

September 23, 2014

Dan Correa
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Eisenhower Executive Office Building
1650 Pennsylvania Ave NW
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Via Electronic Mail (innovationstrategy@ostp.gov)

Re: *Strategy for American Innovation*

Dear Mr. Correa:

In response to the notice of inquiry published by the Office of Science and Technology Policy (OSTP) and the National Economic Council (NEC) in the Federal Register at 79 Fed. Reg. 44,064 (July 29, 2014), the Computer & Communications Industry Association (CCIA) submits comments concerning the strategy for American innovation. CCIA is a global trade association representing a leading cross section of computer, communications and Internet firms, which together generate annual revenues in excess of \$465 billion. For over 40 years, CCIA has been promoting innovation, and preserving full, fair and open competition throughout our industry. Our commitment to vigorous competition, freedom of expression and openness comes from understanding past successes and the factors that can help our industry thrive in the future.

Technology companies generally ask little from the U.S. Government other than a playing field that enables next generation innovations to reach the marketplace. We support greater competition in the broadband market, open network protections, balanced intellectual property, and trade agreements that reflect the best of U.S. laws and policies ranging from balanced copyright rules to discouragement of Internet censorship.

I. Background

Innovation is critical to promoting productivity and economic growth, as well as solving social and environmental problems. Yet the U.S. Government has had difficulty implementing a coherent institutional framework for addressing the increasingly diverse,

volatile, complex, and globally distributed nature of technology-enabled change. Congress abandoned its Office of Technology Assessment (OTA) twenty years ago; it eliminated the Technology Administration in the Department of Commerce in 2007. Meanwhile, a misdirected and misused patent system has imposed heavy costs and uncertainty on large segments of the economy, and efforts at reform now pit ordinary businesses against universities, while exposing division within universities between scholars and licensing offices.

Innovation is an increasingly rich and complex process that extends far beyond technological novelty. The case for government intervention in support of innovation varies greatly. At its worst, it can be reflexive, misapplied, and damaging to competition.

The RFI identifies varieties of innovation that do not fit the resource-intensive linear model and the policies associated with it. These include user innovation, combinatorial innovation, open innovation, Internet-enabled innovation, data-driven innovation, and institutional innovation. Although each has its champions, these models are not well-defined. In part they represent different aspects or phases of innovation and are not directly comparable as alternatives.

Nonetheless, the RFI raises an important question that reveals the lack of a policy or institutional framework for understanding these differences and their implications. There is considerable OECD work in this area where the U.S. Government should provide thought leadership – but has not done so. In terms of national models, the U.S. would do well to consider the UK’s Department of Business, Innovation & Skills (BIS) which has funded rigorous research on innovation (much through the Intellectual Property Office) and taken an aggressive, integrated approach to policy. *See BIS research strategy 2014 to 2015* (Sept. 2014), available at <https://www.gov.uk/government/publications/bis-research-strategy-2014-to-2015>.

The general-purpose technology of our time, information technology, enables innovation throughout the economy, in other technologies, business practice, government, social life, and culture – often at a very low cost. Yet judicial decisions favoring abstract and trivial patents (such as do-it-on-the-Internet patents) have imposed high costs of acquiring, enforcing, and defending against patents across vast expanses of the economy where patents were unknown 30 years ago. Innovators have been plagued

with expense and uncertainty, and the patent system has been wracked with controversy because this radical expansion was undertaken without foresight, planning, or accountability.

Conventional, siloed thinking persists in part because there is no effective focal point for institutionalized expertise within the federal government. OSTP is identified with the Administration in power, and its limited staff and priorities change as administrations change. At the other extreme, there is the Science and Innovation Policy Program (SciSIP) at the National Science Foundation (NSF), which sponsors academic research. There is little in between. In principle, SciSIP should contribute to sound, evidence-based policy. However, since it was initiated in 2005, it has only held one public event – a principal investigator’s conference at the National Academies in 2012.

II. Principles for Innovation Policy

Questions 4, 5, and 6 of the RFI go directly to fundamentals of how innovation policies and national strategy should be managed within the government in light of the changing nature of innovation. CCIA suggests these guiding principles:

A. Dynamism

A national strategy must monitor and respond to change as a regular process that is incorporated into statistics collection, generation of reports, and ongoing dialog within the policy community. Innovation policies and national strategy should be innovative, not fixed for all times and technologies.

