MANUFACTURING & TECHNOLOGY NEWS

COVERING INNOVATION, GLOBALIZATION AND INDUSTRIAL COMPETITIVENESS

PUBLISHERS & PRODUCERS, P.O. BOX 36, ANNANDALE, VA 22003
PHONE: 703-750-2664 FAX: 703-750-0064 URL: WWW.MANUFACTURINGNEWS.COM

Friday, June 29, 2007 Volume 14, No. 12

Patent 'Reform' Is Anything But

BY PAT CHOATE

Ironically, Congress is now threatening China with harsh remedies if it does not quickly stiffen its patent protections, even as Congress marks up legislation that will dramatically weaken U.S. patent protections. This bill is the Patent Reform Act of 2007.

This schizophrenic policy is being driven by group of "Big Tech" transnational corporations that repeatedly infringe the patents of others, get sued, lose in court and are then forced to pay billions of dollars in penalties. Now, in response, they are financing an expensive lobbying, propaganda and legal campaign to weaken U.S. patent laws by passing this Patent "Reform" Act. They cleverly call themselves The Coalition for Patent Fairness (CPF); included are large transnational corporations such as Adobe, Microsoft, Cisco, Intel, eBay, Lenovo, Dell and Oracle.

During the period 1993-2005, four of the CPF companies paid out more than $3.5 billion in patent settlements. In the same period, their combined revenues were $1.4 trillion, making their patent settlements only about one-quarter of one percent of their revenues. Now, they wish to reduce even those costs, not by changing their obviously unfair, and often illegal, business practices, but by persuading Congress, and also the Supreme Court, to weaken U.S. patent protections.

These corporations have convinced many members of Congress and many editorial writers that the U.S. patent system is badly broken and that it requires a major legislative

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China Creates A Massive Foreign Investment Fund

BY RICHARD McCORMACK

China is creating a new $200-billion to $300-billion "sovereign wealth fund" to diversify its foreign holdings away from U.S.-dollar denominated debt securities and to make large-scale equity investments in companies overseas. The money will come from the more than $1.2 trillion the country currently holds in reserves, with at least another $400 billion expected to be added to that stockpile this year. China's reserves are said to be growing by about $10 billion per week. By 2010, China could be sitting on $3 trillion in foreign assets. The shift of wealth to China and U.S. indebtedness are growing in unison — and at an accelerating rate.

China has made its first investment from the fund: a $3-billion

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Stevens Institute of Tech. Creates A 'Modern' Research University

Technology transfer from universities is no longer providing the United States with a competitive advantage and a new model must be introduced in order for the country to remain on the leading edge of innovation, according to Hal Raveche, president of Stevens Institute of Technology in Hoboken, N.J. Economic growth must be fueled by high-tech "disruptive" technologies developed by a new generation of scientists and engineers who understand how to commercialize technologies. "A new learning environment can be established — academic entrepreneurship — to help sustain an innovation economy," says Raveche.

Two seminal acts have occurred in the history of the United

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More Than 20 Million Single-Person Firms

The number of "Lone Wolf" businesses — those that are run by one person, the owner and no employees — increased by 4.4 percent in 2005 to 20.4 million, according to the Census Bureau. A daily average of 2,356 people went into business for themselves in 2005, with a total of 860,000 new firms created outside of the typical business culture of bosses and employees. Businesses without a payroll had receipts of $951 billion in 2005 and made up approximately 78 percent of the nation's 26 million companies. Nonemployer firms can range from home-based businesses to corner stores or construction contractors. Among the fastest-growing industries are Web search portals (41.2 percent), Internet service providers (16.6 percent), nail salons (18 percent), electronic shopping and mail-order houses (12 percent), recreational vehicle dealers (12.1 percent) and landscaping services (11.1 percent).

The District of Columbia led the nation in the growth of these small businesses with a 9.6 percent increase between 2004 and 2005, followed by Nevada at 7.7 percent, Florida with a 7.6 percent growth rate, Georgia at 7.6 percent and Utah, 7.2 percent. Los Angeles County, Calif., had 799,108 nonemployer businesses, with Cook County, Ill., second at 380,457. Miami-Dade, Fla., followed at 296,456. The Census Bureau report is located at http://www.census.gov/epcd/nonemployer/view/covmeth.htm.

QUOTABLE...

"The Agenda for Shared Prosperity will offer alternatives to the failed conservative economic policies that assume that the best thing government can do is enrich the wealthy. We challenge the pervasive argument that Americans must rely solely on their own efforts. EPI's Jared Bernstein has coined a phrase for these policies: 'You're on Your Own,' or YOYO economics. YOYO economics holds that the way to solve the economic challenges we face — from Social Security to health care to globalization to inequality — is a tax cut, a private health savings account or retirement account, or further government cutbacks. For most of the past quarter century, these conservative economic policies failed to lift living standards. Since 1980, inequality has risen to heights not seen since before the Great Depression. An America that grew together is now growing apart."

— The Economic Policy Institute's Agenda for Shared Prosperity

GAO Describes Federal Programs Aimed At Manufacturing

The Government Accountability Office (GAO) has identified all government programs that could possibly be helping U.S. manufacturers. It identified 254 federal programs that provide services available to manufacturing companies, but of that number only five were targeted at small manufacturing companies and 15 programs targeted all manufacturers regardless of their size.

"Over $35 million was provided from fiscal years 2004 to 2006 by seven of the 20 programs that had funding data on the services they provided to small businesses engaged in manufacturing," says the 124-page report. "The number of small manufacturing firms that received services from these seven programs ranged from about 8,000 in 2004 to over 9,000 in 2006."

The five programs aimed directly at assisting small manufacturing companies provide help in improving their manufacturing processes. Only one program offers financial services. There are 127 programs throughout the government that assist businesses regardless of their industry. "Together these 127 programs devoted an average of $90 billion each year from 2004 to 2006 to provide services to about 1.6 million small businesses, including manufacturers," says the GAO. "Small businesses engaged in manufacturing also may obtain general business, export and financial services from an additional 107 federal programs designed to support all business regardless of their size or type."

The five federal programs that specifically support small manufacturers include:

- The Outreach to Small and Very Small Plants run by the Department of Agriculture's Food Safety and Inspection Service, which regulates manufacturers of meat, poultry and egg products;
- MilTech, which is administered by the Department of Defense's TechLink Program and the Montana Manufacturing Extension Partnership Center. The program provides companies with engineering, manufacturing and business development assistance to help accelerate the transition of new technology to U.S. warfighters;
- The Defense Small Business and Readiness Resources Program (DSTARR), which is administered by the Navy and provides assessments to small manufacturers' on their operational processes and develops continuous improvement plans;
- The Manufacturing Technical Assistance Production Program administered by the Air Force provides assistance to enhance the capabilities of small manufacturers developing high quality products to the Air Force; and
- The Technology Insertion, Demonstration and Evaluation (TIDE) program also run by the Air Force. This federally funded R&D center at the Carnegie Mellon University helps small defense manufacturers adopt commercially available software and information technology.

