

**Questions for the Record from Chairman Tillis
for David Jones, Executive Director, HTIA**

- 1. I understand that your coalition still has concerns with our 112 modifications. What additional changes to 112 would you recommend we make in order to prevent the issuance of overbroad patents?**

HTIA does not have concerns with the proposed Section 112 amendments, but we do believe that significant further changes are required. We appreciate and support the change to Section 112(f), but – as expressed at the hearing – we do not believe they are sufficient to restore Section 112’s intended effect. Nor do they come close to counterbalancing the harm that would result from expanding patent eligible subject matter in the manner that has been proposed. To address these issues, significant additional changes to Section 112(a) and (b) would be needed to – *inter alia* – ensure that claims are limited to what was actually invented, to provide effective enforcement of the existing requirement that the full scope of patent claims must be both supported and enabled, to require a more rigorous indefiniteness analysis, and to make absolutely clear that Section 112(f) is the only exception to the rule against functional claiming. Additionally, a new statutory provision should be adopted to clarify that compliance with Section 112 is an issue of law for the court and may be decided without aid of a jury in appropriate cases. This would allow trial courts to resolve many challenges to validity based on Section 112 early in litigation.

- 2. Are there any additional statutory changes we should consider making in conjunction with a Section 101 reform? Are there other changes which would help address your membership’s overarching concerns—the issuance of overbroad, non-inventive patents—with any potential 101 reform?**

As we have consistently emphasized throughout this process, HTIA believes it is critical to limit patent protection to technological inventions and to ensure that patents are granted only for inventions that embody an advance in technology. This point – and its basis in the “useful arts” language of the Constitution – is discussed at length in our roundtable submission and written testimony.

Questions for the Record from Senator Blumenthal for David Jones, Executive Director, HTIA

1. Striking the appropriate balance between encouraging innovation and protecting consumers is a key goal of our patent system.

a. What impact will broadening the subject matter that can be patented have on industry?

It will harm industry in the tech sector. As written, the proposed legislation will reduce R&D spending and decrease innovation. R&D investment, venture capital funding, and company market capitalization have soared in the wake of the Supreme Court's eligibility decisions, hitting new records. The increased availability of business method patents will reverse this trend. Unlike patents on technological advances, there is no evidence that extending patent protection to business methods or other non-technical subject matter provides additional incentives to innovate or encourages investment in R&D.¹ In fact, empirical studies have shown that the availability of business methods patents actually *lowers* research intensity among firms that obtain them and that R&D investment by these firms *increased* as a result of the *Alice* decision.²

Moreover, the harm caused by the proposed amendments would fall almost entirely on U.S. industry and consumers, while most of the benefits would go to foreign companies. This is because nearly *two-thirds* of U.S. patent applications are filed by foreign residents,³ resulting in the majority of U.S. patents being issued to foreign companies.⁴ This means that most of the patents (and the bulk of the benefits) that result from lowering standards for obtaining U.S. patents will go foreign entities. However, because the rights conferred by U.S. patents are geographically limited to U.S. territory, virtually all enforcement of the patents granted as a result of the proposed changes would be against U.S. businesses. Thus, the bulk of the benefits would be enjoyed foreign entities, while virtually all the cost and harm caused by the proposed changes would fall on U.S. businesses.⁵

¹ See, e.g., Robert M. Hunt, *Business Method Patents and U.S. Financial Services*, Contemporary Economic Policy, Vol. 28, No. 3, pp. 322-352, July 2010 (https://papers.ssrn.com/sol3/papers.cfm?abstract_id=1627385) (finding no evidence that the availability of business method patents in the wake of the *State Street Bank* decision had a positive effect on research intensity in the financial services sector).

² Sridhar Srinivasan, *Do Weaker Patents Induce Greater Research Investments?* (December, 2018); (https://papers.ssrn.com/sol3/papers.cfm?abstract_id=3185148) (finding that firms that had previously sought patent protection for business methods decreased patenting while increasing R&D investment as a result of the *Alice* decision).

³ *Id.* at 182 (Table 7) and 184 (Table 9) (reporting 190,559 applications by U.S. residents and 332,522 applications by foreign residents in FY2017) <https://www.uspto.gov/sites/default/files/documents/USPTOFY18PAR.pdf>.

⁴ U.S. Patent and Trademark Office, FY2018 Performance and Accountability Report, at 183 (Table 8) and page 186 (Table 10) (reporting 161,970 patents issued to U.S. residents and 177,564 issued to foreign residents in FY2018).

