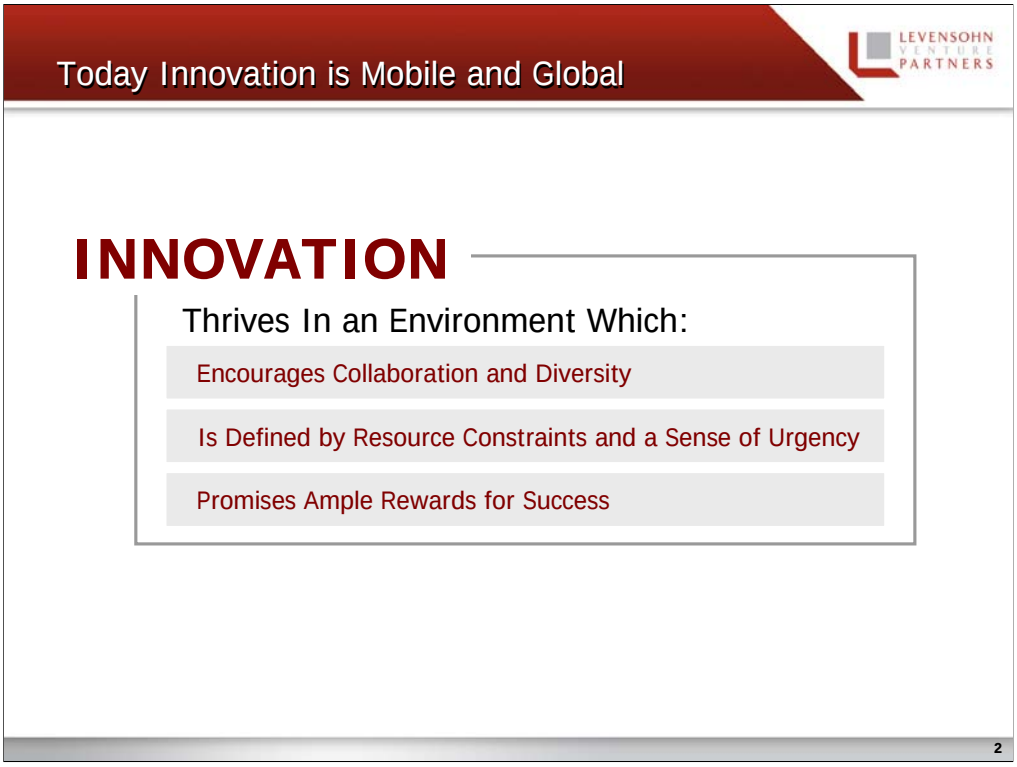
Good morning. Thank you for inviting me to speak with you today about America's slipping global competitiveness and its implications for the next generation of American emerging growth companies.

While it appears that this issue is increasingly capturing America's mind share, unfortunately lip service is not translating into timely or effective action by our policymakers.

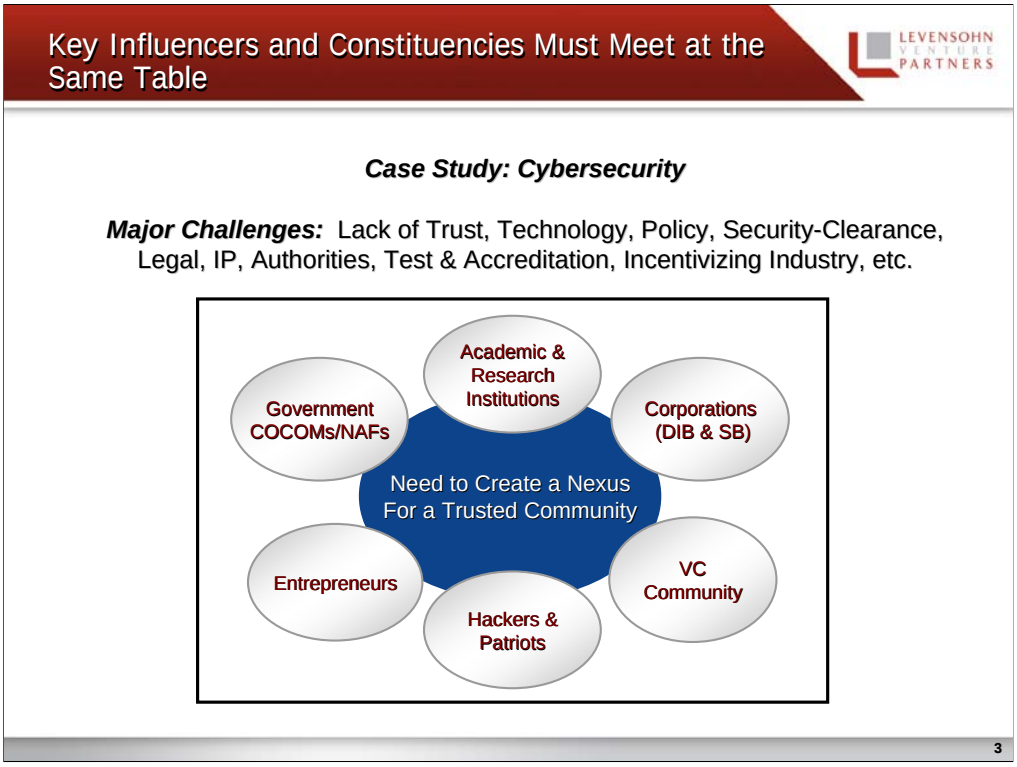


Innovation thrives in an environment that encourages collaboration and diversity, that is defined by certain resource constraints and a sense of urgency, and that promises ample rewards for success. Innovation doesn't stop due to economic troubles—but it does move away from environments that do not encourage innovation—let's not forget that the combination of entrepreneurial talent and risk capital, the lifeblood of innovation, is very mobile.