In stark contrast, a dominant ideology within the patent system has been to adapt by swallowing all forms of innovation (including organizational innovation) and confining them in a one-size-fits-all straightjacket. Worse, this rigid perspective is sometimes represented as being locked in to the WTO charter as a legal commitment that precludes tailoring the patent system to produce economically desirable results.

The need for dynamism is also illustrated by the new forms of IT-enabled asset-sharing such as Airbnb and Uber, which face opposition from locally regulated incumbents. Policy lock-in and capture by incumbents – the analog to Clayton Christensen’s “innovator’s dilemma” – is well known in Washington, although rarely acknowledged in formal policy development. Future innovators are simply not

represented in the political process, and this tends to favor past success over present and future innovation.

Academics and journalists help monitor change in an ad hoc manner, but the government is uniquely capable of collecting reliable statistics on a regular basis – and it must do a better job of this on innovation. The 2008 NSF Business R&D and Innovation Survey remains a one-off effort. The U.S. does not follow the OECD Oslo Manual on the measurement of innovation, and has allowed Europe to provide intellectual leadership at an international level. U.S. participation in the OECD Committee on Industry, Innovation and Entrepreneurship has been conspicuously weak.

The political climate in the U.S. may be intolerant of failure, but an effective national innovation strategy must be agile, responsive, and prepared to experiment and take risks without locking agencies into programs that do not produce results. DARPA remains the paradigmatic experimental program; DARPA benefits from its national security mission, but it, too, has suffered from political constraints that demand narrow focus on short-term results and lethal weapons. Most programs operate under some form of peer review, which may inhibit risk taking.

B. Coherence and Continuity

Innovation programs and agencies are not immune from the siloed thinking that afflicts government agencies and results in stovepiping, inertia, and uncoordinated overlap. This sometimes results from a narrow mandate imposed by Congress, but it can be debilitating and wasteful when the nature of innovation demands multidisciplinary approaches, coordination among multiple players, pooling of resources, and need for scaling and commercialization.

Insular agency cultures are a major obstacle to coherent government-wide policy. For example, the PTO, long the centerpiece of innovation policy in the U.S., secured an unusual degree of autonomy for its operations when it became fee-funded in 1990, yet it remained charged with providing broad policy advice to the President. Although the agency launched an Office of Chief Economist in 2010, it has avoided addressing the hard problems that have resulted in deep political divisions and perpetual battle over patent reform. Instead, it has engaged in self-promoting or self-justifying studies and promulgated a fee structure that perpetuates the patent quality

problem through a billion-dollar front-end subsidy of patent applications. This subsidy can only be made up from renewal fees, creating a magnet for low-quality applications as well as an incentive for the office to grant patents since its processing costs can only be recovered from issued patents.

At present there is little guidance for how patents resulting from federally funded research are to be licensed. Although universities may not assign such patents, they sell exclusive licenses to whoever is willing to pay. This feeds opportunities for patent assertion entities (PAEs) who are not commercializing the technology. While this may arguably be an option for privately funded research, it is inappropriate for publicly funded research and induces universities to oppose patent reform in the interest of maximizing revenue.

Another problem has been uncovered by OECD/G20 work on profit-shifting for tax purposes, an area we and others are likely to be looking at more in the future. By moving ownership of intangible assets among affiliates abroad, companies can eliminate or minimize tax on licensing income, and when this is done using patents that have benefited from the research and experimentation tax credit, this can amount to an effective subsidy greater than 100%. This disadvantages small firms who must pay full taxes because they lack foreign affiliates to which profits can be shifted.

In the absence of an institutionalized home outside the White House, innovation policy has lacked the continuity needed for sustained role in national economic policy. See Brian Kahin & Christopher T. Hill, *United States: The Need for Continuity* (Issues in Science & Technology, Spring 2010), available at <http://www.ccianet.org/wp-content/uploads/library/Kahin-Hill.pdf>. This is unfortunate because a “national strategy” implies a responsive mix of policies – at least if they form a coherent whole. Without continuity and coherence, innovation strategy may be seen as a partisan or special interest agenda that is ad hoc and opportunistic rather than strategic in the long-term interests of the nation. If a home for innovation policy is not feasible in Commerce, consideration should be given to expanding the SciSIP program to include outreach components as a resource for agencies, states, Congress, and the public. It might also be possible to encourage interagency coordination through an innovation policy subcommittee of the NSTC Technology Committee (there is already an interagency working group on

“science of science policy” under the Social, Behavioral and Economic Research Subcommittee of NSTC Committee on Science).