⁵ Huawei's demand that Verizon pay it \$1 billion in patent royalties illustrates what can already happen under current law. The increased foreign ownership of patents that would result from the proposed changes to Section 101 – as well as the expansion of statutory subject matter – would significantly exacerbate this type of patent holdup. See Mike Masnick, "Huawei Now Using Patent Claims To Demand \$1 Billion From Verizon, As The US Tries To Chase Huawei Out Of The US Market," Techdirt, June 17, 2019; <https://www.techdirt.com/articles/20190613/02365642389/huawei-now-using-patent-claims-to-demand-1-billion-verizon-as-us-tries-to-chase-huawei-out-us-market.shtml>.

b. What impact will broadening the subject matter that can be patented have on consumers?

U.S. consumers will have fewer choices and higher prices. As discussed above, companies that have begun investing more in R&D in order to compete based on innovation would again reduce their investment in innovation. Additionally, there would be a net reduction in competition. It is axiomatic that decreased innovation and competition will result in fewer choices and higher prices.

c. Could these reforms increase consumer prices? If so, in what industries or on what products?

Patent laws are quite literally intended to increase prices. The exclusive rights granted by a patent are intentionally designed to reduce competition and allow patent owners to charge supracompetitive prices. This is justified based on the premise that allowing patent owners to extract monopoly rents will incentivize increased innovation, making consumers better off in the long run (because the benefits of the additional innovation will eventually outweigh the harms of decreased competition and increased prices). As discussed above, however, the problem with the proposed bill is that it would extend patenting to non-technological areas where patenting has been shown to *decrease* innovation. As a result, the proposed reforms would decrease both competition and innovation, leading to fewer choices and higher prices for consumers.

**Questions for the Record from Senator Hirono
for David Jones, Executive Director, HTIA**

- 1. Last year, Judge Alan Lourie and Judge Pauline Newman of the Federal Circuit issued a concurring opinion to the court’s denial of *en banc* rehearing in *Berkheimer v. HP Inc.*, in which they stated that “the law needs clarification by higher authority, perhaps by Congress, to work its way out of what so many in the innovation field consider are § 101 problems.”**

Do you agree with Judges Lourie and Newman? Does § 101 require a Congressional fix or should we let the courts continue to work things out?

No, HTIA agrees with other experts – including USPTO Director Iancu – that it is well within the power of the courts to address any lingering issues with respect to the Section 101 test. Additionally, we would note that the proposed legislation is not primarily directed to a “clarification” of eligibility. The main effect of the proposed bill would be to substantially *expand* eligibility, while doing little or nothing to clarify the line between eligible and ineligible subject matter. (In other words, the proposal would move the eligibility line, not clarify it.) There are legislative approaches that could provide additional certainty and clarity – to the extent this is actually necessary – while maintaining a similar scope of statutory subject matter. However, these are not under consideration.

- 2. The draft legislation includes the requirement that an invention be in a “field of technology.”**

- a. The European Union, China, and many other countries include some sort of “technology” requirement in their patent eligibility statutes. What can we learn from their experiences?**

The most important thing that we can learn is that the U.S. needs to have a technology requirement, just like every other major patent regime. There has been an international consensus that patenting non-technological subject matter is not helpful to innovation or economic growth. If the U.S. were to reject *Mayo* and *Alice* without adopting an effective technology requirement (which the proposed “field of technology” language is *not*), the U.S. would be an outlier in the international community. Every other major patent system has either an explicit or implicit requirement that excludes abstract ideas and limits patenting to technological inventions. And, since the time of the Founding, the U.S. has also had such a requirement (in the form of the abstract idea exclusion). The limitation of patent protection to technological inventions is supported by both empirical economic research and centuries of experience with patent regimes. It would be an enormous mistake to depart from this consensus by adopting legislation such as has been proposed.