With this in mind, I am going to speak to you today about some of the challenges that global innovation brings to the U.S. and comment on the National Venture Capital Association's position with respect to the development of intellectual property in general and pending Senate Bill 515 on patent reform in particular.

A lot of people are asking the same question—why is America slipping? But many also believe that America comfortably remains number one in innovation globally. The common concern is that America cannot afford to lose its ascendancy in the future. Unfortunately, multiple relevant measures of long-term innovation trends show that America is no longer number one. On the contrary, America has been in long-term decline, a decline that shows no signs of changing.

Ironically, our country's historic success as the global leader in innovation has made us slow to realize the necessity for the development of a coordinated innovation agenda to enable America to continue its leadership role in a radically different international competitive environment. And this is one of the root causes of the American malaise of the early 21st Century.



The absence of cohesion in American public policy can be seen in many areas—with cybersecurity coming immediately to mind. Mike McConnell, former director of the National Security Agency, recently wrote an opinion piece in the Washington Post on why the U.S. is losing the cyber war, commenting that "*The problem is not one of resources; even in our current fiscal straits, we can afford to upgrade our defenses. The problem is that we lack a cohesive strategy to meet this challenge.* "

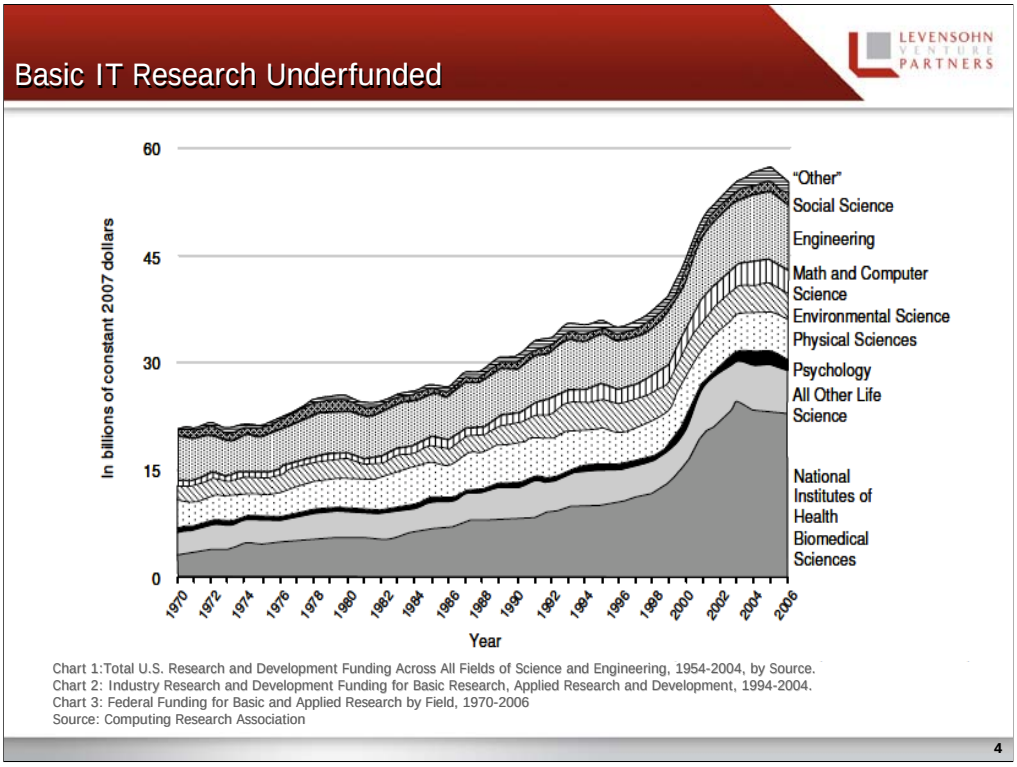
This lack of cohesiveness comes from short-term thinking that has become prevalent in many aspects of American society. The notion that "posterity doesn't matter" has unfortunately taken root in our country, and this has led to fragmented approaches to public policy solutions across the board, corroded leadership among our elected representatives, and contributed to an entitlement culture and a lack of accountability that permeate much of American society.

When it comes to understanding the challenges that we face in innovation, especially protecting our nation's critical cybersecurity infrastructure, we can only implement a cohesive approach with the full set of players sitting at the same table. This includes entrepreneurs, government, academia, large industry, venture capitalists, and, of course, hackers & patriots.

The same holds for protecting intellectual property rights through new legislation, where we must overcome basic obstacles that include inherent lack of trust between government, large corporations, small business, and entrepreneurs, technology gaps between them, the lack of commonly accepted standards for accreditation, and, of course, the need to provide basic incentives to make the value proposition for collaboration compelling to private sector constituents. We will not accomplish any of this without bold leadership from both the public and private sectors supported by a common acknowledgement that we have a serious problem and that business as usual no longer works.

Unfortunately, America is very late to the game in understanding the interdependence of the key players in this ecosystem—and the principal loser in this scenario is the most important player—the entrepreneur. Looking specifically at the intellectual property component of this discussion, because U.S. government policy is heavily influenced by special interest groups, we suffer from "me first" thinking in the current debate on patent reform, particularly driven by the large technology company consortium.

Before I comment on the current patent reform debate, I want to point to evidence of the root causes of the long-term decline in American innovation and relate this to the global financial crisis.