C. Accountability

Accountability, like continuity, is essential to ensure that innovation policy and strategy is seen as a credible, evidence-backed function of the U.S. Government. Beneficiaries of federal policy and programs should be obligated to report and disclose how a subsidy or award worked, or not, in practice – with the understanding that failure in innovation is expected and acceptable but should be a source of learning.

It is easy to focus on benefits accrued by the intended beneficiary. The burden imposed on others (especially small users) in terms of risk, uncertainty, and costs is often not easy to acknowledge and harder still to quantify, especially when there are long lag times. For example, PAEs do not file suit until an average of eight years after the patent issues. Conversely, the high costs of enforcing patents, especially for startups facing deep-pocketed defendants, may virtually eliminate their deterrent effects and their value to small patent holders. Accounting for the real costs and practical effects is essential to developing realistic policy for patents, just as cost-benefit analysis should inform other kinds of intervention.

Accountability also demands taking consistent, principled positions that can be defended internationally. However, trade agreements are negotiated in secret and then approved with limited scrutiny and amendment. Invariably some interests, typically those with the most at stake, are closer to the negotiations than others. This leads to the kind of favoritism associated with “industrial policy” – which is amplified when simplistic one-size-fits-all policies are locked into treaties as “international obligations.” The WTO provision on technological nondiscrimination noted above is a consequence of favoring the interests of the pharmaceutical industry without attention to the long-term economic consequences for high tech. This problem has become especially critical in the context of international debate over state espionage, where the U.S. has justified espionage in the context of trade negotiations – as long as it is not in the interests of individual companies.

III. Response to Questions

While most of CCIA's recommendations are summarized in Question 1, answers to Questions 4, 6, 8, 17, 21 and 22 follow:

Question #1

In its next Strategy for American Innovation, the Administration should:

1. Adopt guidelines for maintaining Internet freedom;
2. Address threats to the openness of the Internet;
3. Ensure balanced refinement of copyright law and trade agreements that fully reflect domestic law and policy;
4. Reform the patent system, the misuse of which has become a major threat to U.S. innovation;
5. Continue efforts for immigration reform;
6. Increase basic research, especially high stakes research that may result in breakthrough innovations; and
7. Enhance the domestic labor pool through education, especially STEM education.

A. Trade

Innovation, particularly in the increasingly robust and intertwined commercial Internet ecosystem, requires trade policy that supports an open global Internet. Indeed, the development of the Internet has led to a revolution in the way we conduct international commerce and trade. Unfortunately, digital barriers persist, limiting innovation in Internet communications and services.

U.S. trade policy constructed an enduring legacy of free trade beginning with the General Agreement on Tariffs and Trade (GATT) more than 60 years ago. Today, service industries employ 95 million of America's 110 million private-sector workers, and exporting service industries employ more people than work in factories, farms, and mines combined. This shift to services is increasingly true of other economies, yet discrimination against the services persists. Given the importance of the Internet to innovation and the international trade in services, there is a need to further encourage Internet-enabled trade.

With that in mind, U.S. innovation policy should promote the following trade principles:

1. Cross-border data flows

The modern networked economy, and international commerce generally, depends upon data flowing freely without impediment -- and this must not be undermined by other policies. Exceptions to the “free flow” of cross-border information should be narrowly tailored to legitimate ends.

2. Balanced intellectual property

U.S. policy should endeavor to strike the same intellectual property balance internationally as we have struck domestically. Therefore, important limitations and exceptions to IP protection that have allowed the Internet economy to thrive (such as fair use and the first-sale doctrine) should be as important to our trade negotiators as the protections themselves.

3. Full market access for digital products

U.S. trade agreements should include a strong e-commerce chapter that ensures that digital products, regardless of their classification, are not discriminated against merely because they are provided and consumed digitally.

4. Avoid forced localization

Trade agreements should oblige signatories not to take actions that affect the choices of commercial actors in physical provision of hardware, software, or services that might impact network performance, resiliency, security, and/or costs of deployment or operations. Many countries are tempted to require that certain types of hardware or software integral to the operation of the network be physically sited within their national boundaries. There are many reasons why these choices are made, but mandates of this kind generally frustrate efforts to ensure the best performance for the largest number of Internet users at the lowest cost, and there are better and more sustainable ways to encourage local investment in the ICT sector than through these kinds of mandates.