Other programs that assist small manufacturers include the Manufacturing Extension Partnership at NIST, the Trade Adjustment Assistance for Firms program run by the Commerce Department's Economic Development Administration; the Textiles and Apparel Program run by the International Trade Administration; the Manufacturing Technology, Next Generation Manufacturing Technology Initiative and the Best Manufacturing Practices programs run by the DOD; the Industrial Technologies Program by the Energy Department; The Research Program for the Manufacturing Sector run by the Food and Drug Administration; and the Dream It. Do It. campaign partially funded by the Department of Labor.

The report lists the 254 programs that could be of use to manufacturers. It is located at http://www.gao.gov/new.items/d07714.pdf.

Europeans Fall Behind U.S. In R&D Intensity

Research and development intensity in Europe is stagnating, posing a "major threat to the European knowledge-based economy [by creating] a structural growth handicap," says the European Commission. The 27 member countries of the European Union allocated 1.84 percent of GDP to R&D in 2005, the latest year for data. In the U.S., R&D spending accounted for 2.6 percent of GDP, and in Japan, it was 3.1 percent. Europe's R&D intensity was down from the previous year and has been slowing since 2000.

China is also rapidly catching up, says the EU in its annual "Key Figures of Science, Technology and Innovation" report. R&D in China accounts for 1.3 percent of GDP, but spending on research is growing at about 10 percent year. At that rate, "China will be spending the same share of GDP on R&D as the EU in 2010!" exclaims the report. By then, China is expecting to be devoting 2.2 percent of its GDP to R&D. The EU has a goal of 3 percent of GDP dedicated to R&D.

There is a "diminishing weight of Europe in the multi-polar world of science and technology," the EU concludes. "The EU is at a crossroad, where only decisive policy actions will ensure that the route towards increased long-term economic growth and prosperity is the one that is followed."

International companies are not investing in European R&D as much as they are in the United States and China. "The most worrying conclusion of the key figures is that Europe is becoming a less attractive place to carry out research," says the EU. "Between 1997 and 2002, R&D expenditures by EU companies in the United States increased much faster than R&D expenditures by U.S. firms in the EU (54 percent compared to 38 percent). The net imbalance in favor of the U.S. increased five-fold between 1997 and 2002, from about $300 million euro in 1997 to almost 2 billion euro in 2002. Additionally, U.S. investment has been growing at a much greater rate in areas outside the EU, about 8 percent per year in the EU and 25 percent per year in China."

The impacts are beginning to be seen in Europe's labor productivity growth rate, which has fallen below that of the United States for the first time since World War II. "This probably reflects an under-performance in the creation, diffusion and utilization of new knowledge over recent years," says the EU.

R&D in Europe is hampered by the fact that only 55 percent of funding is provided by the private sector, as compared to 64 percent in the United States, 67 percent in China and 75 percent in Japan and South Korea. Part of this is due to the smaller size of Europe's high-tech industry. But if the continent is going to be successful, then its businesses "need to invest in knowledge now," says EU Science Research Commissioner Janez Potocnik. "And governments need to put in place the appropriate measures to help them do so."

Europe's research universities are also not performing well. Not a single European university was ranked in the top 25 universities in the world with the highest number of scientific paper citations, a key measure of scientific output. All 25 were U.S.-based universities. In the group of 76 universities with the highest citation scores, only eight (11 percent) were in the EU, while 67 (88 percent) were in the Untied States.

The report is located at http://ec.europa.eu/invest-in-research/pdf/kf_2007_prepub_en.pdf.

Senators Seek Increased Funds For Defense Manufacturing

Fifteen members of the U.S. Senate have asked the chairman and the ranking minority member of the Senate Appropriations defense subcommittee to fund three new programs aimed at improving the manufacturing industrial base of the United States.

In a letter to Sen. Dan Inouye (D-Hawaii), chairman of the defense appropriations subcommittee and its ranking member, Ted Stevens (R-Alaska), the 15 senators request $30 million in a defense-wide R&D program to establish an "Industrial Base Innovation Fund." Such a fund would support the Defense Department's "ability to address specific shortfalls in the defense industrial base to meet short-term surge manufacturing requirements," they write. "The surge production requirements of current operations have stressed the industrial base and lead to intolerable wait times for the delivery of some much needed materiel to the battlefield."

The industrial base fund would be executed through a coordinated effort between the Joint Defense Manufacturing Technology Panel and the Deputy Under Secretary of Defense for Industrial Policy "to ensure that investments are made to develop manufacturing processes and technologies to support both long-term and short-term needs of the department," according to the report language to the National Defense Authorization Act for Fiscal Year 2008 (S-1547).

An Industrial Base Innovation Fund was first proposed in 2004 by Suzanne Patrick, then Deputy Under Secretary of Defense for Industrial Policy, but it used the word "investment" rather than innovation in its title. At the time, Patrick stated that the Department of Defense was not able to quickly inject new technologies or production techniques into weapons systems. Patrick proposed a $100-million program, but it proved to be unpalatable to the Republican controlled Congress, said program managers after Patrick left her post in early 2006.

In it latest authorization for DOD, the Senate Armed Service Committee said funds "should be used to begin the development of advanced manufacturing technologies that can reduce the time required to produce high demand items during surges in military operations."

The group of 15 senators has requested $10 million for a new defense-wide R&D program for the High Performance Manufacturing Technology Initiative. This would advance manufacturing technologies that support the defense industrial

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Stevens...

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States with regard to innovation driving the economy: the first was the creation of the Patent and Trademark Office in 1790; and the second was the 1980 passage of the Bayh-Dole Act, which enabled universities to license patents and collect royalties on research funded by the federal government.

But the growth in the number of patents and the royalties universities collect is stagnating. The number of high-tech initial public offerings in the United States has plunged from 170 in 2000 to only 35 in 2006. Japan is generating more high-tech IPOs than America.

"We need a new type of research university," says Raveche. "To sustain an innovation economy we need engineering and science students who graduate with the ability to grow and launch companies. The attributes to do that must be nurtured through academic entrepreneurship."

This is the only way for the United States to maintain growth because most countries are committed to catching up by doing what the United States was good at: creating university research centers, tech transfer offices, business incubators, science parks and by providing tax incentives for production and R&D. These well-known techniques "are all easily duplicated by any country and they put you in the investment economy," says Raveche. "They do not put you in the innovation economy."

Raveche has spent the last decade shaping the Stevens Institute of Technology into a new kind of university, encouraging students and faculty to assume the characteristics of entrepreneurs with vision, daring and the willingness to take risks to commercialize ideas and products.