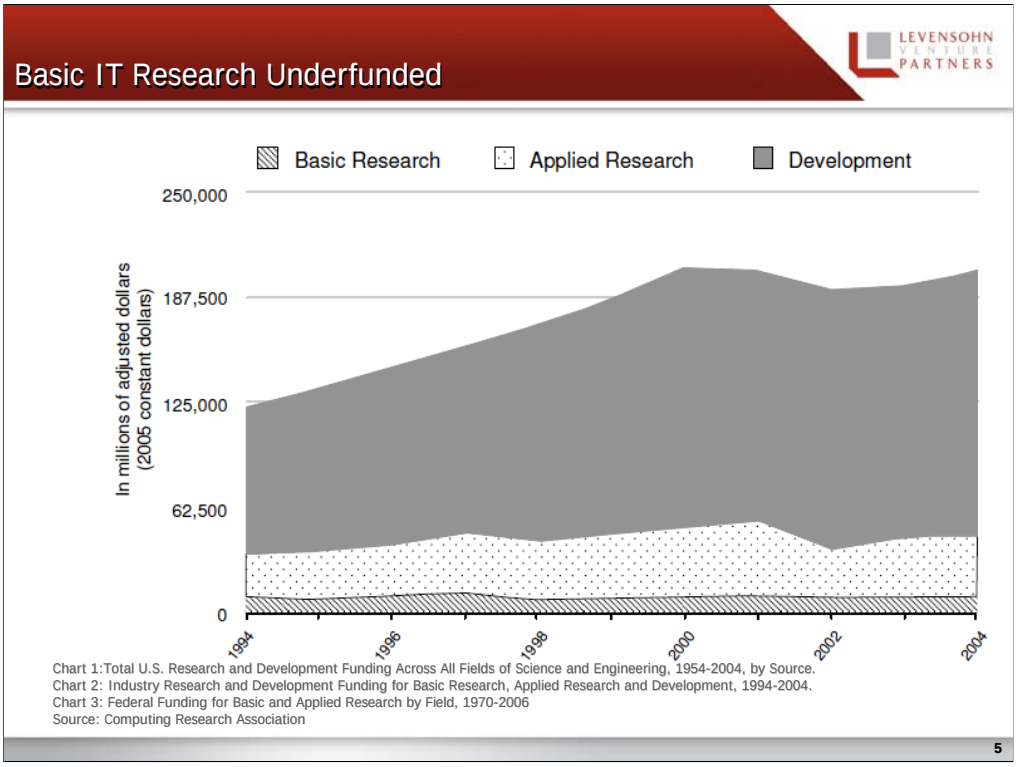


Innovation, American know-how, entrepreneurs, these are the foundations of American success. But our foundations are crumbling--we are living through a crisis of innovation in this country, and the implications of ignoring it or subordinating its resolution to the pressing short-term crises of the day are unacceptable.

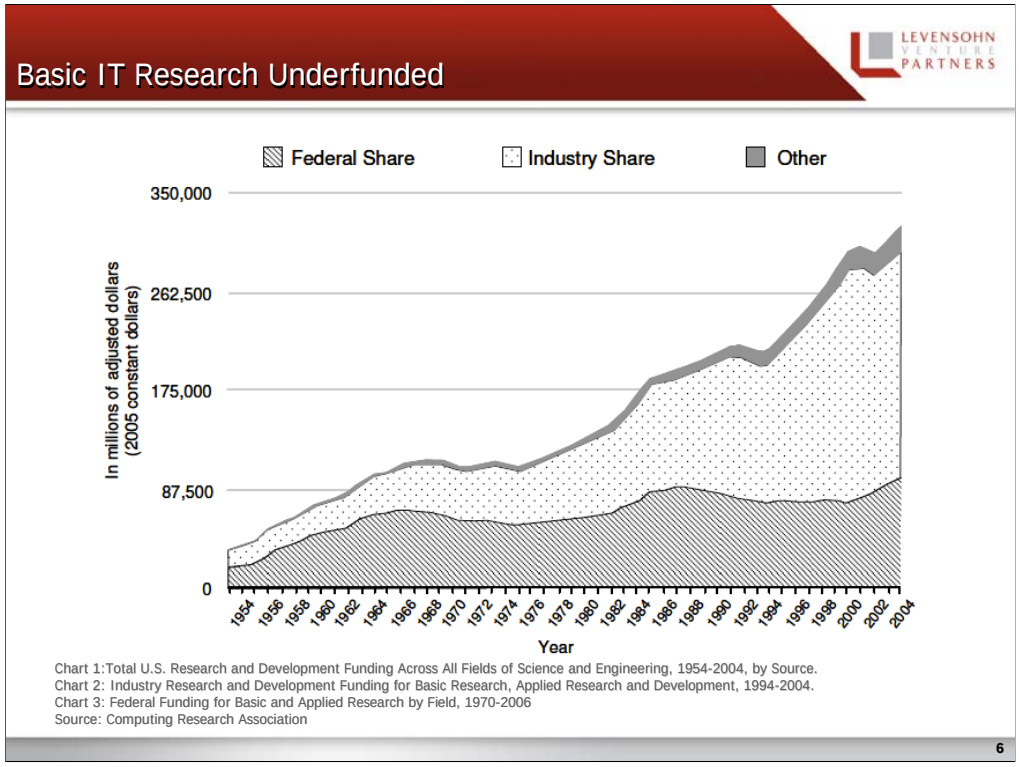
The tragedy of the long-term decline in America's innovation ecosystem, which has broad negative implications for our development of new and valuable intellectual property, was summed up in 2007 by Norm Augustine, the former CEO of Lockheed Martin, in his essay, "*Is America Falling Off the Flat Earth*", saying succinctly "we are eating our seed corn."