5. Reasonable liability rules regarding third-party activity

Unbounded liability rules constitute a major barrier to international Internet commerce and communications. Due to the extraordinary quantity of data transiting communications networks, these businesses could be extremely vulnerable to strict

liability for the misdeeds of users. Congress responded to this problem in 1996 with Section 230 of the Communications Decency Act, providing categorical immunity from liability for user misconduct, thus allowing Internet companies to combat undesirable or potentially illegal activity without fear of additional liability for editing user content. Section 230 states that “no provider or user of an interactive computer service shall be treated as the publisher of any information provided by another information content provider.”

Section 230 has been a boon to the Internet industry and directly paved the way for the exponential growth of the domestic U.S. Internet industry. Unfortunately, the same robust protections for intermediaries are not universal and this has directly hampered U.S. Internet companies overseas. *See* Ali Sternburg & Matt Schruers, *Modernizing Liability Rules to Promote Internet Trade*, CCIA Research Paper (Sept. 2013), *available at* <http://www.cciainet.org/wp-content/uploads/2013/09/CCIA-Liability-Rules-Paper.pdf>. Given the relative saturation of the U.S. market, U.S. Internet companies must focus on expanding beyond U.S. borders. In order to maintain the same robust pace of growth and innovation, national and international trade law must reflect the same principles that fostered growth in the U.S.

B. Copyright

The economic significance of balanced copyright to the U.S. economy cannot be understated. A 2011 economic study commissioned by CCIA concluded that industries depending upon fair use and related limitations to copyright generated revenue averaging \$4.6 trillion, contributed \$2.4 trillion in added value to the U.S. economy (roughly one-sixth of total U.S. current dollar GDP) and employed approximately 1 in 8 U.S. workers. *See* Thomas Rogers & Andrew Szamosszegi, *Fair Use in the U.S. Economy* at 26-27 (2011), *available at* <http://www.cciainet.org/wp-content/uploads/library/CCIA-FairUseintheUSEconomy-2011.pdf>

U.S. domestic innovation policy and international trade policy should therefore aim to ensure a proper balance in copyright law. The balance should provide proper protection for strategically important and constitutionally-rooted principles like fair use. A robust first-sale doctrine should guarantee that IP rights do not limit the movement of lawfully-purchased goods. Business certainty is needed for industries that may not

provide content but are nevertheless heavily regulated by copyright law. This certainty can be achieved through imposing rational limits on copyright's statutory damages system, strengthening the DMCA safe harbors for online services, deterring misuse of copyright, and reestablishing the customary corporate veil to copyright. Statutory damages are a significant and measurable deterrent to innovation; these chilling effects could be mitigated by reforming disproportionate statutory damages to provide greater predictability and re-examining whether statutory awards should be permitted to aggregate infinitely.

Copyright compliance has a great impact on early-stage investment, and, consequently, innovation as well as the economy. Interviews with hundreds of angel investors and venture capitalists found them to be overwhelmingly wary of new regulations and desiring an unambiguous copyright regime. In particular, increasing user or website liability would negatively affect innovation by driving early investors into other areas. A recent study found that such risks could have the effect of reducing the pool of interested angel investors by 81%, and that increased exposure for users would likely reduce the pool of interested angel investors by 48%. In general, 80% of investors polled reported being uncomfortable investing in business models in which the regulatory framework is ambiguous. See Matthew Le Merle *et al.*, *The Impact of U.S. Internet Copyright Regulations on Early-Stage Investment: A Quantitative Study* (Booz & Company 2011), available at <http://www.booz.com/media/file/BoozCo-Impact-US-Internet-Copyright-Regulations-Early-Stage-Investment.pdf>.

Changes in copyright law and policy that provide more certainty for intermediaries, such as the Second Circuit's decision in *Cartoon Network, LP v. CSC Holdings, Inc.* ("Cablevision"), positively impact venture capital investment in cloud computing. The *Cablevision* decision led to additional incremental investment in U.S. cloud computing firms that ranged from \$728 million to approximately \$1.3 billion over the two-and-a-half years after the decision, the approximate equivalent of \$2 to \$5 billion in traditional R&D investment; after *Cablevision*, the average quarterly investment in cloud computing in the United States increased by approximately 41 percent. See Josh Lerner, *The Impact of Copyright Policy Changes on Venture Capital Investment in Cloud Computing Companies* (Analysis Group 2011), available at

C. *Patents*

Strong patent rights are not appropriate for every type of innovation. For example, in an industry or field where developments are made incrementally with lots of small improvements, patents are problematic because a single patent on a small improvement can block anything that tries to build on that improvement. The tech industry (especially software) is a classic example of this type of field. With few exceptions, there are no giant leaps forward. Rather, a long series of small steps produce software improvements. The current patent system is a better fit for industries where each product stands on its own, like pharmaceutical. A new compound generally is not blocked by a patent for an old compound.