He sat down with *Manufacturing & Technology News* Editor Richard McCormack while in Washington, D.C., and discussed his vision for research universities' role in America's economic future.

Question: How does the "modern research university" that you're promoting differ from the traditional research university?

Raveche: Today, universities have two enterprises, teaching and research. They rarely overlap. Left out are the undergraduates who don't learn how to innovate. They learn their courses, but they don't learn how to innovate.

The old model is universities do research. Some of it gets patented and trademarked and some of it is licensed outside. The research universities are very happy with the old model because they're generating $1.4 billion to $1.5 billion in royalties. What you read in the media are the big hits on patents at Stanford, Columbia or MIT. But the knowledge of the marketplace does not come back into the university. It's over the transom. That's what they mean by tech transfer. You transfer technology out of the university, but the learning that could come from commercializing that technology is missing.

Since the beginning of universities, there are two core values: teaching and research. We add a third: creative enterprise. We want our faculty and students to publish in A-level journals with their peers, but we want them take risks and to try something radical and to not be afraid of failure. If it works, okay. If it doesn't work, that's fine, too. This orientation flavors the research at the university. It flavors the patents.

Then we develop prototypes with external experts who know how to make prototypes. Generally they come in for equity and rarely as a consultant. They want a piece of the opportunity.

Then we bring in experts — and sometimes these are consultants — to write a business plan. When you go to venture capitalists with a new idea, they don't ask you about your technology because they assume it's right, otherwise you'll be laughed at. They ask: How big is the market? How are you going to penetrate it? How much capital do you need? What is your management team? What is your competition? How long can you survive before the next generation has to come out?

If you can't answer those questions as quickly as you can snap your finger, you're out, next guy; you're just gone.

Then we bring in high net-worth individuals as investors and we start companies with the students, faculty and investors. Later, we sell the companies. In the process, we gain knowledge of the marketplace.

Q: What's been the payoff?

Raveche: It's huge. You can see the difference in our students today as compared to 10 years ago. This enriches student learning because it gives them the knowledge of the marketplace. When students graduate they know how to grow the company that they're going to join or they know how they can launch their own company. If they go to graduate school, they take that outlook with them, and it's working.

Q: How hard was it to implement this model at Stevens?

Raveche: There was a lot of resistance initially from the faculty, but not any more. Today, when we interview faculty we say that unless you feel that this environment is exciting for you then it's not going to work out. More often than not, they're responding.

Q: It is starting to generate revenue for Stevens?

Raveche: Yes, we sold one company for $5 million, another for $17.5 million and we'll have a $50-million sale in the next two to three years. But we didn't do it for the money. We need the revenue, obviously, but we did it so that we would become better at understanding the connection between research and the marketplace, and it's paying off.

Q: Is it paying off for your students?

Raveche: You'd be amazed. The companies are responding. The average starting salary for our engineering student graduates is $59,040. The national average, is $52,444. Look at the range: $45,000 to $80,000. Our business students average $58,200. They are way ahead of the national average of $44,830

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Raveche...

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because companies interview our students and they know they come from a different environment. Companies are making strong offers because they don't want to lose them. Our students are getting signing bonuses. They're not huge — a couple of thousand dollars — but to a college graduate that's a big deal.

Q: Are any other universities pursuing this model?
Raveche: Slowly. I believe others will follow because they want to differentiate themselves from Harvard, MIT, etc.

Q: How about the old-line research universities?
Raveche: No. They're happy with things the way they are.

Q: How does the education of an undergraduate in mechanical engineering at Stevens differ from somebody at MIT?
Raveche: They start in their freshman year on a project with a business student and a science student. Every one of them has to do it and it lasts four years, culminating in a senior design. When it first started at Stevens these senior design projects were okay — with robots or building designs. Now the press comes because they see that these kids are innovators. The students want to get connected to investors. They understand the connection between their ideas and the market. We pay for the patents.

Q: Do most engineering students throughout the country learn how to patent technologies?
Raveche: They rarely have a clue. Even graduate students can be left out of the picture.

Q: Does every student at Stevens learn how to patent?
Raveche: I wouldn't say it's every kid, but it's a healthy percentage. Patenting is in the fabric of the community. We offer students with innovative ideas very generous stipends in the summer. The university gives them a room, and money for food and other necessities. Their obligation is to make a report on their developments at the end of the summer. There are many more demands for this than we can fill. If 100 schools did this, it would be tremendous. We'd be a different country.

Q: What's your next step with this?
Raveche: It's to build a co-lab where companies come and we jointly develop new products and services together. This would not be a fee-for-service, but equity right from the beginning. It's a big facility. It's not an incubator. It's R&D and business formation. It is the preparation of the workforce that is going to develop disruptive products and processes. If we don't do that, it's a slow death otherwise. If you have a product that is really advanced, people will pay the differential price. They will buy it. Someone may copy it, but your challenge is to come out with the next generation.

Q: Do you have some success stories?
Raveche: One that was launched by students two years ago with no faculty involvement is called SPOC Inc. When you have back pain, you go to the physician and he has you make some movements, but the trouble is muscles work in functional groups so it's hard to find the one muscle that may be responsible for the pain. So then you have X-rays and get an MRI and you could have back surgery when you didn't even need it. What the students have developed is a device that uses safe electric shock to make one muscle move and the physician uses it to locate the pain. We've been on Good Morning America, ABC, CBS. We're undergoing clinical trials now at NYU Medical Center. It's in phase one. It's going to lower the cost of medical care and it's all undergraduates who are doing it.

Another is called InStream Media, which is based on intelligence work — stegonography — for the military, looking at digital images that are embedded with voice, video and data. The commercial application is for non-invasive advertising. If you're watching a movie or a TV program and you see a car, an appliance, a suit or a tie and you want to buy it, then without interrupting you can find out who makes the product by going to your laptop, your wireless device or cell phone. It's going like hotcakes. Investors are lining up.

Q: Are American-born students getting engaged in this?
Raveche: Not at the graduate level. At the undergraduate level, we're seeing a renaissance.

Q: Why haven't American students gotten involved in the graduate level?
Raveche: Because they think it's dull and it takes too long. It's like a marathon. They don't see the upside.

