and the well-documented litigation

abuses that resulted from these past booms in patenting, HTIA and its members would urge Congress not to squander America's current technological advantages with respect to critical emerging technologies such as artificial intelligence and quantum computing by repeating these past mistakes.

Some argue that concerns about extending patent eligibility to non-technological subject matter should be dismissed because problematic patents would be screened out by sections 102, 103, and 112. This argument is refuted by historical experience. The truth is that, prior to *Alice*, patents on equally "silly" (and seemingly obvious) inventions—such as swinging sideways on a swing[21] or exercising a cat using a laser pointer[22]—were *not* screened out by other statutory requirements but rather were issued. More importantly, this argument misses the point that allowing the patenting of nontechnological processes undermines the core purpose of the patent system *irrespective* of whether the activity at issue is novel, non-obvious, and adequately enabled and described. For example, there is evidence that the availability of patent protection for business methods directly harmed investment in technological R&D.[23] Disincentivizing investment in technological innovation is the opposite of the purpose of patent protection—and the opposite of what would promote U.S. competitiveness and economic growth.

There are other reasons to believe that expanding patent eligibility to non-technological subject matter would harm the interests of the United States. According to one empirical study, financial patents were litigated at a rate at least 27 times greater than other patents.[24] Given that the median cost of defending a patent suit in which more than $25 million is at stake is around $5 million, even a more modest expansion of patent eligibility to include only business methods would impose billions of dollars of dead-weight loss on the U.S. economy. Additionally, it is likely that allowing patents on non-technical subject matter would have the effect of crowding out patents on (and investment in) technological advancements. It is typically much more cost effective to obtain patents on non-technological subject matter because such innovations (*e.g.,* novel business methods) can be conceived with little or no investment in R&D. This means that incurring the high cost of engaging in technological innovation would place a company at a competitive disadvantage relative to those who obtain equivalent exclusive rights to non-technological innovations, which would disincentivize investment in technological R&D.

Finally, some have also argued that concerns about PERA should be ignored because the expanded availability of patents, in and of itself, would enhance U.S. competitiveness. While providing a comprehensive response to this claim is beyond the scope of my testimony, it should suffice to point out that the majority of patents granted by the USPTO claim foreign inventions and were issued to foreign applicants. The principal effects of enacting PERA would thus be to incentivize foreign innovation and enrich foreign patent owners. This would come at the expense of U.S. businesses and consumers, because substantially all the harms with respect to increased liability, greater business uncertainty, and higher

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[21] U.S. Patent No. 6,368,227.

[22] U.S. Patent No. 5,443,036.

[23] *See, e.g.,* Srinivasan, Sridhar, Do Weaker Patents Induce Greater Research Investments? (December 22, 2018). Available at SSRN: https://ssrn.com/abstract=3185148 or http://dx.doi.org/10.2139/ssrn.3185148.

[24] Lerner, Josh. 2008. "The Litigation of Financial Innovations," The Journal of Law & Economics Vol. 53, No. 4 (November 2010), pp. 807-831 (working paper version available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1267555) (finding financial patents litigated at a rate 27 to 39 times greater than that of patents as a whole).

litigation costs would fall on those doing business in the United States, with most of these costs ultimately being passed on to American consumers in the form of higher prices. There can be no serious argument that subsidizing foreign innovation or enriching foreign entities at the expense of American consumers and businesses somehow benefits the United States. This alone should cast serious doubt on claims that an unprecedented expansion of patent eligibility is justified simply because it would allow for increased patenting.

In sum, HTIA and its member companies are deeply concerned about the broad expansion of patentable subject matter that would result from the enactment of PERA as currently drafted. Both empirical evidence and historical experience indicate that expanding patent eligibility to include non-technological subject matter will undermine incentives to invest in technological innovation and impose substantial dead-weight losses on the U.S. economy, thereby harming U.S. competitiveness at a time when retaining our technological and economic advantages relative to adversarial nations is critical to our national security.