In the spring of 2009, a National Council commission, co-chaired by Professor Randy Katz of Berkeley and Eric Benhamou, released an important report analyzing the state of the U.S. R&D ecosystem. This report's extensive statistics reveal that Basic IT Research in the United States has been underfunded for many years relative to increasing competition from other fields as well as in absolute terms given the growth of our nation's economy over the past 50 years.

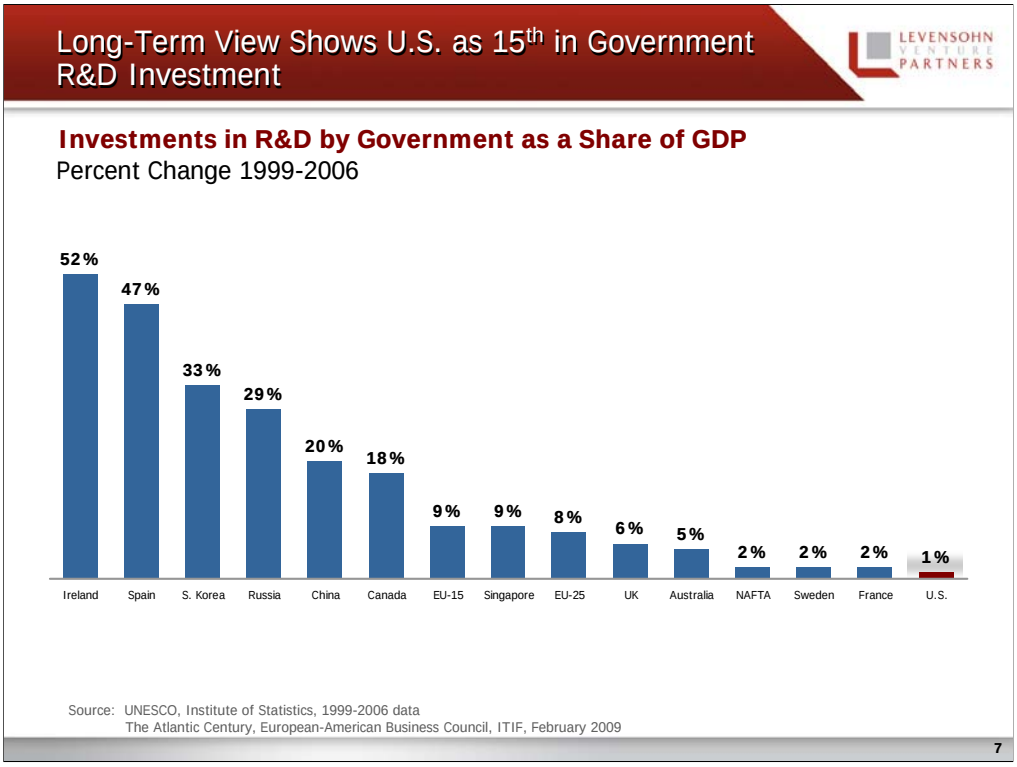
In this first chart, we see total U.S. research and development funding Across All Fields of Science and Engineering from 1954 –2004. It is clear that the Federal Government and industry account for the lion's share of this investment.



But if you look at the breakdown of these funds within industry and divide the share of those funds devoted to Basic Research compared to Applied Research and Development, the graph shows quite clearly that basic research has remained flat in absolute dollars for an extended period and that it accounts for a very small portion of the total. (*Basic Research here means research to investigate new ideas and to change how people think as opposed to how people do things. It includes the investigation of basic scientific and engineering phenomenon that are independent of their immediate applications--for example, defining a new encryption algorithm).*