Q: Is it a matter of their not having the money to pursue graduate work?
Raveche: That's one factor. If you had real good fellowships that allowed them to afford a decent apartment and it was not

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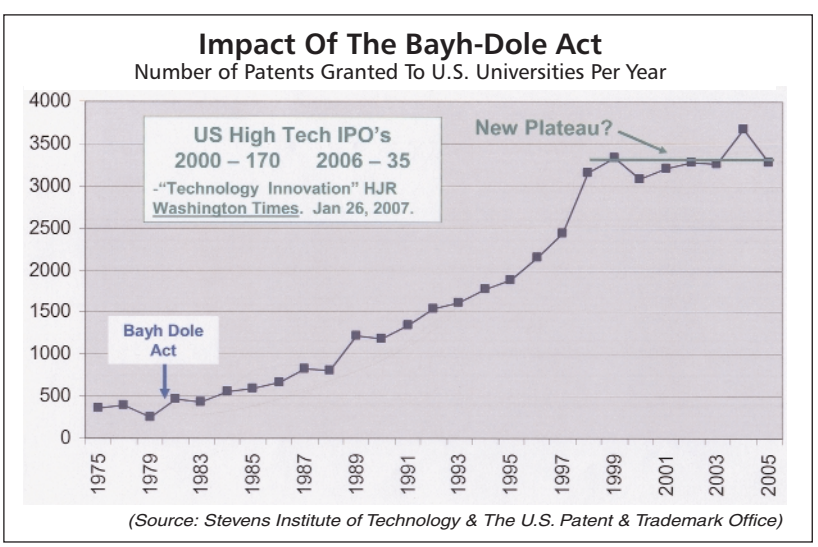

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overhaul. Supposedly, they say, the U.S. is in the midst of a "litigation crisis" where responsible corporations (CPF members) are being penalized by unworthy lawsuits. And, also supposedly, the United States Patent and Trademark Office (USPTO) is issuing massive numbers of unworthy patents that are being used in lawsuits against innovative companies (again, CPF members).

The "litigation crisis" and "unworthy patents" allegations simply do not hold up under examination.

The real facts of the so called litigation crisis are that for the past two decades the number of patent lawsuits commenced annually has been about 1.5 percent of all patents granted. In 2006, it was 1.47 percent. This is business as usual. Most patent lawsuits, moreover, settle before trial. In 1979, some 79 percent of patent cases settled before trial, while in 2004 almost 86 percent did. Matters are actually improving.

Also, the U.S. has few patent trials. For instance, in 2001 only 76 patent lawsuits were tried and only 102 went to trial in 2006. By no measure can 102 patent trials be considered a national litigation crisis. The annual report of *Federal Judicial Caseload Statistics*, which is on the Internet, provides the factual antidote to false claims of a litigation crisis (www.uscourts.gov/caseload2006/contents.html).

As to the massive numbers of "unworthy patents" argument, the real-world test is how many patents are challenged and the outcome of those challenges. Between 1981 and 2006 the USPTO issued more than 3.1 million patents. In that period, 8,600 were challenged at the Patent Office through *inter partes* and *ex parte* reexaminations. The number challenged amounts to less than three-tenths of one percent. Of those challenged, about 74 percent resulted in claims narrowed or cancelled. In addition, almost 60 percent of the relatively few patents challenged in a court trial are sustained.

My point is that the USPTO's work is certainly not perfect, but the Patent Office is also not pouring out a stream of bad patents.

If there are no patent "litigation crisis" and no patent "quality crisis," what is the real purpose of the Patent Reform Act of 2007 legislation before Congress?

A main goal is to legislate changes that will reduce penalties paid by infringers. Under existing law, a patent holder who is infringed upon is entitled to damages adequate to compensate for infringement, but in no event less than a reasonable royalty. The courts now consider a list of 15 factors in that calculation, including apportioning the part of the realizable profit created by the infringed invention versus other factors such as the manufacturing process, promotion, sales or other patents owned by the infringer.

Under this bill, however, Congress mandates that the court "ensure that a reasonable royalty is applied only to the economic value properly attributable to the patent's special contribution over the prior art" while only allowing the consideration of the other 14 factors. The bill goes on to require that the court subtract from the analysis "the economic value properly attributable to the prior art, and other features or improvements, whether or not patented that contribute economic value to the infringing product or service." Think of this as a big finger on the scales of justice that favors the infringer.

Often, the infringed component is only one of dozens of parts and contributions that make up the product, but that component may be the very thing that makes the product sell.

JBL infringed Bose's patented port tube technology, for instance, which gives Bose speakers their distinctive clarity. Bose's technology vastly improved the sound of the JBL speakers and drove JBL's sales. Bose sued and won. JBL wanted the royalty determination based on the small value of a cheaply made, plastic port tube. The federal court, however, determined that Bose's technology is what drove JBL's sales and set the damages on the value of the entire speaker system. If the damages were apportioned only to the cost of making the port tube, Bose would have received a tiny fraction of what its invention was worth. If JBL were allowed to subtract the value of all prior art in the damage calculation, which this legislation would allow, Bose would likely have gotten almost zero.

Cutting the damages paid by infringers is the goal of the many serial infringers supporting this provision.

Chief Judge Paul R. Michel of the U.S. Court of Appeals for the Federal Circuit advised Congress in a letter dated June 7, 2007, that the current law on apportionment is stable, works well and is understood by litigators and judges, and that the new proposal would be a radical change that would cause great chaos in the legal system. He noted that this change would require a massive damage trial in every case and a new kind of costly macroeconomic analysis. "Resulting additional court delays would be severe," he wrote, "as would additional attorneys' fees and costs." I think that we can mark him down as opposed.

One other pernicious result is this "primary factor" apportionment provision would actually encourage more infringement. Rather than negotiate with a patent owner and pay for use of an innovation, many infringers would simply go ahead and use it, pay nothing and, if caught and proceeded against, then pay a small royalty payment eventually set by a federal judge.

If Congress enacts this provision, it is sanctioning the "taking" of a patent owner's property and drastically reducing the price, if anything, an infringer must pay. Think of it as "self-licensing" someone else's patent. During the life of a patent, copyright or trademark, there is no difference between real property and intellectual property. A patent belongs to someone. Often it has great value. The owners should decide how it is used and the terms of that use, not the infringers.

A second goal of the proposed legislation is to force the USPTO to publish on the Internet all patent applications 18-months after the date they are filed. Since most patent applications now take on average 31 months to process, the Big Tech corporations that are sponsoring this legislation would get an advanced peek at an applicant's secrets more than a year before the inventor has patent protection, that is, if the patent is even granted, which for half of all applications, it is not. If an infringer took those secrets to China or India or

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anywhere where patent protection is lax, as many would, the inventor's only recourse would be to go to those countries and file a lawsuit. Few small companies, universities and inventors can afford this.

Foreign pirates find this mandatory publication provision particularly useful. For China, South Korea and many other nations, the USPTO's computer in Arlington, Va., is their primary source of R&D. Many foreign corporations and governments fill a room with computers, engineers and fast Internet connections and then task them with finding new technologies in unprotected U.S. patent applications. The U.S. isn't the only country with this problem; the Japanese Patent Office reports their computers get 17,000 hits per day from China and 55,000 hits per day from South Korea.

