

Research Insights: Has Patent Policy Kept Pace with Innovation?

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Executive Summary

- The ways in which firms, entrepreneurs, investors and the government react to changes in patent policy can be unpredictable. Patent reform should be a dynamic, continuous process.
- Patent policy has wide-reaching and unexpected implications for innovation. These include cross-border access to capital, trade agreements and entrepreneurship.
- Reforming the system requires understanding not just where patent policy does and does not work, but how firms use patents to their strategic advantage and our best efforts to predict how they will react to changes.
- Patent policy does not simply govern what will be invented, but rather patent protection requirements must be subject to constant re-examination as scientific discovery and innovation continues. Recent examples include the limits of software, artificial intelligence and gene sequencing.

Recent patent reforms

Innovation is necessary for economic growth. In the United States, all branches of government have played a recent role in attempting to ease the barriers to innovation through the patent process. For example, in 2011, President Barack Obama signed the America Invents Act, which moved the U.S. from a “first to invent” to “first to file” system. While this brought the country’s patent system in line with much of the rest of the world, debate continues on whether the act strengthened or weakened the U.S. innovation process. The Supreme Court has also played a significant role through rulings.²

Patent reform is a balancing act between creating an efficient system and offering adequate protection for innovation to thrive. If the benefits of innovation are unattainable or limited to certain types of firms such as large corporations with significant legal teams, optimal innovation may suffer and adversely affect overall economic growth.

Uncertainty should also be a concern for policymakers and legislators. Patents with a high probability of being overturned by the courts could be just as devastating for innovation as an archaic patent system.

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² ex: Mayo Collaborative Services v. Prometheus Laboratories, Inc., Alice Corp v. CLS Bank International

Questions regarding what types of innovation can be protected deter research and leave the system vulnerable to abuse.

Enforceability of patent laws has also been impacted by recent reforms. For example, anti-joinder laws that allow firms to sue many patent violators at once have been removed. While this may protect some forms of innovation where large patent bases are concerned, it also weakens the fundamental patent protection for the patent holder.

Several key takeaways emerge from this discussion. First, while significant scholarship has been applied to the patent system, it's difficult to predict whether specific policies will strike the right balance between strengthening the system and keeping it from being too burdensome. This is because the system is inherently dynamic. Firms react to patents in unpredictable ways, often for strategic purposes. The scope of invention and what firms may have an incentive to try to patent is constantly changing. How these new discoveries interact with existing policy as well as how various branches of the government apply these policies to new research is also constantly changing. Well-thought-out patent reform must be a dynamic system as well if it is to aid the entrepreneurial process.

Forgotten areas of impact

Patent policy invokes images of cutting-edge research in state-of-the-art buildings. However, the debate often overlooks the implication of patent policy on foreign investment, international mergers and trade policy. While limited research has been conducted in this area, the impact could be extremely meaningful to the U.S. economy.

Foreign investors may face questions over how changes in patent policy may impact foreign investment in U.S. companies, in particular through trade restrictions and technology ownership. If the technology of a foreign company complements that of a U.S. company, but the two are subject to different patent protections, would patent policy inhibit an otherwise beneficial merger? If a foreign private equity firm is the majority owner of U.S. firm, how do the relative patent policies of the two companies impact the firm's protection?

The issue is intensified where foreign trade agreements are concerned. As one of the few issues still receiving bipartisan focus in Washington, antiquated intellectual property language in newly signed trade agreements could have costly ramifications for the U.S. economy that are still not fully understood. Further, future trade partners may require clarification on America's intellectual property stance and how it applies to cross-country technology flows and partnerships. It is useful for the U.S. to have a clearly defined position prior to the beginning of such discussions. Legislative work to bring together legal and economic scholars can and should begin immediately so that legislators have language from which to draw.

Finally, one of the most alarming issues which will require global cooperation in the near future will be cybersecurity and data privacy. The United States will play a massive role in drafting agreements and leading the world in framing the discussion. At the same time, today's most valuable U.S.-based companies are software and data companies that employ massive lobbying operations. The U.S. will need a clear position on how intellectual property intersects with the country's global security interests and how to move forward in leading global cooperation.

What can be patented and what should be?

Many of these issues will have to be litigated through the courts, but careful consideration of how the scope of what can be patented changes through the course of discovery is worthwhile. For example, Supreme Court decisions have changed what can be patented in gene sequencing and retroactively invalidated thousands of gene patents. Following these rulings, judicial challenges jumped more than tenfold, which presents challenges to the efficacy of patent laws. On the other hand, judicial rulings which clarify the boundaries of what can and cannot be patented is a necessary adjustment to patent laws that are at times too broad. Thus, it is not obvious that such ex post facto court decisions regarding patent disputes are harmful to entrepreneurs across the board. However, the possibility of patents being invalidated causes a problem for researchers and firms ex ante.

On a related note, policymakers need to understand how firms use patents as a strategic asset when forming patent policy. The market structure of different industries impacts how they use patents, and thus the role that policy reforms play in innovation. For example, the software space has been less affected by recent changes in patent policy compared to industries like biotechnology, because they have less of a tendency to build up patent walls. Further, the way that firms use patents strategically plays a crucial role in how reforms will affect individual industries. For example, increased maintenance fees are helpful in industries where large companies are the only ones who build up large patent bases, but not necessarily in industries where small firms or even individual inventors rely on patents to protect long-term research.

Practitioner and/or Policy Takeaways

Collaborations among members of different academic fields, legal scholars and policymakers should be supported to create a baseline set of language for policymakers to use in updating intellectual property portions of legislation and make policy recommendations.

- Areas of focus should extend to areas in which patent policy makes a difference, but is currently forgotten because the relationship is indirect. These include trade policies, state versus federal enforcement and tax policy.

- The scope of academic research should be expanded and research funded on new questions to be faced by firms in the future. For example, how do relative intellectual property systems impact cross-border flows? How does uncertainty regarding patent enforceability impact innovation? These research outputs need to be included in policy discussions.

List of Panelists and Affiliations

Chair:

Alan Marco, Former Chief Economist, *U.S. Patent and Trademark Office*; Associate Professor of Public Policy, *Georgia Institute of Technology*

Panelists:

- Anne Glover, Chief Executive Officer and Cofounder, *Amadeus Capital Partners*
- Mary Moore Hamrick, Chief Public Policy Officer, *Grant Thornton*
- Kyle Jensen, Associate Dean and Director of Entrepreneurship, *Yale School of Management*
- Jeff Kuhn, Assistant Professor of Strategy and Entrepreneurship, *UNC Kenan-Flagler Business School*