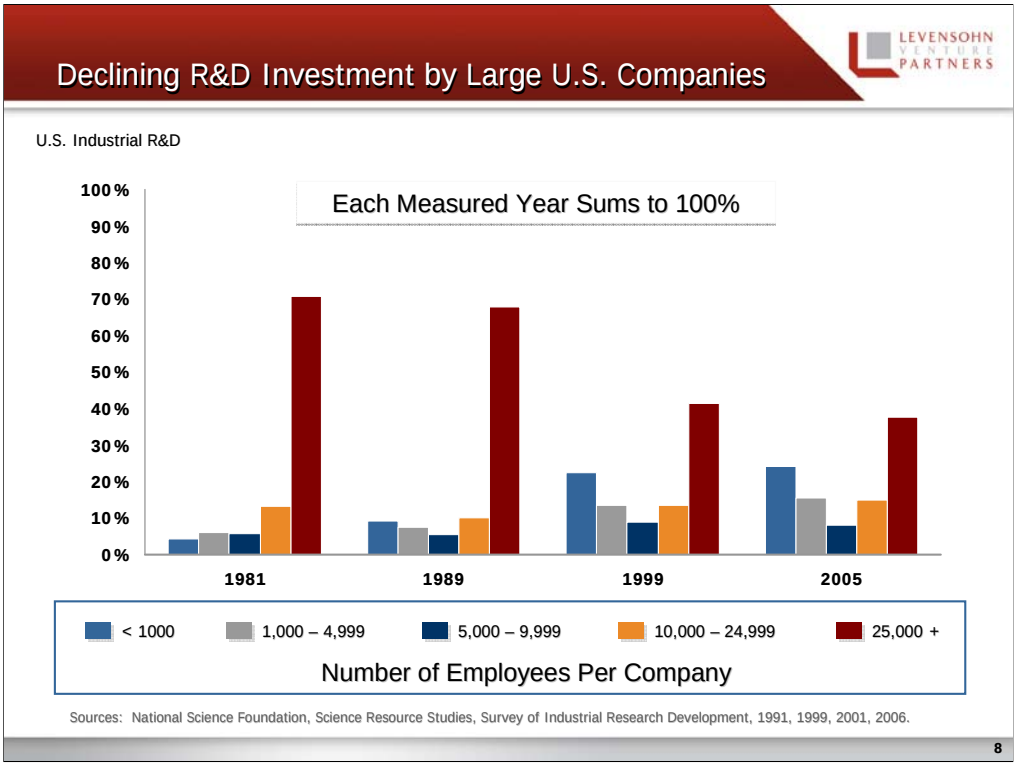


It is worth noting that between 1970 and 2006, IT research has been increasingly crowded out by competing research sectors, as this chart shows that the lion's share of Federal Funding for Basic and Applied Research by Field has increasingly gone to Life Sciences, in particular to NIH and the Biomedical Sciences. That is not a bad thing in and of itself, but it is a fact that illustrates the reality of intense competition for research resources between different fields of science—and IT research funding has suffered.

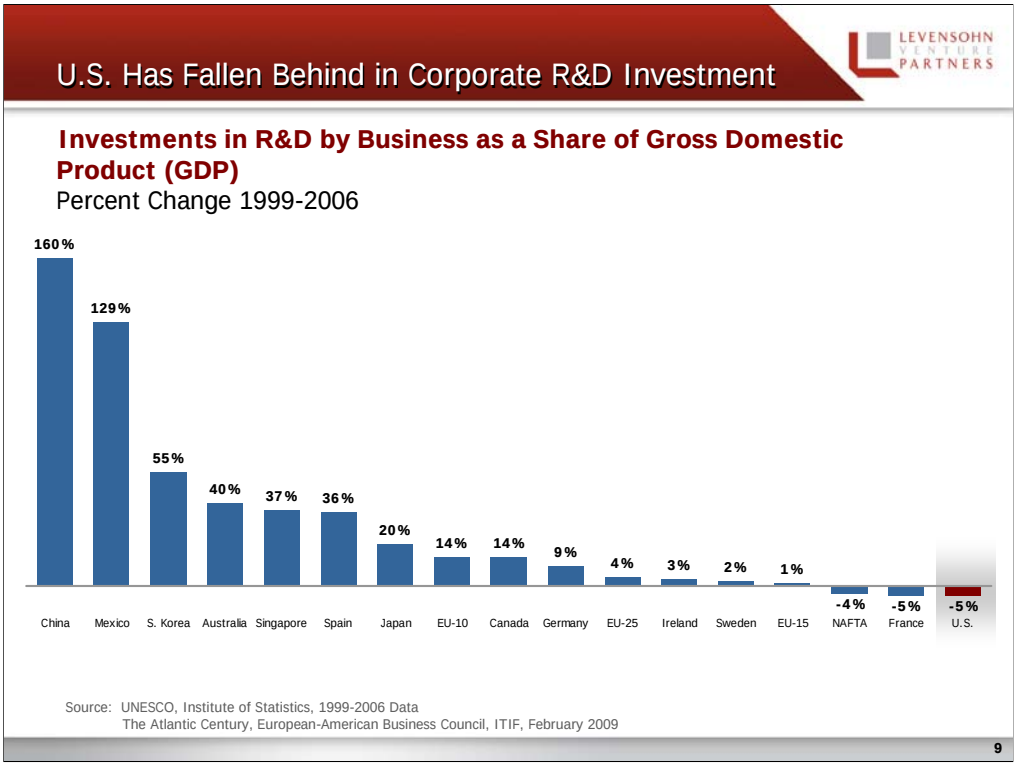


At the same time that we have seen this multi-year decline in IT research spending by the Federal Government, other countries have ramped up their R&D investment. Looking at the U.S. position since 1999, we are ranked 15th and are compounding at 1%, behind France.

One impact from the fact that other countries are investing in their own R&D at an accelerated rate is that they are now successfully reclaiming an increasing percentage of the highly skilled foreign-born nationals that historically have earned PhD's at American universities—many of whom have historically gone on to create and build massively successful American companies. The impact of this is severe, and one of the creative approaches to addressing the desirability of retaining U.S. educated, foreign-born nationals as U.S. entrepreneurs is through the Startup Visa Act, which is legislation that was introduced by Senators John Kerry and Richard Lugar and is widely endorsed by the venture capital community. We need more ideas like this, and we also need to thoroughly examine the potential for unintended consequences before such legislation is passed.



Turning to the corporate sector, large U.S. companies have also reduced their R&D spending. This graph shows a very important long-term change in the mix of what type of companies are carrying the R&D investment burden. Since 1981, when large corporations, meaning those employing 25,000 or more people, accounted for roughly 70% of U.S. corporate R&D investment, the mix has shifted such that, by 2005, approximately 60% of corporate R&D investment was made by smaller companies. It is worth noting how, over this same period of time, companies employing less than 1,000 people have increased their share of this load from less than 5% to almost 30%. Of course, venture-capital backed companies are prominent in this group. With this in mind, we should all consider the implications to research and development spending in this country that U.S. VC investment in 2009 alone declined by more than $10 billion, or 36% from 2008.