When Congress first enacted this 18-month publication requirement in 1999 it also created a loophole. Inventors can opt-out of having their applications published if they agree not to file for any foreign patents. About half of all applications from small businesses, universities and independent inventors select to opt-out. The proposed bill would eliminate this opt-out choice.

The Big Tech corporations also want Congress to change the long-standing practice of the U.S. Patent Office of granting a patent to the first-person-to-invent to the practice used in Europe, Japan, China and elsewhere where the patent goes to the first-person-to-file the patent application.

A first-to-file system strongly favors big corporations, who have the resources to track every aspect of an invention and file boxes and boxes of materials to support their claims, over small businesses, independent inventors and universities, who do not.

Equally important, this change of systems would create chaos at the USPTO and greatly contribute to the slowing of U.S. innovation. The USPTO would have to create numerous new forms and procedures and retrain its thousands of patent examiners and administrative people, even as it works down a backlog of 750,000 applications. All inventors, companies, patent lawyers and federal judges in the U.S. would be forced to learn this new system, its procedures and rules.

The turmoil created by this shift in the already beleaguered USPTO would guarantee a logjam there — one far greater than the passport backlog fiasco now underway at the State Department.

Incongruously, this legislation also proposes to solve America's supposed patent "litigation crisis" by creating a new forum for more litigation. This proposed "post grant" opposition process provides an infringer a low-cost means to challenge the very patent it is infringing and allows it to do so over the entire-20 year life of the patent at a lower burden of proof than required in a federal court.

Europe has the very system that Congress is being asked to copy. It is a litigation heaven for the patent bar. The annual European Patent Office (EPO) challenge rate was 5.4 percent of granted patents in 2005. The combination of all USPTO *ex parte* and *inter partes* challenges, all interference cases, plus all patent lawsuits commenced calculated as per the number of patents granted produces a comparable U.S. challenge rate of 1.8 percent. The EOP challenge rate is three times that of the United States and that does not count any patent lawsuits in Europe.

Japan dropped this system in 2004 because it created too many lawsuits. Of the many bad ideas in this legislation, this post grant litigation process is probably the worst.

The principal victims of these and other Patent Reform Act of 2007 proposals will be small entity inventors — small businesses, individual inventors, universities and non-profit research organizations. Their patents are often the greatest, if not only, assets they hold. Most often, they need ownership of an unchallenged patent in order to get financing to actually develop it. And, when their patent secrets are stolen and used by larger infringers, they are generally unable to finance a lawsuit, particularly if the infringer operates outside the United States.

> *"Now is the time for Congress to strengthen U.S. patent protections rather than weaken them."*

Yet, it is small entity inventors who file almost 30 percent of all U.S.-origin patent applications and receive 31 percent of all patents granted. Unlike the Big Tech companies, most of these innovators keep their R&D and production in the U.S. They are vital to America's future. But they are fragile. Special consideration of their situation and needs is in the nation's best interest.

Fortunately, many U.S. groups and organizations oppose the Patent Reform Act of 2007. Included are the National Association of Manufacturers, the U.S. Business and Industrial Council, more than 450 venture capital firms, the Big Ten universities, plus dozens of other organizations. The Department of Commerce and the USPTO have written Congress that they do not support eliminating the 18-month opt-out rule, changing to a first-to-file system, altering the apportionment provision or creating a new litigation forum. Unfortunately, all this opposition has mattered little so far and this dangerous legislation is still moving forth in the House and Senate Judiciary Committees.

Each Member of Congress needs to closely examine the Patent Reform Act of 2007 for it will deeply affect every state, every community and every congressional district. We face a historic economic challenge in the global economy. Now is the time for Congress to strengthen U.S. patent protections rather than weaken them.

— Pat Choate is the author of "Hot Property, The Stealing of Ideas in the Age of Globalization" (Knopf 2005) and several studies on intellectual property issues. He is completing a book on globalization that will be published in Spring 2008. He can be reached via e-mail at manufacturingpolicyproject@gmail.com.

U.S. Leads In Wind Installations

The United States had the world's fastest growing wind market last year, according to the Department of Energy in its first annual assessment of the industry. It was a record year in 2006 for the installation of wind turbines greater than 50 kilowatts in size, increasing by 27 percent in the United States, or by a total of 2,454 megawatts. The additional capacity is enough to power all of the homes in the city of Philadelphia. Total investment value of the new U.S. capacity was more than $3.7 billion.

Worldwide, an additional 15,016 megawatts of wind capacity were installed in 2006, with Germany taking second place just behind the U.S. with 2,233 megawatts, followed by India with 1,840 megawatts, Spain with 1,587 megawatts, China with 1,334 megawatts, France with 810 megawatts, and Canada with 776 megawatts. There is now a total cumulative capacity installed globally of 74,246 megawatts.

The United States ranks in third place worldwide with cumulative capacity installed behind first-place Germany with 20,652 megawatts installed and Spain with 11,614 megawatts of installed wind capacity. The U.S. has 11,575 megawatts of installed capacity, worth an investment of $18 billion, and representing only 0.8 percent of country's total electricity generation capacity.

"Federal tax incentives, state renewable energy standards and incentives, and continued uncertainty about the future cost and liabilities of conventional natural gas and coal facilities helped spur this growth," says the EIA.

The Department of Energy does not include smaller, customer-sited wind applications used to power the needs of residences, farms and businesses in its "Annual Report on U.S. Wind Power Installation, Cost and Performance Trends: 2006."

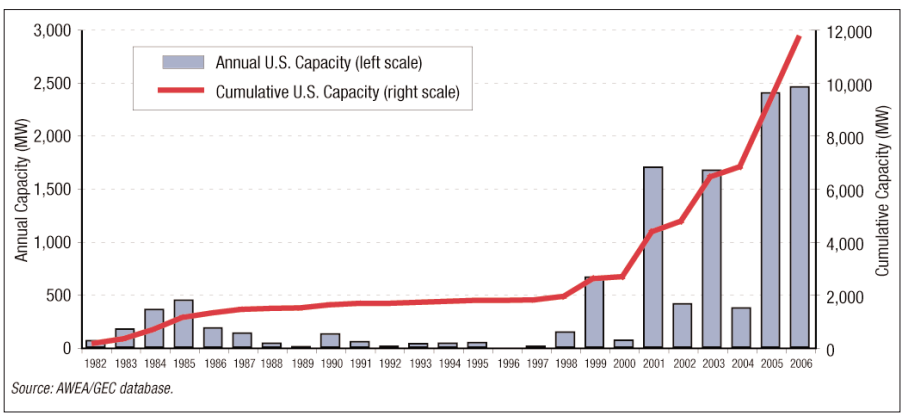
Texas with 2,739 megawatts of installed wind capacity last year edged out California (2,376 megawatts) as the leading wind energy state, followed by Iowa at 931 megawatts, Minnesota at 895 megawatts and Washington at 818 megawatts.

