

“Congress Needs to Act”
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American economic security is threatened in a way Congress has failed to recognize. Our biggest challenge is stemming the outflow of jobs, talent, technology and manufacturing. All four losses drain away national economic power. All result from the same cause: chronic under-financing of our innovation infrastructure. Although invisible, it is our nation’s greatest asset. Strengthening it can assure our prosperity and restore our technological leadership. We urgently need to increase invention and make new products that Americans and others will need, want and buy. To increase innovation, however, we must increase investment.

And it is needed immediately because we are already losing our international lead in technology and our global competitiveness. In a recent study, the United States came in dead last of the 40 top technology countries in the world in strengthening its innovation infrastructure over the last decade. Foreign inventive activity has surged to the point where filings in the United States Patent and Trademark Office by foreign entities now equal filings by Americans. Filings in the Chinese patent office by Chinese companies show exponential advances in twelve out of twelve top technologies.

Public finance for increased investment in innovation, however, is not available. It has been exhausted by the cost of two, concurrent and continuing wars and a decade of fiscal mismanagement, saddling us with a huge annual debt payments and recent annual budget deficits of many hundreds of billions of dollars, and this year of \$1.5 Trillion. In this recession when tax revenues are down, obtaining even a modest increase in public R&D funding will be difficult, if not impossible. Actually, the challenge will be to avoid cuts in government R&D funding. The Administration recently instructed all agencies except the Defense Department to plan for a 5% reduction. At best, agency budgets will be frozen. Anyway, private investment has always supported much R&D by research-based companies, universities, and other innovators. Only increased private finance, then, can fund the needed increase in research and development.

But how do we incentivize increased private investment in innovation? The answer is simple: strengthen the intellectual property systems – patents, trademarks, trade secrets, copyright, but especially patents. What we most need is faster, sounder patent grants, plus swifter, stronger, subtler court enforcement. After all, no one can be expected to invest without confidence in a return. Patents, and the protection of investment they afford, provide the only incentives strong enough to cause a big enough increase in private investment in innovation.

A primary engine of American recovery and resurgence therefore will have to be an improved patent system. Without that, both short-term recovery and long-term prosperity will be stunted. By “system”, I mean primarily the Patent and Trademark Office and the Federal courts, which, along with the International Trade Commission, afford the only mechanisms to enforce patent rights.

Using patents to spur both economic and technological advances is hardly a new idea. They have been a primary engine of economic growth and technological progress since 1790 when the First Congress passed the first Patent Act. Unlike today’s Congress, the founders knew patents promote national prosperity, economic growth,

and technological progress. Patents have promoted repeated surges of technological advance, the most recent in the information technology revolution of the 1990's. Notice that this was the last time our country had a balanced budget. And now, bio-tech shows promise of another surge.

Note, too, that if we strengthen the patent system, the job creation needed if our country is to rehire the 15 million unemployed workers, half from the recent recession, and add 13 million new jobs by 2018 to absorb a growing labor force will naturally follow. So will migrations of the technologically talented. If more R&D is done here, they will come here and stay, at least if we fix our broken visa system. Otherwise, foreign talent studying at our research universities will all return home. Our own leading technologists will also go elsewhere, just as is now happening with U.S. companies such as Intel and Applied Materials. Both will soon open large research laboratories headed by their top American researchers, not in California but in China.

A few commentators, despite all evidence, still assume the nation could afford a large increase in public R&D funding. Others assume that even though public revenue is unavailable, the needed R&D can be funded by company revenues. But that is not realistic. Most innovative companies are new and small. Many do not yet make profitable products. Some do not yet sell any products. Yet the majority of new technologies and 75% of new jobs are now being created by small, young, companies. Therefore, the firms with the least revenue to support their R&D are those most needing and deserving private investment. Biotech start-ups are only one example. Without it, many of them will die. With it, medical science, public health and national wealth will surge. Besides, 2/3 of the economic growth and 3/4 of the new jobs since WWII came from innovation, and technology-related jobs pay 2.5 time average salaries.