The Administration's 2013 *Patent Assertion and U.S. Innovation* report concludes by calling for improvement in three areas:

- clearer patents with a high standard of novelty and non-obviousness,
- reduced disparity of litigation costs between patent owners and technology users, and
- greater adaptability of the innovation system to challenges posed by new technologies and new business models.

We agree. While the White House and the House of Representatives have made some progress in addressing reform, more needs to be done. Beyond the reforms supported by the President and the House of Representatives, we suggest:

1. Integrate patents and other means of appropriating returns into a coherent innovation policy grounded in realistic assessment of costs, risks, and benefits.
2. Address the persistent quality problem by elevating the standard of obviousness from "person having ordinary skill" to peer review ("recognized skill"), and independently monitor allowance rates and evaluate causes (and consequences) of change.
3. Monitor and assess real benefits and costs of the patent system; require reporting of assignments, licenses, settlements, contractual demands for indemnification,

- and costs associated with global coverage and litigation; and require timely registration of assignments, licenses, notice/demand letters, litigation, and settlements.
4. In line with the WTO panel decision in *Canada - Pharmaceuticals (2000)*, clarify that TRIPS proscription of discrimination does not apply to rational differentiation. Confirm that economic outcomes should be the goal of the patent system, and that any discrimination should be measured in terms of outcomes.
 5. Provide expanded licensing guidelines for government-owned and government-funded inventions (prizes, grants, cooperative agreements, or contracts) to reflect economic considerations, including the contribution of public funding, the difference between combinatorial and discrete-product innovations, and the appropriateness of alternative means of achieving returns from innovation. Limit university participation in speculative/secondary markets by requiring meaningful steps toward commercialization within five years and requiring full reporting of licensing revenues.
 6. Broaden the Patent Public Advisory Commission beyond “user” and practitioner communities too predisposed to expanding the volume and scope of the system, and include economists and technology experts capable of evaluating the functioning and effectiveness of the system.
 7. Redesign the fee structure to eliminate the front-end subsidy (and internal incentive to allow marginal patents) except for small and micro entities as provided by Congress. Require owners of invalidated patents to reimburse fees paid by successful challengers (but allow patent owners an opportunity to abandon patents prior to administrative proceedings upon presentation of prior art or other invalidating evidence).

D. Internet Openness, Trust, and Freedom

Internet freedom is critical to vibrant communication and information exchange to foster innovation and help drive our economy. The U.S. Government should lead by example to ensure Internet freedom. This means fighting Internet censorship in all its forms and making sure Internet users can access content freely, Internet services and

other online businesses can reach customers, and that innovators do not need permission from Internet access providers.

Internet access connections are now part of our critical infrastructure for economic growth. Open, interconnected networks are essential for permissionless innovation and launching new businesses. The adoption of enforceable Open Internet rules under Title II by the FCC is important to existing U.S. businesses that might otherwise face commercial discrimination by duopoly network operators selling their own affiliated content, but also for the next generation of online innovators.

High quality broadband network infrastructure is critical for supporting innovation in the 21st century, but is characterized by minimal competition. Excessive rates and anticompetitive terms and conditions for business broadband (or special access) must be dealt with by the FCC. The FCC must legally safeguard open Internet access for all consumers, students, start-ups, small businesses and nonprofits. The federal government should encourage additional private build out of fiber access networks, and the repurposing and sharing of underutilized federal government spectrum.

To maintain both a platform for innovation and a key tool for Americans to reach all available resources on the Internet, the federal government should facilitate upgrades of physical digital network infrastructure by:

1. Pursuing spectrum policies that promote innovation using both licensed and unlicensed spectrum blocks, and repurposing or enabling sharing of underutilized federal government spectrum;
2. Advocating for cybersecurity legislation that will secure critical telecom network infrastructure from cyberattacks;
3. Adopting and enforcing strong new FCC open Internet rules that will ensure continued access to critical network infrastructure for market-based innovation without permission online; and
4. Adopting and enforcing policies that enable access competition with the dominant incumbent telecom networks, both landline and wireless, and preventing anticompetitive rates, terms and conditions for essential business broadband services.