General Electric supplied 47 percent of the domestic installations with its turbines, down from 60 percent in 2005, with Siemens growing into GE's market share. "Siemens' move to the number two wind turbine supplier is particularly noteworthy given that it delivered no turbines to the U.S. market the previous year," says the report. "U.S.-based manufacturing of wind turbines and components remains somewhat limited in part because of the uncertainty of continued availability of the federal production tax credit."

Even so, new manufacturing capacity is being added in the United States. A new supplier of equipment, Clipper Windpower, is building a new manufacturing plant in Iowa; Suzlon is building a new plant in Minnesota; and Gamesa is building a plant in Pennsylvania.

The average turbine size increased to 1.6 megawatts last year. Since 1998, average turbine size has increased by 124 percent, and 17 percent of all turbines installed last year were greater than 2 megawatts, up from 0.1 percent installed in 2002.

The 24-page report, which discusses costs involved in wind energy development and wholesale electricity prices, is located at http://www.nrel.gov/docs/fy07osti/41435.pdf.



More For Defense Mfg.... (From page three)

base, improve the performance of defense systems and reduce life-cycle costs.

The third program would create a $10-million "Disruptive Manufacturing Technology Initiative" aimed at supporting long-term research into new manufacturing techniques. The Defense Science Board's February 2006 report on the Manufacturing Technology Program endorsed the idea of funding "disruptive" manufacturing technologies, "which can radically alter traditional manufacturing processes and change the industrial base," write the 15 senators. "These types of innovations would allow the DOD to gain easier access to affordable low-volume, state-of-the-art production capabilities, as is often needed in the acquisition of defense unique technologies of low density, high demand systems"

Meanwhile, the Senate Armed Services Committee praises the Defense Department for requesting $10 million for a defense-wide manufacturing science and technology program, and it recommends an increase of $10 million to develop test beds and prototypes of advanced manufacturing technologies, "diffusion of advanced manufacturing processes throughout the industrial base and the development of roadmaps to ensure that the Department can access required manufacturing and technology capabilities in critical defense technologies," says the report language.

The committee also recommends an additional $4 million be spent on printed circuit board technologies and manufacturing programs. In its June 5 authorization report (to accompany S-1547), the committee calls on the Secretary of Defense to publish a biennial strategic plan for the Manufacturing Technology program.

LETTERS TO THE EDITOR

I am the owner of a mold shop and the large companies of this country are more to blame for our trade imbalance than other countries. The problem is there are a lot of groups that want to fight their own battle rather than join with others to create one loud voice. When 75 percent of the people work for small business, there should be one organization doing the lobbying for them.

— Bruce Cain
XCEL Mold and Machine Inc.
mfg@xcelmold.com

In the words of a Janie Fricke country song from a few years back — "It Ain't Easy Bein' Easy" when it comes to the immigration and offshoring fight. The opponents of the foreign worker programs such as the H-1b, L-1, TN etc. visa programs are easy picking for the industry and academic lobbies.

This is especially true when you consider the National Science Foundation, the Department of Commerce and the Department of Labor as well as the former Immigration and Naturalization Service are supporting the great jobs giveaway.

Their success is built on access to the powers that be in Washington. That access is the result of campaign contributions, free trips and yes, unfortunately, bribes. These are not limited to one party or the other.

It ain't easy being out spent by thousands of dollars to one. It ain't easy seeing the proponents getting bill after bill introduced to increase immigration every year. It ain't easy knowing many representatives and nearly all senators could care less about their constituents as long as they are able to get corporate campaign funds to be re-elected. It ain't easy knowing the politicians and "American" corporations are tearing down the nation and the American way of life for just a little more profit or one more term in office. It ain't easy knowing the American taxpayer is subsidizing the corporations to move their jobs offshore or hire foreign workers to take American jobs here.

Have you ever tried to get access to the Secretary of Labor or the Secretary of Commerce? Are you able to see the President's Science Advisor? Are you even able to get a written response to a question you may have in a letter to one of these people? I doubt it.

The proof of that is the response from the proponents of more immigration. Their responses is not to refute what we say, but to indicate that we "just don't understand" the problem or resort to name calling such as labeling us as the "flat earthers."

Their most common response is no response, simply cranking out more phony "studies," more campaign contributions and more press releases to those in the media they know will publish them without questioning their accuracy.

Never mind the debunked National Science Foundation report of years' past. Never mind the GAO studies that destroyed the Information Technology Association of America and Department of Commerce reports. Never mind the 2002 RAND study, which empirically shows there was no shortage of American workers.

So, what do we, the opposition, have to carry the fight to those in power? We have very little other than being on the right and moral side of the argument, and votes. Funding is nearly non-existent for most organizations opposing increased immigration.

There is another Janie Fricke song titled "Tell Me a Lie," which seems appropriate here. In this case perhaps it should be "Tell Me a Lie and Give Me The Money."

— Bill Reed, American Engineering Association
billr@aea.org

The idea that the outsourcing of American jobs to countries like China is good for the American economy is absurd. But I guess mainstream economists deal only in absurdities — the kind of absurdities that their paymasters in the corporate world like to hear.

— Francisco Ramirez
guadalupesalcedo@yahoo.com

I question your statement that China has surpassed the U.S. in exports. We export over $1 trillion per year, and China is currently in third place behind the U.S. and Germany, respectively, as suggested by the Organization for Economic Cooperation and Development: www.oecd.org/document/15/0, 2340,en_2649_201185_35363023_1_1_1_1,00.html.

— Andrew Reinke
fti@foreigntargets.com

Out here in California thousands of aerospace engineering and manufacturing jobs, even in the defense industry, have been moved to China and India. Wall Street knows nothing about manufacturing and technology and cares even less. The parties that are supposed to be responsible for our nation's technological and defense capability have been bought off and co-opted by the very people they're supposed to be regulating. Our political system presently has no safeguards against this development. We are clearly headed over a cliff.

— William C. Gilwood, Unisin Power Technology
wgilwood@unisin.com

History will prove the U.S. has in the last few years given away our wealth to a nation that will prove to be our mortal enemy. Why do we let our politicians get away with this? When are we as a people going to wake up and realize we are destroying our middle class? My family and I will never vote for another politician who supports trade with China as it exists now.

— Bruce Mackintosh, Mackintosh Tool
brucemack@mac-tool.com

I recently came to an important conclusion. The only way American workers have a chance in hell to stop the bleeding of American jobs to the Chinese is to form a coalition similar to what the Blue Ribbon Coalition did to counter the rabid environmental movement's push to

(Continued on page 10)

China's Rise Is Not A Matter Of Great Concern Worldwide

Most people in the world believe China will catch up to the United States economically and that it would be a good thing if it does, according to a survey conducted by the Chicago Council on Global Affairs and WorldPublic Opinion.org. "In no country do most people think this would be mostly negative," according to the survey. "What is particularly striking is that despite the tectonic significance of China catching up with the U.S., overall the world public's response is low key — almost philosophical," says Steven Kull, editor of WorldPublic Opinion.org.

