

# LEADING CITIZENS: LEAD CONGRESS SO CONGRESS WILL LEAD YOUR COUNTRY

**By Paul R. Michel, Chief Judge (Ret.) United States Court of Appeals  
for the Federal Circuit, June 2010**

Today, American economic security is threatened in a way Congress has failed to recognize. Securing a stable inflow of petroleum is no longer our biggest resource challenge. Rather, it is stemming the outflow of jobs, talent, technology and manufacture of advanced products. All four losses continue to drain away national economic power. All result from the same cause: chronic under-financing of our innovation infrastructure. Although invisible, it is our greatest national 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.

Increased investment in innovation 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 dead last of the 40 top technology countries in the world in strengthening its innovation infrastructure over the last decade. American inventive activity has slowed to the point that filings in the United States Patent and Trademark Office by foreign entities now exceed filings by Americans. Filings in the Chinese patent office by Chinese companies show exponential advances in twelve out of twelve top technologies.

Increased public finance for increased investment in innovation, however, will be hard to find. Public finance has been nearly exhausted by the cost of two, concurrent and continuing wars and a decade of fiscal mismanagement, saddling us with a huge

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annual debt payments and annual budget deficits of hundreds of billions of dollars. In this recession when tax revenues are down, obtaining even a modest increase in public R&D funding will be politically difficult, if not impossible. Actually, the challenge will be to avoid cuts in government R&D funding. In any event, private investment has always supported much R&D by research-based companies 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 system – patents, trademarks, trade secrets, copyright, but especially patents. What we most need is faster, sounder patent grants, plus faster, stronger 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 that can cause a big enough increase in private investment in research-based companies.

The 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, provide 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. The founders well understood the causal connection between patents and national prosperity, economic growth, and technological progress. Patents continued to promote repeated surges of technological advance throughout the 1800's. Before and during World War I, another huge surge took place. Yet another wave occurred after World War II and 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.

Note, too, that if we strengthen the patent system, the job creation needed if our country is to rehire the unemployed and 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. If not, 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 of which will soon open large new research laboratories in China headed by their top American researchers.

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. The most innovative companies are small. Many do not yet make profitable products. Some do not yet sell any products. Yet most new technologies and new jobs are 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 and public health will surge. So how does our society convince venture capitalists and other investors to finance more R&D for innovative firms? The answer is clear: the promise of profits through patents that are issued promptly but properly and that are adjudicated quickly and vigorously, but carefully.

Well, what is wrong with the present patent system? First, and foremost: delay - - excessive, health and welfare-diminishing, wealth-reducing, job-destroying, technology-impeding delay. In some technologies it now takes, on average, 4-6 years

even to get a patent. The product life-cycle is often shorter than that. For all technologies the average is three years. Two or three-times too long! Even worse, because most applications must by law be published at 18 months, others, including 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 horders of Chinese engineer sit at computer 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 set by Congress, but 25 years ago at levels that no longer finance necessary operations. It lacks both enough 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. Over 750,000 applications sit unread in a warehouse in Alexandria, Virginia, many for years. Although some 400,000 are under examination, their progress is far too slow. And every year almost 400,000 more are filed. But only about 300,000 complete the examination process each year, so the backlog, already intolerable, is actually growing, and this despite a recession-caused slow-down in 2009 filings. Note that the warehoused applications equate to two years worth of filings.

Most examiners leave after only three years for better pay and working conditions in private industry. In addition, they get back the freedom to reside wherever

they wish, and elsewhere than Metropolitan D.C. cost of living is lower. For such reasons, the average experience level of the 6,000 examiners has fallen to only about three years. But it takes that long 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, impeding innovation, and reject ones they should allow, further increasing unnecessary delays and costs. And the lack of quality assurance undermines the presumption of patent validity provided by law and the credibility of patents in the eyes of the media, academia and the Congress.

The trial courts too are hobbled. Most lack the judge power to expeditiously enforce good patents and invalidate bad ones. Almost 100 judicial vacancies remain unfilled today, the highest vacancy rate in the history of the country. Most of these have gone unfilled for many, many months, and many 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 reach final judgment, with appeals adding at least another year. Like patent examinations, litigations are simply too slow both for domestic markets and today's global competition. 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 we need them to be growing.

The gears of our patent system seem seized up. Ironically, Congressional inaction discourages private investment. Obviously we need to strengthen and speed 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 and equip it to keep up with the annual influx of new applications. It needs thousand of additional examiners and salary increases to retain experienced, quality examiners. Most of all, it needs new computer systems and new space to house an expanded workforce. Thus, even if Congress finally raises the fees, which it should but may not, resolving the current crisis still requires a large infusion of public money. Much of the fee revenue arrives only years after the patents issue. And it is needed soon. Deferral will have corrosive consequences that cannot be undone. Therefore, I suggest an immediate, 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.”

