

Remarks of

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&
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U.S. PATENT & TRADEMARK OFFICE**

at the

**CONGRESSIONAL ECONOMIC LEADERSHIP
INSTITUTE**

**WASHINGTON, D.C.
APRIL 5, 2000**

INTRODUCTION

Thank you, Congressman Ehlers. It's quite an honor to be introduced by the first research physicist ever elected to Congress. I majored in chemistry as an undergrad, so I'm pleased to see that there's hope for those of us in the political arena who started out as science geeks.

Let me also thank John Weinfurter, President of the Congressional Economic Leadership Institute, for extending this invitation. This is a very useful -- and timely -- opportunity for me to address some of the issues of concern to your membership.

I also want to acknowledge my predecessor as USPTO Commissioner, Bruce Lehman, who is here today. Bruce is no stranger to these halls, having worked on the Judiciary Committee for many years. As many of you know, Bruce did more than anyone to put the USPTO on the map, and he also did a great deal to focus more attention on intellectual property (IP) issues among policy makers. So, I think we all owe Bruce a debt of gratitude.

When I started off in patent law about twenty five years ago, it was quite a backwater. Now it's red-hot. In fact, when I picked up the *Washington Post* this morning, not only were there stories in the Business and Technology sections about patents, but we even made it into the Sports section. (It was a story about a sailmaking company in Nevada -- which has outfitted a number of America's Cup race teams -- that lost a legal battle over one of its patents.)

As someone recently remarked to me, you knew the world had changed when Harvard started offering patent law.

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Today I'd like to talk about the U.S. patent system - and some hot topics in the media concerning business method and genomic patents.

Before I do that, though, I thought I would tell you a little bit about some recent developments at the U.S. Patent and Trademark Office. It will come as no surprise to you that there's a lot to talk about.

OVERVIEW OF USPTO

This is a very busy -- and exciting -- time for us at the USPTO. A lot is happening on the IP front and in technology that will revolutionize the work we do and the services we provide to our customers.

Today, industries that produce and manage knowledge have replaced capital and machinery-intensive industries as the primary source of U.S. economic growth. In fact, innovation generated half of our economic growth in recent years, and nearly fifty percent of U.S. exports now depend on some form of IP protection.

Our workload at the USPTO -- measured by the number of patent and trademark applications we receive -- is an excellent barometer of this changing landscape.

Last year, we received 270,000 patent applications and granted 161,000 patents -- that's a 25% increase in applications over 2 years.

During the same period, we received 290,000 Trademark applications and registered 104,000 classes -- a one-year increase of 27%.

This pace is continuing this year. In fact, so far Trademarks are up 35%. And we're likely to surpass the 300,000 mark for patent and trademark applications.

To help manage this increase in our workload, we hired just over 800 new patent examiners last year -- that's on top of the 700 we hired in 1998. Our total patent examiner Corps now stands at about 3,200 -- a far cry from our early days when Thomas Jefferson did most of the patent examination.

Our employees are highly skilled. In fact, almost 400 have Ph.D.s. And they face the rigors of a tough productivity and quality measurement system. Their output is measured every two weeks, and at least 8 out of every 10 substantially exceed their goal requirements.

I'm quite proud of our workforce, and I regret that they get unfair criticism in the press.

In addition to hiring more examiners, we're also tackling the increase in our workload by implementing state-of-the-art technology -- to allow customers to secure our products and services over the Internet.

For example, we are the first national intellectual property office in the world to offer an electronic filing system for trademarks. The system -- known as TEAS -- allows trademark customers to submit applications over the Internet and use credit cards to pay filing fees -- 24 hours a day, 7 days a week, 365 days a year -- without ever leaving the comfort of their home or office. *Yahoo Magazine* has cited TEAS as one of the most useful sites on the Internet.

We already receive about 12% of our Trademark applications electronically. And we will build upon TEAS later this year by establishing a system that routes electronic trademark applications directly to an e-commerce focused law office in our agency. This will mean that these applications will receive prompt examination, often much faster than their paper counterparts.

On the patent side, we're also piloting electronic patent filing to some of our largest patent filers. We plan to offer electronic filing to all of our customers by early next year.

We also have on-line systems in place that allow our customers to check on the status of their patents and trademark applications or trademark registration.

These efforts, I'm pleased to say, are paying off. For example, one user of the TEAS system emailed us to say that it was the "nicest interaction" she ever had with the federal government. Another customer said that we had "renewed [his] confidence in the government bureaucracy."

I think many of you in this room know that comments like these are the exception, rather than the rule, in government today.