The Chinese are skeptical however. Only 50 percent of Chinese say that their economy will catch up to the U.S. economy, considerably less than the percentage of Americans who believe China will grow to be as large as theirs (60 percent). In Peru, 76 percent said China will catch up to the United States; in Israel, 75 percent; France, 69 percent; Iran, 64 percent; Russia, 64 percent; and South Korea, 61 percent.

In only two countries do those believing the U.S. economy will always stay larger than China's outnumber those who think China will catch up: 42 percent of Filipinos say U.S. will stay larger to 38 percent saying China will catch up; and 36 percent of Indians believe the U.S. will stay larger versus 22 percent saying China will catch up.

The only place there is any real concern about China catching up to the United States is in the United States, where one in three people say they are worried. But 54 percent

(Continued on page 12)

Letters To Editor...(From page 9)

close public lands. The Blue Ribbon Coalition gathered many disparate groups who did not always see eye to eye but actually had many things in common when the big picture was considered. They pooled their resources and were able to give the corporate-backed environmentalists a run for their money.

I work in the commercial cabinet and millwork industry. We used to think that the furniture industry's problem with Chinese imports would not affect us because our work had to be installed. Big mistake. Our industry has now lost the majority of the hospitality case goods work to the Chinese. The lions' share of this work, including the guest room built-in vanities and granite tops are being imported by the Chinese who have set up their own installation companies here in the U.S.

We also do high-rise condo packages, including complete kitchens, bathroom vanities, hall storage cabinets and closet shelving. We have consistently been directly up against the Chinese on these projects. An example of the "China Price" we found out about was our $1.9m versus their $0.7m. Their sell price was actually cheaper than our materials cost. I have heard this same scenario described over and over again by many of our suppliers. We clearly see what is coming if things don't change. We must ally ourselves with other manufacturers who are in the same dire situation.

— Dave Baal, Estimator, Mission Valley Cabinet
davidb@mvc-ct.com

Maybe the way to fix the political decision-making process is to hold the politicians accountable for their decisions where it will hurt them the most. Take away their free medical insurance and cut their pay by 60 percent. Take away book-writing money after they leave office and no pensions. You know, kind of like the rest of us who pay for their bad decisions.

— Mark Ciesla
macyvn@aim.com

The Washington, D.C., junta is tearing apart the U.S. economy, society and international goodwill. America deserves, and urgently needs, a new social contract based on the notions of fairness, sustainability and international cooperation. The White House needs a new resident, of the stature and vision of FDR, with a New Deal for the twenty-first century.

— Argeo T. Quinones Perez, University of Puerto Rico
aquinones@coqui.net

MANUFACTURING & TECHNOLOGY NEWS (ISSN No. 1078-2397) is a publication of
Publishers & Producers, P.O. Box 36, Annandale, VA 22003. On the Web at: www.manufacturingnews.com.
PHONE: 703-750-2664. FAX: 703-750-0064. E-MAIL: editor@manufacturingnews.com.
Annual Subscription Price: $495. Frequency: Twenty-two times per year.
Editor & Publisher: Richard A. McCormack (richard@manufacturingnews.com)
Web Technical Coordinator: Krishna Shah (krishna@manufacturingnews.com)
Business Manager: Anne Anderson (anne@manufacturingnews.com)
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China's New Fund...(From one)

non-voting investment in the Blackstone Group.

China's decision to diversify its vast holdings through the so-called China Foreign Exchange Investment Co. will provide a fresh supply of cash for the purchase of foreign assets instead of U.S. debt securities, which currently account for 99.9 percent of China's holdings. But diversifying its portfolio, especially if it does so with centralized government control aimed at manipulating industrial markets, would raise political flags throughout the world.

"China no longer needs to hold most of its external assets in safe, liquid securities," says Brad Setser, a research associate at the Global Economic Governance Program at the University College in Oxford. "China is integrating with the world economy before China's internal corporate governance has fully converged with global norms."

Most of what China will do with its sovereign wealth fund will be heavily scrutinized, but it should not be feared, says David Marchick, a partner with Covington & Burling in Washington, D.C. "While important policy questions are triggered by the creation of this fund, particularly given its potential size, the United States should not react negatively to the move by China," Marchick wrote in prepared testimony presented to a May hearing of the U.S.-China Economic and Security Review Commission. "Such sovereign wealth funds have become commonplace in recent years."

Three panelists describing the fund to the U.S.-China Commission agreed with that assessment.

Other countries with similar funds include Norway ($300 billion), Singapore ($300 billion), Kuwait ($200 billion) and Abu Dhabi ($500 billion to $600 billion). Korea, United Arab Emirates, Brunei, Malaysia, Taiwan, Canada and Chile also have sovereign investment funds. Alaska and Wyoming have funds that invest state revenues in private equities. The Ontario Teachers' Pension Fund invests 24 percent of its portfolio abroad. The Alabama state pension fund had a controlling ownership interest in U.S. Airways from 2002 to 2005. The Canadian Pension Plan has heavily invested in foreign firms including Serta, Nielsen and Univision, among others, says Marchick.

"Far from a cause for alarm, sovereign wealth funds such as China's proposed fund are part of a recent and growing trend by central banks and state pension fund managers to add the goal of increasing returns to the longstanding goals of solvency and liquidity," says Marchick. "The manager of China's new fund recently said that they intend to take small stakes in a number of publicly traded entities as opposed to controlling stakes or acquisitions of Chinese and foreign companies."

But the fund could grow to be much, much larger, says Setser. With the addition of $1.5 trillion in foreign holdings between now and 2010, China will have $3 trillion sloshing about. "A world where China creates a $1.5-trillion investment fund rather than adds $1.5 trillion to its reserves over the next few years isn't hard to envision," says Setser. Even a more modest forecast of China adding equal sums to its reserves and investment fund would generate $900 billion for equity investments by 2010, making it the world's largest equity fund. "Relative to a scenario where China invests only in bonds, a scenario where China invests primarily in equities might push U.S. interest rates up by as much as 50 basis points," he says.

With such large amounts of money available for equity investment, "two key policy issues arise," says Marchick: "First, will the fund be professionally run by independent financial and investment experts, or will the investments be made to advance industrial policy, political or foreign policy objectives? More specifically, will investment decisions be made according to financial criteria, or are they being used as instruments to extend state policy? Second, will investments by the fund in the United States raise any national security issues?"