E. Privacy, Surveillance and Internet governance

The government should also help support, or at least not undermine, the trust of Internet users with its policies on privacy, surveillance, security and Internet Governance by:

1. Encouraging Congress to update the Electronic Communications Privacy Act and pass the USA Freedom Act with measures to prevent bulk metadata collection;
2. Ensuring that government agencies from the State Department to USTR denounce government censorship;
3. Promoting multi-stakeholder Internet governance at global conferences;
4. Ensuring that any consideration of new regulations related to commercial “big” data use are crafted in collaboration with private sector stakeholders so they do not stifle innovation nor hinder legitimate business practices and responsible uses of big data; and
5. Promoting opportunities for industry self-regulation as to data management and protection, and supporting safe harbors for participating companies.

Question #4

Many policies can affect the ability of research-intensive companies to innovate and compete in the marketplace, but the impact of future policy choices on innovation is often not well understood in advance. For example, telecommunications spectrum policies that facilitate innovative business models may enable significant productivity growth in the mobile communications sector. Improved Federal capacity for analysis of such impacts would help inform policy development to support innovation.

Question #6

The nature of innovation is more complex than when some policies were enacted. For example, the patent system tends to be geared toward the needs of more traditional forms of innovation – such as a biotech company patenting a new drug. In the technology sector, innovation happens in more incremental steps and has numerous components that depend on interoperability. The iPhone, for example, has thousands of different patents, and one in six U.S. patents involve Smartphones, according to CCIA’s calculations based on numbers from patent aggregator RPX. *See Daniel O’Connor, One in Six Active U.S. Patents Pertain to the Smartphone*, Disruptive Competition Project,

Oct. 17, 2012, at <http://www.project-disco.org/intellectual-property/one-in-six-active-u-s-patents-pertain-to-the-smartphone/>. According to numbers from the National Science Foundation, 40 percent of patents issued fall under the ICT sector. Policies such as those for granting patents need to consider the nature of an industry and find ways to balance the patent system so that incumbents can no longer misuse patent law to block new innovation and new market entrants.

Question #8

Agencies lacking a traditional focus on research and development nonetheless pursue critical missions that could benefit from innovation. Given these agencies' more modest capacity to support research, development and other avenues to innovation, there is potentially underinvestment in science, technology and innovation to address key national problems such as education, workforce development and poverty alleviation.

Question #17

Over the past two decades, the cost of starting and scaling an IT-based company has plummeted due to a combination of cheap, scalable cloud computing, open source software, and other similar trends. Extending these or similar developments to more capital-intensive sectors, where costs remain a significant barrier, would yield significant benefits.

Question #21

Technology innovation has always been and will increasingly be collaborative and dependent on interoperability. The challenge will be to continue to allow new innovation to come to market by watching that incumbent companies are not using intellectual property or the standard setting process in anticompetitive ways. The FTC is investigating current problems of IP being used anti-competitively as part of its 6(b) study.

Question #22

Law or regulations to rein in abuse and misuse of the patent system will have large economic benefits both for the companies not having engineering and financial resources drained, and for the innovative contributions from start ups that are not put out of business by patent assertion entities. One prominent study estimated that PAEs cost the U.S. economy over \$29 billion a year. See James Bessen & Michael Meurer, *The*

Direct Costs from NPE Disputes (Boston Univ. Sch. of Law Working Paper No. 12-34 June 28, 2012), *available at* https://www.bu.edu/law/faculty/scholarship/workingpapers/documents/BessenJ_MeurerM062512rev062812.pdf. A recent study showed a strong link between increased PAE litigation and reduced venture capital investment. *See* Catherine Tucker, *The Effect of Patent Litigation and Patent Assertion Entities on Entrepreneurial Activity* (June 2014), *available at* <http://www.ccianet.org/wp-content/uploads/2014/06/Tucker-Report.pdf>.

Further, we have seen that when it comes to copyright, a more is better approach to enforcement can stifle legitimate innovation. Intellectual property law must be balanced to protect both existing and future innovators. A CCIA-commissioned economic study based on publicly available government data and WIPO methodology, cited *supra*, found that industries that depend on fair use and exemptions to copyright law make up one sixth of the GDP and employ one of every eight U.S. workers. The government must consult with all stakeholders — not just so-called IP-intensive industries — when developing copyright policies.

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In conclusion, CCIA urges OSTP and NEC to consider the innovation policy suggestions described herein.

Respectfully submitted,

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