

**UNITED STATES
PATENT AND TRADEMARK OFFICE**



Report to Congress on “Patent eligible subject matter: Public views on the current jurisprudence in the United States”

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Artificial Intelligence and Emerging Technology Inaugural Stakeholder Meeting

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Overview

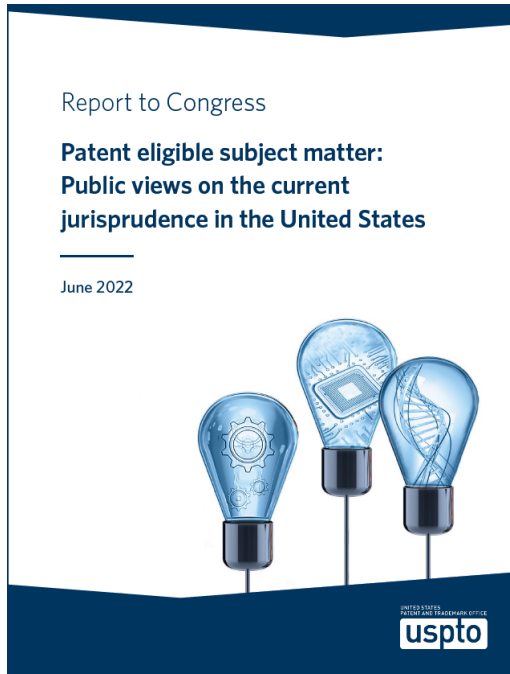
- **Background**
 - 2021 Federal Register Notice
 - Commenters
- **Report**
 - Topics
 - Key takeaways
 - Computer-related inventions and Artificial Intelligence (AI)
 - Life sciences
- **Next Steps**

Public responses

- The USPTO received 141 different written submissions, including 15 anonymous submissions
 - 43 comments from associations, nonprofit entities, and other advocacy groups;
 - 21 comments from companies and businesses;
 - 16 comments from law firms and practitioners;
 - 9 comments from academics, healthcare institutions, and universities; and
 - 34 comments from individuals, including inventors and patent applicants, and other entities that did not fit one of the aforementioned categories.
- A full list can be found at
 - www.uspto.gov/ip-policy/patent-policy/patent-subject-matter-eligibility



Report to Congress



Summary of stakeholder's views

- Overall theme: The patent system requires legal clarity and certainty
- Topics discussed in many comments include the following:
 - *Impacts on the economy and competition in the marketplace*
 - *Impacts on small and medium enterprises*
 - *Impacts on particular innovation sectors, i.e., life sciences and computer-related inventions*
 - *Legal costs*
 - *Access to technical information*
 - *National security*
 - *US competitiveness*

www.uspto.gov/ip-policy/patent-policy/patent-subject-matter-eligibility



Key takeaways

- Confirmation that the current jurisprudence has altered the landscape with particular, though quite different, impacts on the life sciences and computer-related industries.
- Agreement that the standard for determining whether an invention is eligible for patenting should be clear, predictable, and consistently applied.
- Supporters of the current jurisprudence, primarily from computer-related industries, asserted that the new eligibility standard provides a useful tool for addressing overly broad patents and defending against abusive lawsuits by patent assertion entities.
- Critics expressed concern that the jurisprudence has unreasonably and improperly expanded the scope and application of the judicially created exceptions to eligibility, resulting in significant inconsistencies, uncertainty, and unpredictability in the issuance and enforcement of patents.

Computer-related inventions and AI

- A substantial number of commenters identified the impacts of the current patent eligibility jurisprudence on emerging computer technologies and areas reliant on computer-related innovations.
 - Given the data provided by the USPTO's Inventing AI Report (2020), USPTO patent applications containing AI increased by more than 100%, rising from 30,000 to more than 60,000 annually between 2002-2018.
 - In addition,
 - during the same period, the share of all patent applications containing AI grew from 9% to nearly 16%; and
 - patents containing AI appeared in about 9% of all technology subclasses used by the USPTO in 1976 and spread to more than 42% by 2018.