Well, what is wrong with the present patent system? First, and foremost: delay - health and welfare-diminishing, wealth-reducing, job-destroying, technology-impeding delay. In some technologies it now takes, at least, 4-6 years even to get a patent. The product life-cycle is often shorter than that. For all technologies the average wait is three years. That is two times longer than in 1990. Too long! And it is going up. Even worse, because nearly all applications must by law be published at 18 months, foreign competitors can pirate inventions for years before the patents issue, for until then patent owners have no rights against infringements whether produced here or imported. No wonder foreign competitors minutely monitor the PTO website! The story is told that thousands of Chinese engineers sit at computers reading U.S. patent applications rather than doing research in labs.

Why such extensive delay? Because for two decades the patent office has been grossly underfunded. And it is still losing ground. It operates entirely on user fees paid by applicants and patent owners -- fees that were set by Congress six years ago -- at levels that do not support necessary operations. The PTO lacks sufficient numbers of examiners, especially experienced examiners, and modern computer systems. Imagine, the government's own technology agency using decades-old computer technology! These are the principal reasons delays are so long.

The patent system is failing primarily because the patent office is failing. In a single, blunt word, the patent office has become dysfunctional. Applications have tripled, and the PTO simply cannot keep up. Over 735,000 applications sit unread in a warehouse in Alexandria, Virginia. Note that the warehoused applications equate to almost two years worth of filings. Although some 490,000 applications are being examined, their progress is far too slow. And every year another 460,000 more are filed. Of the 1.2 million applications currently awaiting final disposition, only about

350,000 complete the examination process each year. So the backlog, already intolerable, is actually growing by 110,000 applications per year. It is now four times the backlog of 1990.

There are too few examiners – mostly young engineers and scientists -- and too few with experience. Nearly one third of the examiner workforce has been at the PTO for less than 3 years. But it takes at least 3 years for new examiners to become both competent and efficient. Faulty decisions by inexperienced examiners, like delay itself, harm the system and therefore innovation; such examiners allow patent claims they should reject, blocking innovation, and reject ones they should allow, causing further unnecessary delays and costs for Board appeals. And the lack of quality assurance undermines the presumption of patent validity provided by law and also the credibility of patents in the eyes of the media, academia and the Congress.

The trial courts too are hobbled. Most lack sufficient numbers of judges to expeditiously enforce good patents and invalidate bad ones. Almost 100 judicial vacancies remain unfilled, the highest vacancy rate in the history of the country. Most of these have gone unfilled for many, many months, and some for years. That means the courts are normally 12% understaffed. And almost 100 additional district and circuit judgeships are desperately needed but have yet to be authorized by Congress despite repeated requests by the Judiciary for two decades. So, the courts struggle with almost 200 too few judges because of two decades of Congressional neglect, just like the Congressional neglect of the patent office.

The result of course is long litigation delays that diminish the value of patents and add uncertainty that impedes invention and economic growth. Most patent infringement cases now take 3-5 years to verdict, with each appeal adding at least another year. Like patent examinations, litigations are simply too slow both for the pace of technological advances and for domestic and global markets. Delay must be cut at least in half, and soon. Because of delays caused by chronic underfunding of the Judiciary, innovation incentives are shrinking just when the nation needs them to be growing.

The gears of our patent system seem seized up. Ironically, Congressional inaction is discouraging private action. Obviously we need to strengthen and speed up both examinations and litigations, but only public funds can jump start the process. How so? Although PTO operations should remain financed by user fees, it needs an emergency transfusion of public money to overcome its warehouse backlog of 735,000 and equip it to keep up with the annual influx of 460,000 new applications. It needs thousands of additional examiners and salary increases to retain experienced, quality examiners. Most of all, it needs new computer systems and new space to house the existing workforce, as well as new hires. At present, two thousand of the six thousand examiners work at home, as the PTO lacks sufficient workspace for one-third of its workforce. Thus, even if Congress finally raises the fees, which it should, resolving the current crisis still requires a large infusion of public money. That is because much of the fee revenue arrives only years after the patents issue as maintenance fees. But money is needed now. Deferral will have corrosive consequences that cannot be undone. Therefore, I suggest the following emergency steps:

First, a one-time capital investment in the PTO of one billion dollars. It could be spent over the next several fiscal years, but it should be authorized and appropriated promptly. That should be enough to replace the IT systems, which the Director correctly calls “moribund,” and secure work space for the examiners. It probably could also pay for new hires to beat down the backlog.