It's hard to answer these questions now, but in all likelihood, the fund will be a good thing for China and the United States, Marchick argues. For China, it could help spur economic reform and integrate it into the global economy. "A U.S. policy that encourages

(Continued on next page)

Stevens Institute...(Continued from page five)

taxed it would change the equation. When I had my fellowship, the U.S. government did not tax doctoral fellowships. It was a clear message during the Kennedy space era. We felt special because we didn't pay any state or federal income tax. It wasn't a lot of money we saved, but we felt special. The country and the states wouldn't lose much money, but it would send a heck of a message for students pursuing their Ph.Ds in engineering, science, certain areas of management — not finance and mergers because we have them coming out of our ears — and teachers. With teachers, we should let them get a Ph.D. in the subject area they're teaching, not in education. Don't tax those folks. We need those teachers in the high school and middle school. If you had good fellowships you will get them. I wouldn't have said that five years ago but it's starting to change.

You also have to capture kids before they go to work for a company and you have to capture them early because they don't have a concept of what it takes to get a Ph.D.

Q: Why aren't more research universities migrating to this model?

Raveche: Because when the *U.S. News and World Report* ranking comes out they want to keep their ranking. That ranking is the worst thing that has happened to higher education. Both *U.S. News* and the SATs now have far too much influence in higher education. What have the SATs done to shape innovation in the United States? We've forced kids into a track and a way of thinking. *U.S. News and World Report* gives you criteria that require universities to play the game according to their rules. Where's their measure for innovation? It's not there. You get no credit for innovation in *U.S. News and World Report*. None. They don't know how to measure it. They don't have a clue.

Investment Fund...(Continued from page 11)

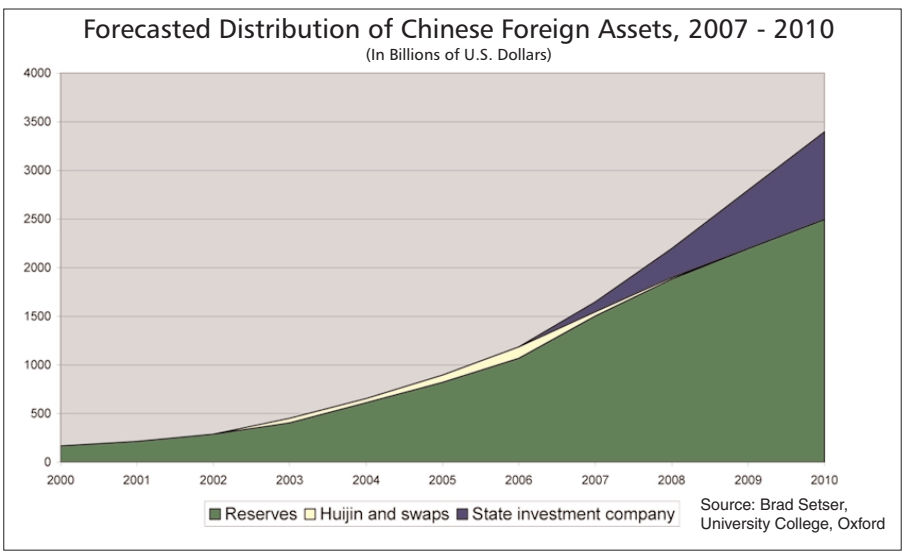
investment by American companies in China while frowning upon Chinese investments in the United States is neither sustainable nor sound from an economic perspective," he says. "Rather, the United States should simultaneously encourage China to allow FDI and make clear that Chinese investment in the United States is not only welcome but encouraged. Greater FDI from China would bring substantial economic benefits to the U.S. economy, just as investment from other countries already does. Chinese investment in the United States will create jobs, promote research and development in the United States and enhance U.S. exports to China, including through intra-company trade."

China's new overseas investment company managers could help the country's leading manufacturing firms gain strategic footholds in foreign markets, says Daniel Rosen from the Peterson Institute for International Economics. "I expect there to be a dramatic increase in offers from Chinese firms to purchase stakes in U.S. firms in the future," he says. "In large part, this is for the same reason there has been and will be a dramatic increase in U.S. purchases of stakes in Chinese firms including in strategic Chinese industries such as finance and mining machinery. Our economies are becoming more integrated and in the process there are only two options for establishing a business platform from which to sell to a new market: build it or buy it. In the case of China, there is a special urgency to buy it."

China has exceptionally good skills in manufacturing, but little in distribution, retail and high-end services. As manufacturing margins shrink, the country's leading exporters "absolutely must expand their businesses downstream from the factory," says Rosen. "And yet, they have little experience operating in a heavily regulated, customer-oriented marketplace such as the U.S. To build retail operations from scratch will require decades; acquisition is the logical and quicker alternative. Typically, the business capabilities global Chinese companies attempt to acquire in this regard will be mundane."

China will have to improve its public relations operations if it decides to move aggressively into the U.S. market for equity stakes in U.S. businesses. "They will need to demonstrate their commitment to creating jobs, complying with U.S. laws and regulations, working collaboratively with organized labor and being good employers," said Marchick. "They will need to become involved in their communities in the same way that the best American and foreign companies do. Indeed, the initial U.S. experiences with Chinese investment have been positive."

The Chinese owners of Lenovo, IBM's former personal computer division, have proven themselves worthy by increasing purchases of American software for sale in China. South Carolina Governor Mark Sanford has spoken favorably about Chinese investments in appliance manufacturer Haier. South Carolina intends to open an economic development office in China seeking investment in the state.



China Is Not Of Concern...(From page 10)

said it would be neither positive nor negative, and 9 percent said it would be mostly positive. In France, 29 percent said it would be mostly negative, versus 20 percent who said it would be mostly positive. In Israel, more said it would be positive (27 percent) than negative (17 percent).

"On average, across all countries polled, the most common response is that seeing China catch up with the United States would be equally positive and negative (32 percent), though those who think it would be mostly positive (29 percent) outweigh those who think it would be negative (20 percent)," says the survey.

The majority of people polled throughout the world don't trust China. Ten out of 15 publics polled say they do not trust China to act responsibly in the world. But the U.S. is also distrusted by 10 out of 15 countries polled. Those who distrust the United States outnumber those who trust it by 53 percent to 41 percent, whereas distrust of China is 52 percent and trust is 38 percent.

China has the largest majority in favor of free trade agreements: 66 percent say they would like a free trade agreement with the United States, and only 19 percent say they would not. In contrast, Americans are leery of lowering their tariff barriers to Chinese or Japanese goods, even in exchange for reciprocal action in favor of U.S. goods. "U.S. respondents lean slightly in favor of free trade with their close ally Japan (47 percent to 43 percent), but a majority opposes such an agreement with China (56 percent)," says the survey. Publics in Thailand, Japan and Korea support free trade agreements with the United States.