In addition, the Congress must guarantee by law that the PTO can spend an amount equal to all the user fees. Since 1992, Congress deployed a total of over 900 million dollars in patent fees for other uses. In 2006, it stopped. Then, this fiscal year Congress, once again, will not allow the office to spend at a level equal to the fees it expects to collect; an estimated \$150-250 million will be spent on other government activities. 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. In addition, is it fair that fees

provided by private applicants and patent owners to support PTO operations instead finance other government activities that Congress prefers?

If public R&D funding is already “maxed out” and other public funding otherwise already committed, how could Congress find a billion dollars for the PTO? Well, when Congress wishes, it freely spends many billions of dollars per day. I only suggest one billion, once. Just one billion, spread over several years, but provided soon.

Is my suggestion unrealistic? Maybe, but not if our nation were to follow proper priorities. This public investment is absolutely necessary to our country’s short-term and long-term prosperity.

Well, would such a transfusion as a capital investment fix everything that is wrong with the patent office? Maybe not everything, but without it, other reforms will surely not suffice. Although other steps are also necessary, most have already been started 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 declining, losing 500 examiners last year when hiring was frozen because of fee shortfalls in the worst recession in several decades. 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 years to achieve timely examinations even if in the next two fiscal years Congress allows him to hire 1,000 new examiners per year, which it may not. Regardless, each year 500 will leave, so the total gain would be 1,000, not 2,000. Anyway, a larger increase in examiners is needed to eliminate the backlog of 750,000 warehoused applications and assure timely examination of new applications.

What else? 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, express 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. Congress also controls the pay structure for examiners. The pay levels of the General Schedule for non-technical civil servants should not approach that of the skilled scientists and engineers hired by the patent office. They should be far better compensated. But the gap between the examiner pay schedule and the General Schedule is shrinking. Industry, I am sure, would willingly pay higher fees to enable the PTO to pay more competitive salaries to skilled examiners. Congress should raise these pay levels or empower and fund the PTO to do so.

If necessary, Congress should also clarify the Director's authority to give earlier examination to patent applications in certain vital new technologies such as sustainable, clean energy and health sciences and to individual applications for pioneering inventions. A first-in, first-examined system simply makes no sense when many applications have little if any commercial value and often lack technological merit as well. The office could prioritize applications based on its classification system. In addition, applicants should be allowed to voluntarily defer examination when they need more time to assess their invention's commercial potential.

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 Congress do? In the Court of Appeals for the Federal Circuit, we addressed delay by leveraging the capacity of our twelve active judges with more law clerks. We



persuaded Congress to add a fourth law clerk for each active judge. In addition, most of our law clerks are technically trained. So, I suggest that Congress fund an additional law clerk, technically-trained, for every trial judge who takes on a significant docket of patent infringement cases. The cost would be modest, likely under 15 million dollars.

Well, can anything be done within existing resources? Yes. Judges in less-congested districts could take over patent infringement cases in congested districts. Since 96% settle or resolve on summary judgments, such cases could be handled inexpensively right from the volunteer judge's own courthouse. Where necessary, video-conferencing can be used. Where motions or settlement don't resolve the case, trial can be held in the district in which the case is pending. Thus, the plaintiff's choice of its preferred forum is honored, assuming it is the proper and convenient venue. Either the motions judge or a judge from the original district can preside.

More frequent use of expert special masters and magistrate judges would also help. In addition, 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 also looks promising. But both require closer judicial supervision which in turn requires more judges. In the long run, modification of discovery standards in the Federal Rules of Civil Procedure may also be needed. But much could be done even without rules changes. For example, under current law frivolous law suits can be deterred by fee-shifting and dispositions can be accelerated by mandating mediation by expert mediators. Only three of 94 district courts do so presently.

Such techniques can enable both the patent office and the courts to perform faster and better. Increasing resources and granting new, flexible authorities, however, requires affirmative Congressional action. Unless Congress invests in the America patent system, private investors will not. Yet, we must encourage investors to boost

their investments in order to surge American R&D. Both the PTO and the courts need more money and more adjudicators. So 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. It 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 a strategy, the Congress need not hesitate to act. But because they don’t understand the cause and effect between patents and innovation, they must first hear from you, from private sector leaders in business, media, academia and law. The question is: Will you help?