These sobering statistics are even more alarming when we look at the U.S. trends compared to other countries, and here we see the most important part of the picture-- the U.S. is at the bottom of the pack when we look at the compound annual rate of change in R&D investments by business from 1999 to 2006—with the U.S. business sector compounding at NEGATIVE 5%, again keeping pace with France, while China, Mexico, South Korea, Australia, Singapore, and many others are clearly increasing the rate at which they are investing in the future. I believe that economic historians will mark 1999 as a turning point in America's secular decline in technology investing because of the technology bubble's impact in accelerating the rise of China and India as technology centers of excellence in manufacturing and software, respectively.

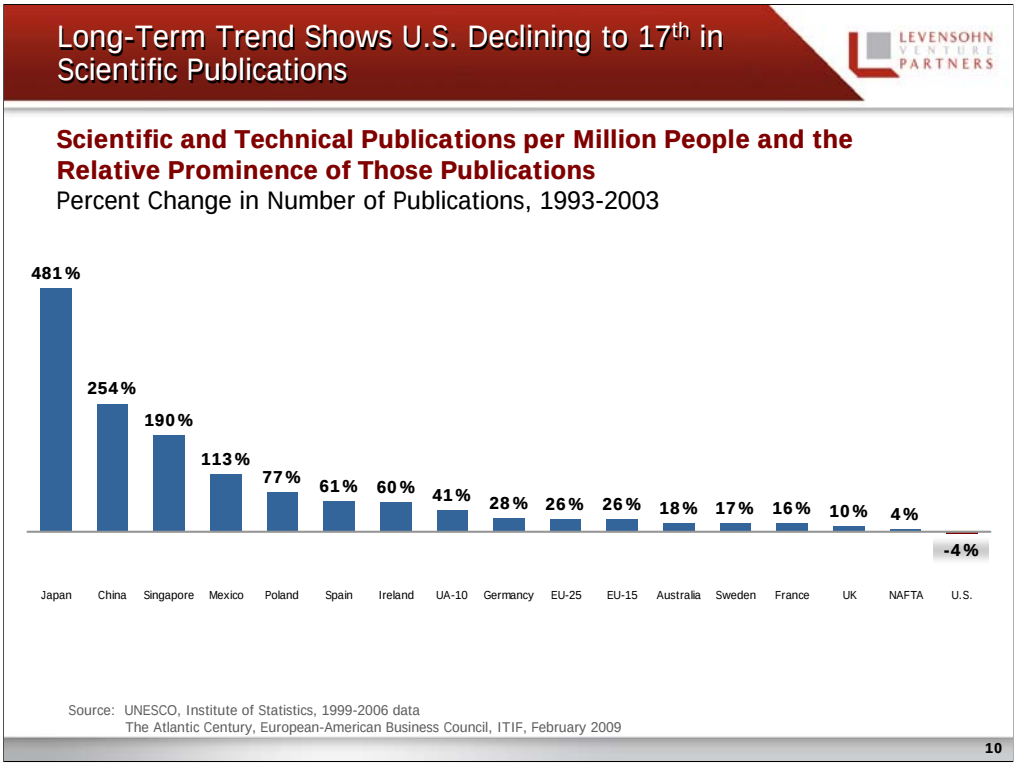
This is a critical situation. We should be worried because many American businesses, in particular emerging technology companies with best in class products and services, are competing asymmetrically against international companies that are government proxies. In effect, these American businesses engage in international business competition with one hand tied behind their backs. As Stephen Ezell and Rob Atkinson of the Information Technology and Innovation Foundation point out, international business since 2000 has evolved into an entirely different ballgame, and America appears to be the only country that hasn't figured out the new rules of engagement: *"In the 21st century global economy, nations can no longer be indifferent to the industrial and value-added mix of their economy. Indeed, with the sole exception of the United States, virtually all nations have consciously adopted national policies to "intervene in the market"—in this case to make it easier for corporations to invest in higher value-added activities that create higher-wage jobs in their nation."*

The answer for America is not trade protectionism—the answer is for our country to be proactive as opposed to reactive in addressing the innovation crisis by implementing policies designed to attract, educate, and retain the most skilled and ambitious scientists throughout the world. We want these domain experts to continue to have compelling incentives to pursue breakthrough innovation in our country. We should not continue to be adding names to Tom Friedman's list of groundbreaking alternative energy technology companies that failed in the U.S., only to be acquired and transplanted into countries like Denmark and Japan, where they became very successful.

Not only are we failing to compete effectively on the international front, as a country we have not made a national commitment to dedicate the resources necessary to change our approach to international competition in order to maintain an even playing field.

As we consider proactive approaches to promoting innovation, America can learn from the example of China. In an article in Physics Today published in late 2006, Cong Cao, Richard Suttmeier, and Denis Fred Simon analyzed China's 15-year science and technology plan. They point out that, *"according to the "Medium to Long Term Plan for the Development of Science and Technology", China will invest 2.5% of its increasing gross domestic product in R&D by 2020, up from 1.34% in 2005; raise the contributions to economic growth from technological advances to more than 60%, and limit its dependence on imported technology to no more than 30%."* This plan also includes ambitious goals in the areas of developing Chinese scientific thought leadership and domestic Chinese innovation. We can learn a great deal from this type of coordinated support of entrepreneurs and innovation and should consider formulating and implementing an equally ambitious plan for America.

Where is America's 15-year science and technology plan? While the Obama Administration announced an American Innovation Agenda last September, this announcement, like the Cyberspace Policy Review released in May of 2009, is long on ideas and short on action.