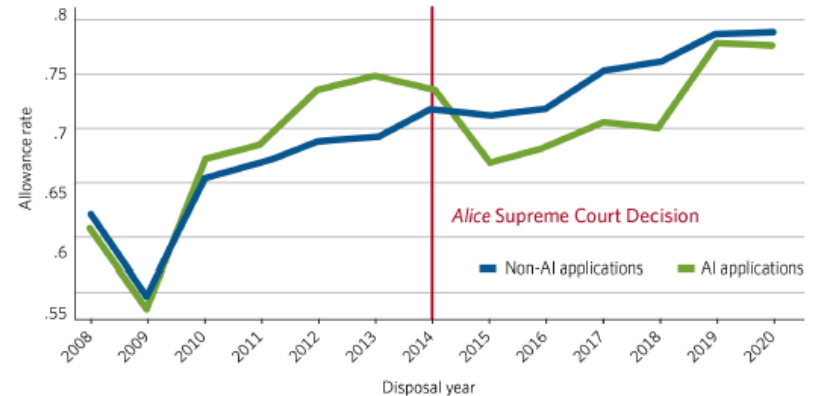


Computer-related inventions and AI

The USPTO study examined the potential impact of the Alice decision on allowance rates.

- Following the Alice decision, there is an observed decrease in the USPTO allowance rate for patent applications containing AI relative to non-AI applications, providing suggestive evidence that Alice impacted AI technologies differently.
- The allowance rate stayed below the non-AI application rate until 2019, when the allowance rate for applications containing AI increased by about 8%.
 - This increase is consistent with the finding in the “Adjusting to Alice” report that the 2019 USPTO patent examiner guidance substantially reduced the rate of subject matter eligibility rejections in Alice-affected technologies.

Figure 1: Allowance rates, 2009–2020: Patent applications containing AI and not containing AI



The allowance rate was calculated as the number of allowance over the number of disposals by disposal year. An application is classified as AI if the patent is AI, or if not patented, the latest PGPub is AI.

Computer-related inventions and AI

- Many commenters expressed concern about the application of the Mayo and Alice framework because there is no uniform definition of an abstract idea.
- Comments also noted that computer-implemented inventions are often a series of calculations, simulations, models, instruction sets, etc., which are not patentable themselves.
- Several commenters identified difficulties presented by the second element of the Mayo–Alice eligibility test, that is, whether the claimed invention is “significantly more” than an abstract idea.

Computer-related inventions and AI

- Stakeholders highlighted that the data do not support the inference that the current subject matter jurisprudence is having a negative impact on investment in innovation.
- Commenters identified examples of cases in which the current eligibility test resulted in a showing that a claimed invention provides a technical solution to a technical problem.
- In addition, commenters suggested that the current approach could help overcome obstacles to defining abstract ideas, and that it better aligns U.S. practices with those of other major jurisdictions.
- Commenters contended that the United States remains the preferred destination for investment in AI.
 - One association noted that “investment in AI in the United States was approximately \$23.6 billion for the second quarter of 2021, more than double the investment in AI in the next two leading countries, that is, China and the United Kingdom.”

Life sciences

- Life sciences industries emphasized their heavy reliance on patent protection to recoup investment, noting that the cost of researching and developing a new medicine is substantial in both time and money.
 - Several companies reported that it costs approximately \$2.6 billion to bring one medicine to market and that it takes approximately 12 years for a medicine to move from research and development to market.
- Commenters expressed concern about the divergence in patent eligibility standards between the United States and other countries, asserting that other countries provide more protection for medical diagnostics.
- Several examples were presented for patent application families for in which diagnostic claims have been granted outside the United States, and claims in counterpart U.S. applications remain rejected on patent eligibility grounds.

Life sciences

- Several commenters applauded the impact of the current jurisprudence, asserting that it facilitates better access to testing and medicine.
- Commenters also asserted that when it comes to IP protection for gene technologies and precision medicine, less is more because restricting access to gene sequences impairs research and development.
- Data was provided to refute claims of economic harm because “since the Supreme Court’s decision [in Myriad], there has been a proliferation of innovation and healthy competition in genetic testing, and overall investment in genomics increased from \$6.21 billion in 2013 to over \$17 billion in 2018.”



Next Steps

- The USPTO will continue to solicit feedback from stakeholders including through listening sessions.
- Stakeholders may to submit additional feedback and suggestions to 101@uspto.gov.



Thank you!

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