- b. Is a claim that describes a method for hedging against the financial risk of price fluctuations—like the one at issue in the *Bilski* case—in a “field of technology”? What if the claim requires performing the method on a computer?**

The broadest claims in the *Bilski* patent were directed to the financial relationship of hedging in any environment and did not explicitly require the use of any apparatus or physical means (*e.g.*, implementation of the hedging strategy using a computer system). If “financial engineering”⁶ were deemed to be a technological field (which some have advocated) or if these claims were construed to

⁶ See https://en.wikipedia.org/wiki/Financial_engineering.

implicitly require use of some apparatus, they would potentially fall within a “field of technology.” Otherwise, they likely would not. However, if the claims were changed to require the method be performed on a computer (or using a telephone, computer network, fax machine, or any other physical apparatus), they would fall within a field of technology (and would also satisfy the proposed requirement of having utility in a field of technology). This illustrates why it is critical that eligibility require an advance in technology rather than the mere use of existing technology.

c. What changes to the draft, if any, do you recommend to make the “field of technology” requirement more clear?

The principal problem with the “field of technology” language is not lack of clarity. While there is some ambiguity as to the scope of this term, the much more serious problem is that the proposed language would only require that the invention be *used* (*i.e.*, have utility) in a field of technology. For the technology requirement to be consistent with the Constitutional goal of the patent system, it must require more than simply adding “on a computer” or “on the internet” (or words to that effect) to an abstract idea or business method. As discussed above, it must require that the claimed invention embody a technological advance rather than mere use of existing technology.

3. Sen. Tillis and Sen. Coons have made clear that genes as they exist in the human body would not be patent eligible under their proposal.

Are there other things that Congress should make clear are not patent eligible? There are already statutes that prevent patents on tax strategies and human organisms. Are there other categories that should be excluded?

HTIA continues to believe that abstract ideas should be excluded. It is worth emphasizing that almost no one believes (or even claims to believe) that it is a good idea to allow patenting of abstract ideas, laws of nature, and natural phenomena. While proponents of legislation argue that the existing non-statutory exclusions are hopelessly unclear and that it is thus necessary to abrogate them, this is neither true nor supported by the evidence. Patent eligibility is actually quite clear and predictable, which is why the affirmance rate for Section 101 rulings on appeal is higher than for either anticipation under Section 102 or obviousness under Section 103.⁷ Affirmance rates on Section 101 appeals are also substantially higher than for rulings on remedial issues – more *than twice as high* as damages decisions and *almost three times as high* as rulings on injunctive relief.⁸ In fact, two leading IP scholars calculated that the affirmance rate for all eligibility appeals since the *Alice* decision is above 90%, substantially higher than for almost any other frequently-appealed issue in patent law.⁹ The truth is that the existing judicial exceptions and test already accurately exclude inappropriate subject matter. Existing law is also clearer

⁷ For the most recent court term, patent eligibility determinations were affirmed 71% of the time, compared to 67% for anticipation under Section 102, 66% for obviousness under Section 103, and 67% for the requirements of Section 112. Gibson Dunn, *Federal Circuit Year in Review 2017/2018*, at 8 (reporting affirmance rates from August 1, 2017 to July 31, 2018); <https://www.gibsondunn.com/wp-content/uploads/2018/11/Federal-Circuit-2017-2018-Year-in-Review.pdf>.

⁸ *Id.*

⁹ Paul R. Gugliuzza & Mark A. Lemley, *Can a Court Change the Law by Saying Nothing?* 71 Vand. L. Rev. 765, 794 (2018) (reporting a 90.4% affirmance rate); https://scholarship.law.bu.edu/cgi/viewcontent.cgi?article=1207&context=faculty_scholarship.

and more predictable than any new statutory definition of statutory subject matter or specific exclusions is likely to be.

4. I have heard complaints that courts do not consistently enforce Section 112 with respect to claims for inventions in the high tech space.

a. Are these valid complaints?

These are absolutely valid complaints. While Section 112 may be applied with more rigor to pharmaceutical, biotech, and chemical patents, the courts have virtually read its requirements out of the law for software and other computer-implemented inventions.¹⁰ In part, this is the result of the Federal Circuit's misapplication of Section 112(f) and its refusal to apply the rule against functional claiming in a rigorous manner to software patents.¹¹ However, the roots of this inconsistent treatment go much deeper and – to a great extent – arise from the Federal Circuit's incorrect assumptions about software itself. For example, the court has characterized the process of writing and debugging a computer program as “mere clerical” work than anyone with skill in the art can do. As a result, the court has held that all three of the Section 112 requirements (written description, enablement, and best mode) can generally be satisfied by providing only minimal disclosure that describes the invention in very broad, functional terms with no discussion of how the invention is actually implemented in practice.¹² The result is that patent owners have often been successful in obtaining and enforcing broad claims that do not merely cover the specific practical application that was actually invented, but instead cover all conceivable ways of achieving the desired outcome or function, even future ways based on later-arising technologies that hadn't even been invented at the time of the patent.

b. Do the proposed changes to Section 112 adequately address those complaints and limit the scope of claims to what was actually invented?