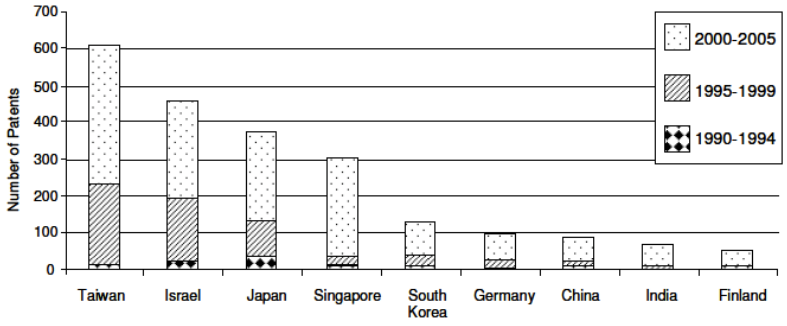


Another troubling long-term trend shows the U.S. declining to 17th in Scientific Publications. Again, notice the massive increase from countries such Japan, China, and Singapore and that the U.S. is the only country in long-term decline—in venture capital we call this a secular loss in market share.

In other reports, the Information Technology and Innovation Foundation shows the U.S. being 17th in R&D tax credits among other countries.

If you believe the law of large numbers, then China's investment in scientists and engineers will dwarf other countries over time.

Globalization of Invention is a Fact of New Global Competitive Environment



Foreign Co-Inventors Listed on Patents with Silicon Valley Inventors, 1990-2005.
Source: AnnaLee Saxenian, University of California, Berkeley, Presentation to the Committee, Mountain View Calif., February 23, 2007. Based on Data Analysis Conducted by Collaborative Economics, Inc., Palo Alto, Calif., 2007.

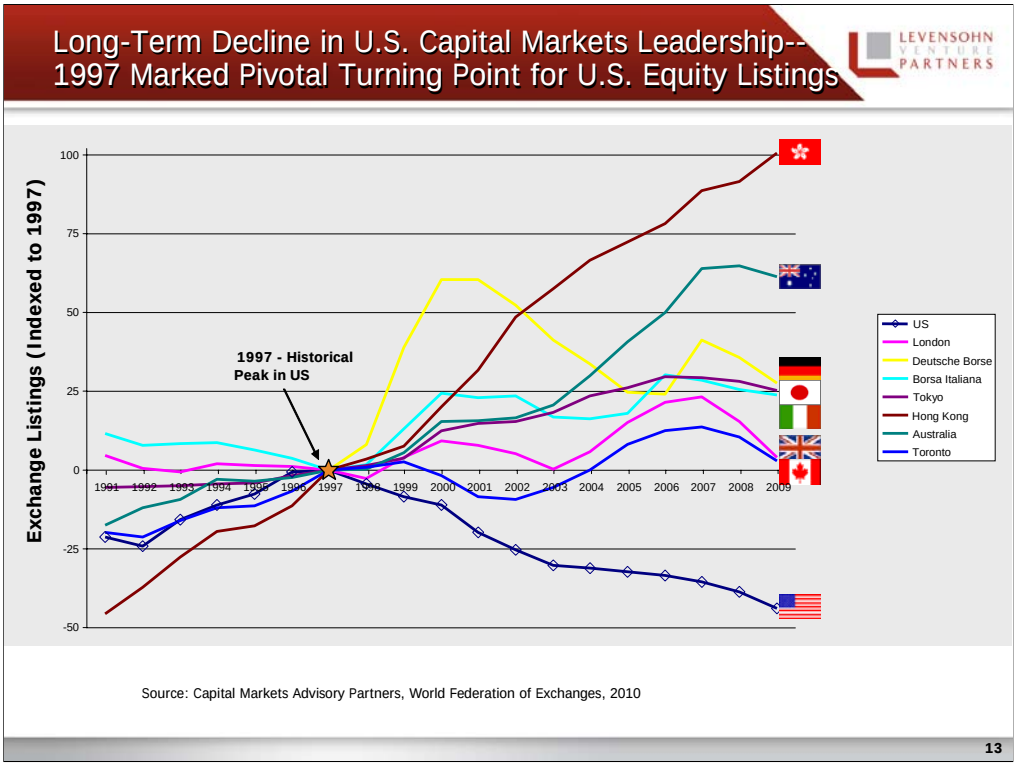
11

Another sign of globalization in the development of intellectual property that is particularly relevant to our audience today is the increasing percentage of foreign co-inventors on patents with Silicon Valley inventors. This graph shows how foreign inventors from Taiwan, Israel, Japan, Singapore, South Korea, Germany, China, India, and Finland have substantially increased their share in Silicon Valley intellectual property in recent years—it is not difficult to imagine that a U.S. patent system hostile to the small inventor could motivate foreign inventors to first patent their intellectual property in more hospitable IP protection environments that are offshore U.S.

This hard truth, that we have an innovation crisis in America, and that it is has been percolating for decades, is becoming more and more evident across many measures—our well recognized weakness in cybersecurity is one of the most obvious signs of this reality, and it all comes home to roost in innovation—where it is now well understood that the sophistication of our nation's adversaries in initiating cyber threats has evolved more quickly than our nation's ability to respond to them.