Last year, we recorded the largest increases in customer satisfaction in the history of our annual customer surveys. Satisfaction with the quality of our patent searches increased 8 percentage points, resulting in a 20 percentage point increase in search quality in the last three years.

And a recent study by the National Partnership for Reinventing Government, in cooperation with OPM, also had good things to say. It ranked our Office #1 in the federal government in six different areas it surveyed, including having service goals aimed at meeting customer expectations.

Some other recent developments we're proud of include making more than two million patents issued since 1976 and all registered trademarks and trademark applications freely available on the Internet. We also have established an Office of Independent Inventor Programs and launched websites devoted specifically to independent inventors and school children. These website have been very warmly received as well.

We're also moving closer to our relocation to modern, consolidated facilities. In fact, the Alexandria City Council recently voted 5-2 in favor of our move to the Carlyle site near Old Town.

I know that in the past there was some controversy up here about our move, so let me just say a few words about it.

Since the late 1960s, our offices have been located in Crystal City, where we occupy about 2 million square feet of space in 18 separate buildings, ranging in age from 10 to 30 years. Some of our buildings are more than a mile away from each other.

This dispersment of our operations -- in out-dated facilities -- hampers our ability to function as efficiently as we need to. There's also a safety issue, because one-third of our space is not sprinklered.

So, given the fact that the new lease in Alexandria would save us about \$72 million over 20 years, it doesn't make sense to remain where we are. And we hope we can count on your continued support for our move.

POLICY / INTERNATIONAL ISSUES

On the policy front, we also have quite a bit on our plate.

We're currently negotiating a treaty -- the Patent Law Treaty -- at the World Intellectual Property Organization in Geneva that will address most of the procedural requirements associated with the examination of patent applications and the grant of patents. The PLT is scheduled for conclusion next month, and we're hopeful that it will allow applicants to develop worldwide protection with greater confidence and at reduced costs. We're also working with our Trilateral Partners at the European and Japanese Patent Offices to make simplification of the Patent Cooperation Treaty a major priority.

Outside of patents, we've recently implemented the Trademark Law Treaty as part of our ongoing efforts to simplify and harmonize the requirements for acquiring and maintaining a trademark registration abroad. And we're hammering out new international legal standards to govern the intersection of the Internet and trademarks -- domain names.

We also recently convened a conference of distinguished Constitutional and intellectual property scholars to look at the issues generated by last summer's *Florida Pre-Paid* decisions, in which the Supreme Court ruled that States can exercise their sovereign immunity under the Eleventh Amendment to avoid suit in federal court for patent, trademark, and copyright infringements. Those decisions raise a number of troubling issues, so we hope to come up with ideas on a fair and equitable system that preserves the ability of state institutions to participate fully in the intellectual property system.

Another outstanding issue for many of you up here is legal protection for databases that are not protected under copyright law. As many of you know, there are two bills -- one in the Judiciary Committee (H.R. 354) and one in the Commerce Committee (H.R. 1858). Both adopt a "misappropriation" approach, although H.R. 354 offers stronger protection and is similar to legislation which passed the House twice in 1998. All of us need to work together to craft appropriate legislation on this issue -- legislation that will ensure that database producers are not victims of free-riding by people who take their work and reintroduce it as a competing product -- and legislation that protects reasonable, free uses of data by the education, scientific, research, and commercial sectors.

PATENT REFORM AND PBO

Of course, the most significant thing on our plate right now is something we're indebted to many of you in this room for: implementation of the "American Inventors Protection Act of 1999," which was signed into law last November.

Subject to about five years of sometimes acrimonious debate, this landmark legislation contains the most sweeping reforms in U.S. patent law in half a century. It also restructures our agency into a performance-based organization (PBO), placing us at the vanguard of government reinvention.

Taken together, these measures will go a long way in helping our agency -- and the U.S. intellectual property system -- meet the challenges of the 21st century.

Right now we're publishing rulemaking packages on the major patent law changes of the bill, such as pre-grant publication of patents, patent term adjustment, and expanded third party (inter partes) reexam. Upon initial publication, these rules are available for 60 days of public comment.

And last Wednesday, we officially became the second -- and largest -- PBO in the entire federal government.

It's an important milestone in our agency's history, as we break free from "one-size-fits-all" regulations that get in the way of doing our job -- and give government a bad name.

I sum it up by saying we're moving from **red tape** to **results**. And I want to thank all of you up here who have entrusted us with your confidence. You won't be disappointed.

FEES

Unfortunately, however, I'm afraid there's a cloud hanging over us as we start this new chapter in our agency's history. There's one key feature that we still lack as a PBO. And that's control over all of our fee revenue.