## III. Potential paths forward.

While HTIA has strong concerns about PERA as currently drafted, we remain committed to the effort to address legitimate concerns with respect to patent eligibility. For years, HTIA has invested substantial time and resources into engagement on this issue, and we will happily continue to engage with interested members of Congress and stakeholders on all sides of this debate in the hopes of finding common ground. Although we do not believe that there currently is significant empirical evidence to support the dramatic changes proposed by PERA, we also acknowledge that there are concerns expressed by other stakeholders that appear to have some legitimacy and likely warrant further consideration.

That being said, HTIA firmly believes that the fundamental goal of the U.S. patent system is—and must remain—the promotion of technological advancement. Accordingly, HTIA remains ardently opposed to any legislative reform that would expand patent eligibility to encompass non-technological ideas and processes. As discussed above, there is every reason to believe that such an expansion would substantially weaken incentives to invest in technological research and development, while enriching the (mostly foreign) owners of U.S. patents at the expense of American consumers and businesses. With that preface (and associated caveats), I continue to believe that there are at least two potential paths forward that would present vastly less risk of harm from unintended consequences and that should attract less opposition from stakeholders as a whole.

The first of these is to focus on a narrow solution that is targeted specifically and exclusively at any areas of technology for which the current jurisprudence has created *significant and empirically demonstrable* impediments to obtaining patent protection to the extent that such impediments can be shown to have resulted in clearly insufficient levels of R&D investment. Ideally, the solution to such a problem would be to create a new form of *sui generis* intellectual property that would be available only for innovations in the identified fields of technology, thereby minimizing the risk of harming existing incentives or imposing substantial unnecessary costs or business uncertainty with respect to areas of technology that cannot be shown to have been harmed by the current jurisprudence. As noted above, the relevant data from the ten-plus years since the principal Supreme Court decisions at issue in this debate suggest that there are no widespread problems. But, to the extent that it can be shown that these decisions created gaps in protection for narrow classes of technology, a targeted, *sui generis* solution should be adequate to fill them and restore appropriate incentives to innovate while minimizing the risk

to the interests of most stakeholders as well as the risk of negative unintended consequences more generally. Importantly, this type of *sui generis* protection could be modeled after patent protection, with the main difference being that subject matter eligibility would extend only to the specific, narrowly-defined categories shown to have been harmed. Such a targeted solution could provide intellectual property rights that would be equivalent to patent protection without creating unnecessary challenges with respect to the broader areas of technology for which current eligibility law appears to be working well.

The second potential path forward would be to develop a broader legislative solution that tethers patentability to its underlying policy purpose by explicitly limiting the availability of patent protection to only those inventions that embody an advance in technology. A broader solution of this type would retain a single form of protection and a single technology-neutral standard for determining eligibility, which would potentially ensure greater uniformity of treatment across technologies. However, it would also impact a far broader and more diverse cross-section of stakeholders, which might greatly increase the difficulty of reaching a consensus. Additionally, while such a solution would benefit both the public and national interest, it would also attract strong opposition from those special interests who would derive some private benefit from the ability to obtain patent protection for non-technological innovations. If this type of solution were to be attempted, the most logical starting point for discussions would be something akin to the technology-focused approaches that have been adopted in Europe. While the European approach has evolved over time, in general it has conditioned patent protection on the showing of a technological advance. This has (again, in general) appropriately limited patentability to technological inventions by requiring an applicant to demonstrate such an advance in technology in order to satisfy the European equivalents of the eligibility and non-obviousness requirements. A similar requirement could be adopted in U.S. patent law either by explicitly limiting eligibility under Section 101 to inventions that embody an advance in technology or by amending Section 103 to state that the non-obviousness requirement can only be satisfied by a technological advance over the prior art. This solution would have the benefits of incorporating a clearly defined and long-standing standard that has proven to be workable in practice and that would already be familiar to a significant proportion of applicants and patent attorneys.

In conclusion, I would again like to express my appreciation for the opportunity to testify today. HTIA and its members appreciate the interest in this important issue and remain committed to working with the Subcommittee to find a consensus solution to appropriately address the legitimate concerns that have been expressed by other stakeholders.