Second, the Congress must guarantee by law that the PTO can spend an amount equal to the user fees paid by patent applicants and holders. Between 1992 and 2010, Congress diverted \$759 million in fees paid to the PTO by patent holders and applicants and directed them instead to other governmental activity. In this year alone, Congress will siphon off an estimated \$230 million in PTO user-paid fees. Essentially, PTO users have unwittingly been paying an additional tax subsidizing governmental expenditures that have nothing to do with PTO functions. Permanently ending this Congressional practice, called “fee diversion”, is a necessary precondition to reviving the PTO. If Congress continues spending user fees for other purposes, raising fee levels will have little effect.

But there is a Catch-22. If public R&D funding is already “maxed out” and other public funding otherwise already committed, then how could Congress find a billion dollars for the PTO? Well, when Congress wishes, it freely spends many billions of dollars, such as the \$700 billion it provided to Wall St. I suggest only \$1 billion, once. Just \$1 billion, spread over several years, but provided soon.

Is my suggestion realistic? Yes, if Congress were to follow proper priorities. This public investment is absolutely necessary to our country’s short-term and long-term prosperity.

Well, would such capital investment fix everything that is wrong with the patent office? Maybe not everything, but certainly all the big problems. And, without it, other reforms will surely not suffice. Although other remedial steps are also necessary, most have already been started, at least on a pilot basis, by the new Director, David Kappos. But without an immediate, large, one-time dose of public funding, even his very sound leadership initiatives cannot produce the needed results and do so fast enough. In fact, despite his initiatives, the examiner corps is still shrinking, losing 500 examiners in the last several years. A net loss is again predicted for this year. So just when the patent office needs more examiners, it has fewer.

In his recent testimony before a House Appropriations Subcommittee, Director Kappos admitted that it will take many years to achieve timely examinations even if in the next two fiscal years Congress allows him to hire 1,000 new examiners per year. But since each year 500 leave, the total gain would only be 1,000, not 2,000. A much larger increase in examiners is needed to eliminate the backlog of 735,000 warehoused applications and assure timely examination of 460,000 new applications. My estimate is 3,000 additional examiners are needed if the PTO is to examine all incoming applications within one year.

What else? First, let the PTO open satellite offices in places like Detroit, and Houston, and hire unemployed engineers, patent agents and patent attorneys who are already experienced IP professionals. They can be productive immediately, unlike new graduates who need years of training. But again, Congressional authorization is probably needed. Under current law, most employees must work at the PTO campus in Alexandria, Virginia, or at home with regular reporting in person if living over 50 miles away.

Second, pay examiners better. Congress also controls the pay structure for examiners. But the gap between the examiner pay schedule and the General Schedule for non-technical civil servants is shrinking. Industry, I am sure, would willingly pay higher fees to enable the PTO to pay more competitive salaries to retain skilled examiners. Congress should raise these fees and pay levels.

What about ending the delays in court? In addition to promptly filling nearly 100 vacancies and Congress adding the nearly 100 judgeships long requested, what else could be done?

First, more frequent use of expert special masters to do claim construction and magistrate judges to police discovery would help. Second, discovery should be narrowed. If discovery were limited largely to evidence that can actually be used at trial, much delay as well as excess cost could be avoided. Staging discovery by issue also looks promising. But both require closer judicial supervision which in turn requires more magistrate and district judges.

The bottom line is this: unless Congress invests more in the America patent system, private investors will not. We must encourage investors to boost their investments in order to surge American R&D. The PTO and the courts both need more money, more space and more adjudicators. Congress must “prime the pump”. Only then can private investment take over. This is the only practical way to increase innovation and restore our nation’s competitive advantage. This strategy could restore us as the technology leader of the world, increase private and public revenues and stock values, raise our standard of living and create millions of new, high-paying jobs. With so clear and compelling a strategy, Congress need not hesitate to act.

But because members don’t understand that patents increase prosperity, they must first hear from you, from private sector leaders in law, business, media, and academia. The question is: Will you advocate these reforms to Congress?