Since 1991, our entire budget has been derived solely from patent and trademark user fees. We receive no general taxpayer funds. But a sizeable portion of our fees are still annually withheld in the appropriations process and diverted to other government programs.

This year we'll be denied access to more than \$200 million of our patent and trademark fees -- about 20% of our total revenue base.

Under current projections, that number will increase to \$368 million in FY 2001 -- that's 32% of our total 2001 fee collections -- \$481 million in FY 2002 and \$594 million in FY 2003.

What this means is that -- increasingly -- we're having to rely on current collections to pay for prior-year unprocessed work. This is a very troubling scenario given our increasing workload.

It will clearly impact how we do our job. This year, for example, we'll be limited to attrition hiring for patent examiners -- about 360 predominantly in the computer and biotech areas. It also delays our putting all the patents -- going back to the first one in 1790 -- up on our Website.

We're working to solve this problem, and I'm very pleased that Secretary Daley is very interested in this effort. It's still going to be an uphill battle, though, so we'd appreciate your interest and engagement on this issue.

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That should give you a pretty good idea of where we stand at our Office right now. So, let me turn and talk about the patent system itself and some recent controversies over patents being applied to emerging technologies -- particularly in the area of genomics, and software, business methods, and Internet-related inventions.

SUBJECT MATTER EXPANSION

Our Founding Fathers, in their wisdom, insisted on including in the Constitution the express intellectual property protections of Article 1, Section 8. They are seemingly simple words – “Congress shall have power... to promote the progress of science and the useful arts by securing for limited times to authors and inventors the exclusive right to their respective writings and discoveries.” Yet, they’ve done more to shape our Nation’s economic growth than almost any other provision in the Constitution.

One of the foundations of our patent system is that it is technology-neutral. It aims to apply the same norms to all inventions in all technologies. While some are critical of this system, the uniformity and facileness of the patenting standards of novelty, obviousness, and utility have allowed the patent system to respond to whole new sciences and entire new industries, without you all up here having to constantly retool the law. This natural evolution of the patent system is no small achievement.

The subject matter that is eligible for patent protection is determined by Congress and the Courts. And as technology expands, the USPTO has been receptive to a continued expansion of subject matter eligibility, where appropriate, and in keeping with the basic principles of our patent system. We are committed to ensuring that our practices and policies promote the innovation and dissemination of new technologies.

Believe it or not, one hundred years ago more than a third of all our patent applications dealt with bicycle technology. Today, we routinely examine patent applications in vastly different emerging technologies, such as Internet business methods, gene fragments, and bio-informatics.

And, as an indication of the scope of technological innovation, consider this. The one millionth U.S. patent was issued back in 1911 for inventing a new tire for the automobile. It took us more than 80 years to reach the first millionth patent milestone.

Last December, we awarded the six millionth patent to 3 Com Corporation for a commercialized software method that is helping revolutionize hand-held computing. And the time it took us to go from five million patents to six million patents was only eight years.

So, we clearly stand at an exciting time in the world of innovation. In fact, some are even calling it the “Golden Age of Invention.”

GENOMICS

One of the emerging technologies in this Golden Age is genomics.

One principal source of guidance on the patenting of biotech inventions is the Supreme Court's landmark 1980 *Chakrabarty* decision, which said that anything under the sun, made by the hand of man, is patentable.

Accordingly, a product of nature transformed by humans, can be patented if it is new, useful, and non-obvious. Products produced from raw materials, giving these materials new forms, qualities, properties, or combinations, are patentable, provided that they are supported by either a well-established utility or by an asserted utility that is specific, substantial, and credible, according to another Supreme Court opinion in *Brenner v. Manson*. An example of this would be a gene fragment that has a diagnostic use for a particular disease.

The decision in *Chakrabarty* paved the way for a variety of U.S. patents involving living materials, including genetic materials and genetically engineered plants and animals.

Now, first, let me be clear: under current law, raw genetic information is not patentable. However, genomic inventions are patentable, so long as they comply with the statutory standards. Contrary to many people's impression, including some on Wall Street, the joint statement of President Clinton and Prime Minister Blair on March 14th -- dealing with making the raw data of the human DNA sequence freely available -- did not address patentability.

The key issue for determining whether a genomic invention is patentable often comes down to the question of utility. That is why we continue to take steps to ensure that patent applications in this area are meticulously scrutinized for an adequate written description, sufficiency of the disclosure, and enabled utilities, in accordance with the standards set forth by our reviewing courts.