No. While the proposed changes to Section 112(f) would be somewhat helpful and are appreciated, they do not adequately address HTIA's concerns and would not limit the scope of claims to what was actually invented. The proposed changes would be helpful in clarifying some of the remaining ambiguity in the wake of *Williamson v. Citrix Online, LLC*, 792 F.3d 1339 (Fed. Cir. 2015) (en banc), thereby restoring the law to what was originally intended by the current wording of Section 112(f). This would be a welcome change, but does not limit claims to what was actually invented. To accomplish this, significant changes to Sections 112(a) and (b) – which address written description, enablement, and definiteness – would be required. Additionally, aspects of the Federal Circuit case law – which has historically misinterpreted the statute, causing substantial uncertainty around the application of Section 112 – should be explicitly abrogated, just as has been proposed for the Section 101 case law.

¹⁰ For an early discussion of how the same statutory requirements have been applied very differently in the biotech and software fields, see Dan L. Burk & Mark A. Lemley, *Is Patent Law Technology-Specific?* 17 Berkeley Tech. L. J. 1155 (2002).

¹¹ See, e.g., Mark A. Lemley, *Software Patents and the Return of Functional Claiming*, 2013 Wis. L. Rev. 905 (2013).

¹² See, e.g., *Fonar Corp. v. Gen. Elec. Co.*, 107 F.3d 1543, 1549 (Fed. Cir. 1997) (internal citations omitted), and *Spectra-Physics v. Coherent*, 827 F.2d 1524, 1533 (Fed. Cir. 1987).

c. Are you concerned that the proposed changes will make it too easy for competitors to design around patent claims that use functional language?

No. The argument that the proposed changes to Section 112(f) would make it too easy for competitors to design around functional claims is a red herring. First, the argument that inconsequential changes – e.g., expressing an algorithm in a different programming language – would be sufficient to “design around” a claim under the proposed Section 112(f) language is simply wrong. The proposed text retains the “and equivalents thereof” language which would prevent minimal changes from defeating an infringement claim (just as it does today). Second, the proposed amendment simply clarifies that Section 112(f) is the only exception to the prohibition on functional claiming articulated in *Halliburton Oil Well Cementing Co. v. Walker*, 329 U.S. 1 (1946). In other words, it was intended that functional claims would either be governed by Section 112(f) or invalid under Sections 112(a) and (b), and therefore that all valid functional claims would be construed as limited to the corresponding structure described in the specification. The proposed amendment merely reemphasizes that this is the case.

5. There is an intense debate going on right now about what to do about the high cost of prescription drugs. One concern is that pharmaceutical companies are gaming the patent system by extending their patent terms through additional patents on minor changes to their drugs. My understanding is that the doctrine of obviousness-type double patenting is designed to prevent this very thing.

The Federal Circuit has explained that obviousness-type double patenting “is grounded in the text of the Patent Act” and specifically cited Section 101 for support.

Would the proposed changes to Section 101 and the additional provision abrogating cases establishing judicial exceptions to Section 101 do away with the doctrine of obviousness-type double patenting? If so, should the doctrine of obvious-type double patenting be codified?

Yes, it seems likely that the proposed language would do away with obviousness-type double patenting. Even if not, codifying the doctrine would probably not cause any harm so long as it is done properly. Additionally, the proposal would potentially abrogate the Printed Matter Doctrine and the rule against patenting aesthetic creations. (Although the Printed Matter Doctrine is now applied via Section 103, it appears to have its roots in Section 101 law and would likely be overruled by the broad abrogation that has been proposed.) Our understanding is that these effects are not intended, so both of these doctrines should be codified as well to avoid unintended consequences.

6. In its *Oil States* decision, the Supreme Court explicitly avoided answering the question of whether a patent is property for purposes of the Due Process Clause or the Takings Clause.

What are the Due Process and Takings implications of changing Section 101 and applying it retroactively to already-issued patents?

As noted in the question, the Supreme Court explicitly declined to clarify the application of Due Process and Takings to patents in the *Oil States* decision, and HTIA does not have a specific view on how the Court will eventually resolve those questions.