In fact, in order to ensure the highest standards of utility, we recently proposed new "Utility Guidelines" that require patent applicants to explicitly identify, unless already well-established, the specific, substantial and credible utility for all inventions, including genes and gene fragments, such as expressed sequence tags (ESTs).

In other words, we're raising the bar to ensure that patent applicants demonstrate a "real world" utility. And frankly, we believe that this may lead to the denial of hundreds of patent applications that failed to identify genuine utility in the gene sequence being claimed.

I am pleased with the feedback we've been receiving on these new guidelines. For example, Dr. Francis Collins, head of the Human Genome Project, recently stated that "[the USPTO] deserves credit for moving toward a stronger requirement for utility." Former Director of the National Institutes of Health (NIH), Harold Varmus, has also been supportive of our action.

The analysis of whether an invention meets the utility requirement is explained in our “Revised Interim Utility Guidelines,” which are available on our Website at www.uspto.gov.

RESPONDING TO CRITICS

Unfortunately, a lot of the debate over genomic patents has missed some key points.

For one, issues of patentability and access are often confused.

The fear is that patents on gene fragments, such as ESTs, will form an intricate licensing web that will prevent researchers from using the discoveries to make other health-related advances.

I agree that issues of access -- which come down to licensing -- are very important. But the marketplace has traditionally enabled the system to regulate itself through practices such as cross licensing. And in the event that someone uses their patent portfolios uncompetitively, there are methods for dealing with that, such as the Justice Department’s anti-trust guidelines.

Secondly, many of the arguments of our critics resemble those voiced thirty to forty years ago when polymer chemistry was an emerging technology. At that time, people argued that if broad generic claims were granted on the building blocks of basic polymers, it would devastate the industry. Clearly, that didn’t happen.

Another good example is the patent issued about twenty years ago to Stanford University and the University of California-Berkeley for the technique invented by Cohen and Boyer to manipulate recombinant DNA. Although the invention was broadly patented, they chose to have a very modest licensing program for commercial institutions, and they allowed researchers at other academic institutions to use it for free. As a result, the biotech industry continued to grow and prosper into the powerhouse it is today.

And today’s *Washington Post* had an article about Monsanto’s successful effort to detail the entire genetic map of the rice plant. This data, which will help make a number of improvements in crops, will be shared with researchers with few if any restrictions.

Lastly, patents on products extracted from the human body aren’t a new thing. We have issued hundreds of patents to products extracted from the human body for pharmaceutical or diagnostic use, including clot-busting proteins to treat stroke, cancer antigens for detection of cancer, and antibodies to treat infection. Human Growth Hormone was also originally isolated from human pituitary glands. And we’ve also issued patents to vitamins derived from the human body.

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Many of the issues that have raised about genomic inventions have also been raised about software-implemented business methods.

BUSINESS METHODS

First of all, let me point out that the USPTO has been granting software patents for a quarter century -- about half the time there have even been programmable digital computers -- and business method patents for a good 15 years. The patenting of these technologies is evolutionary -- not revolutionary.

Last year the Court of Appeals for the Federal Circuit in the *State Street* decision did three very important things in this area.

First, they reaffirmed that software is indeed patentable. Second, they validated the USPTO software guidelines -- issued first in 1989 and then revised in 1996. And third, they rejected the "business method" exception in the law, stating that these inventions may be invalid for other grounds, such as lack of novelty, but not simply because they were improper subject matter under section 101.

State Street paved the way for applications directed to electronic commerce, business-related Internet applications, and other Internet-related technologies. But the number of business method applications is really quite small.

We received 2,600 applications in FY 1999 and issued 600 patents. Remember, that's out of more than 270,000 patent applications last year.

RESPONDING TO CRITICS

First, read the patent claims, don't just read the press releases. A lot of companies are touting their business method patents as being much broader than they actually are.

- I recently was reading a news article that I think summed this up. The author was saying that when he first read a patent, it sounded like it covered the manufacturing of air. On a second reading, going through the claims, he discovered that it just covered a form of breathing. But then, after further analysis, he learned that it was for breathing underwater and the patent was for the scuba process.
- So, remember, read the claims.

Second, many of the same arguments have also been made about software generally for quite some time.

- Back in 1994, Professor Pamela Samuelson of U.C.-Berkeley argued that patent protection of computer programs threatened to stifle innovation. In "A Manifesto Concerning the Legal Protection of Computer Programs," she and her co-authors indicated that we actually needed a new form of IP protection because software patents would destroy the software industry.

- It's now six years later -- a lifetime in the Internet world -- and I'd like to see anybody argue with a straight face that our IP laws have done anything to hinder the growth of the software industry.

Third, what we're seeing in business methods and Internet patents is very much a reflection of the natural evolution of invention.

- In earlier times, inventions and innovations occurred in garages and on workbenches. Today, a good deal of that takes place on computers.
- And, as I mentioned, we've been issuing business method patents for almost 20 years.
 - For example, we issued a patent in 1982 to Merrill Lynch on business method software which implemented their Cash Management Account (CMA) system, a major product of theirs at the time. Not only did we issue it, but that patent was subsequently upheld in Court 1983, the Court stating: "The Court finds that the '442 patent claims statutory subject matter because the claims allegedly teach a method of operation on a computer to effectuate a business activity. Accordingly, the patent passes the threshold requirement of Section 101.
 - We've also issued patents on methods of teaching since the mid-1800's. These include a patent issued in 1864 for a method of teaching penmanship.

Fourth, quality begins at home. For example, under what is known as Rule 56, each patent applicant is required to disclose the most material prior art of which the applicant is aware, under penalty of forfeiture of the patent. Too often, however, that doesn't happen. Therefore, we're currently discussing additional means to heighten this obligation.

Fifth, we are working tirelessly to make sure that our office has the skills and resources to properly examine business method filings.

- In the last two years, we hired over 500 new examiners in the Technology Center that examines software, computer, and business method applications.
- In Class 705 itself, we have tripled the number of examiners since 1997.
- They have access to more prior art than at any time in our history.
- Our in-house patent database and our commercial database provider provides access to more than 900 databases, including Westlaw, Lexis-Nexis, and Chemical Abstracts. From their desktop computers, patent examiners can also search the full text of over 2.5 million U.S. patents issued since 1971; images of all U.S. patent documents issued since 1790; English-language translations of 3.5 million Japanese patent abstracts; English-language translations of 2.2 million European patent

abstracts; IBM technical bulletins -- a key database in the software area; and over 5,200 non-patent literature journals.

- We have also instituted a number of quality assurance programs, expanded our traditional examiner training, brought in experts to lead specialized training seminars, and held hearings with the private sector -- here in Washington and in San Francisco - - on how to expand access to non-patent literature.
- And on that subject, while I have concerns with other parts of his proposal, I applaud Jeff Bezos' offer to help finance a database of business method prior art. In fact, I met with him today to discuss this, and I hope others will join him in this effort.

NEW ACTION PLAN

Quality management is a process of continuous improvement. Therefore, last week I announced a new action plan to ensure that patents granted to software- implemented business methods are of the highest quality and benefit the growing e-commerce industry.

We do a good job now, but we want to make sure we do an even better job in the future.

First, we will be working to forge an enhanced partnership with the E-commerce industry and other stakeholders to discuss business method issues and lay out an on-going process for addressing their concerns. This will be modeled after our biotechnology customer partnership, which has been very well-received. We also are planning to hold a roundtable this summer with all interested parties to facilitate this dialogue.

Second, with respect to our patent searches, we are now defining a mandatory search for all applications in Class 705. This search includes a classified U.S. patent document search and a text search of U.S. patent documents, foreign patent documents, and non-patent literature (NPL). In order to obtain public feedback on the prior art resources we use, we also will begin publishing in the Official Gazette and on our Website the current prior art search areas considered by our examiners. Based upon the feedback we receive, we'll then make every effort to expand our prior art collections and sources accordingly.

With respect to examination, all applications in Class 705 are now subject to a second review by another examiner, beyond the Primary Examiner signing the case. We think this second pair of eyes will be very helpful. We're also doubling the size of the end-product quality review sampling of Class 705 and introducing an in-process quality review -- both in the computer-implemented business method and the database areas.

Lastly, we're also enhancing the technical training for our examiners and revising the Examination Guidelines and training examples for computer-related inventions.

These initiatives are all part of our on-going commitment to ensure the highest quality patent search and examination.

CONCLUSION

As you can see, we have our work cut out for us at the USPTO. It's a busy time -- but a very exciting time for our Office and for the intellectual property community.

We are very energized about the changes that are underway, because we think they will allow us to achieve new heights of quality and efficiency.

I'm confident that whatever technology comes along, the U.S. Patent and Trademark Office will be ready -- especially if we have access to all of our fees -- with the resources and proven know-how, to ensure that innovative creations become enduring global industries.

I encourage you to keep up to date with all of these developments by logging on to our Website and checking out a new feature -- our monthly on-line newsletter called ***PTO Today***. I think you'll find it a valuable resource.

So, take a look. But be sure to go to **www.uspto.gov** -- not "dot com" -- because even the USPTO has been the victim of cybersquatting.

Thank you all very much. I'd be happy to take any questions.