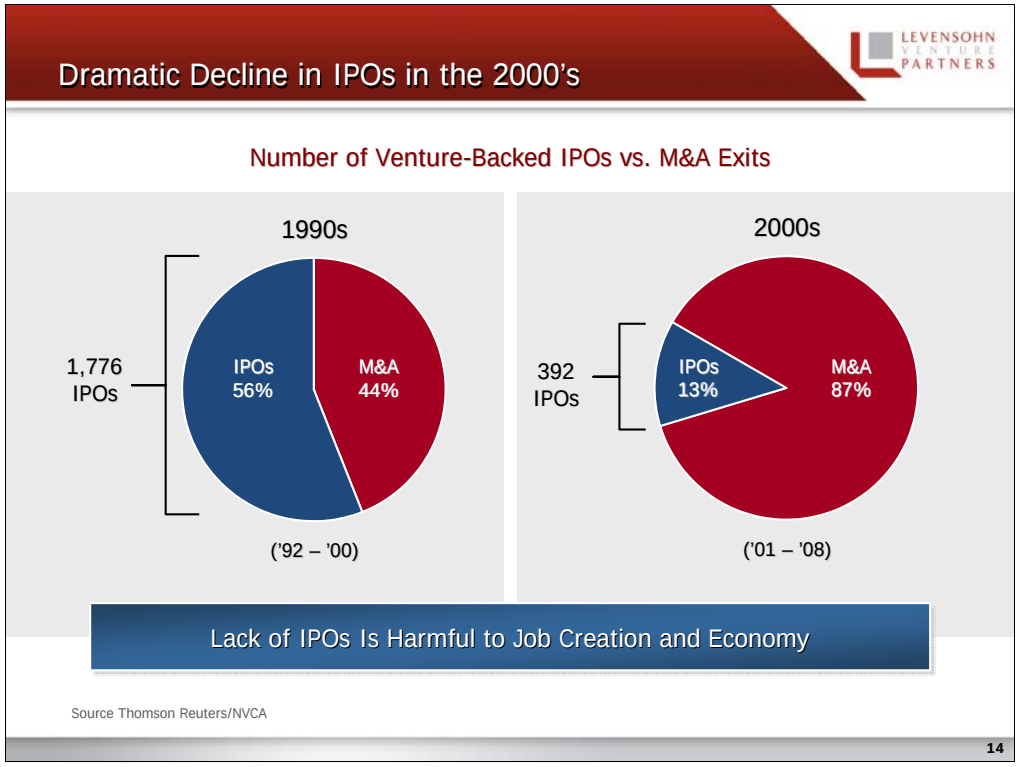
One of the most significant impacts of the global financial crisis on innovation has been to drain traditional sources of risk capital from the market at the worst possible time, and the negative impact of this pervasive risk aversion is particularly acute in the venture capital community.

Major structural flaws exist in the U.S. capital markets. Of relevance to emerging growth company equities, the liquidity crisis that we are experiencing in the venture capital industry can be traced to the unintended consequences of poorly understood regulatory changes to the U.S. markets that began in late 1996 and were effective in 1997.

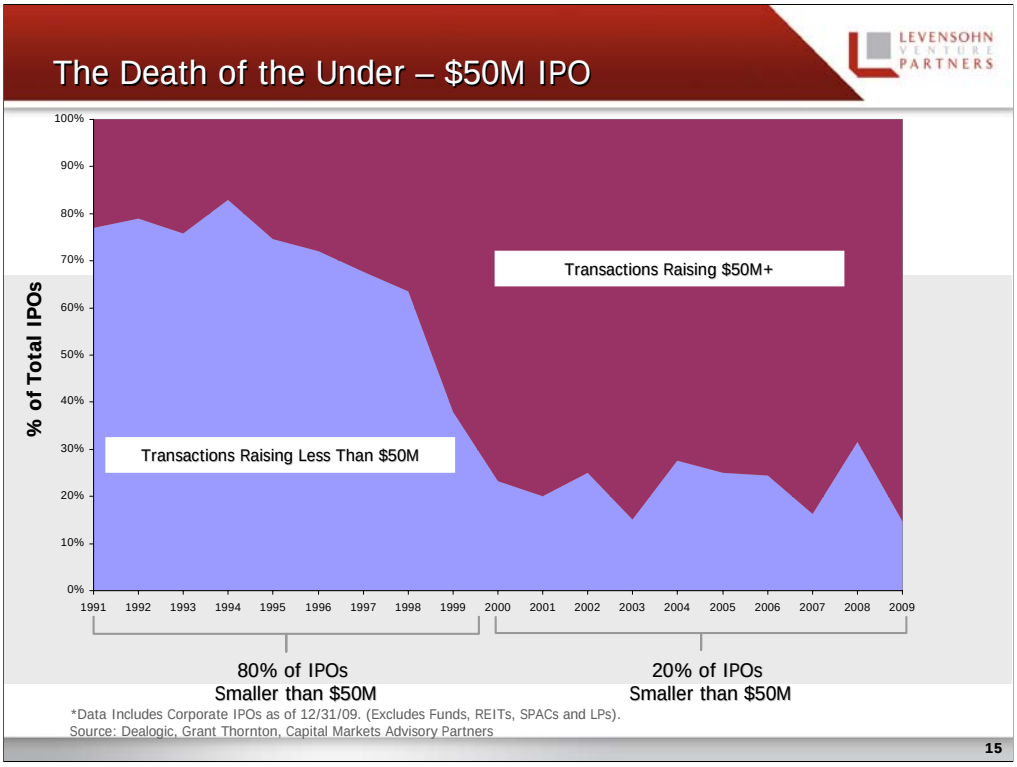


It is easy to be enthusiastic about recently announced underwriting transactions for venture-backed companies and early stock price increases, but the sustainable job growth recovery that we all wish for is not here. We cannot forget that the public market performance that matters for both venture capital investors and the entrepreneurs is the long-term stock price and the market liquidity available for selling shares beginning six months after the IPO itself. And this is where we have real systemic problems.

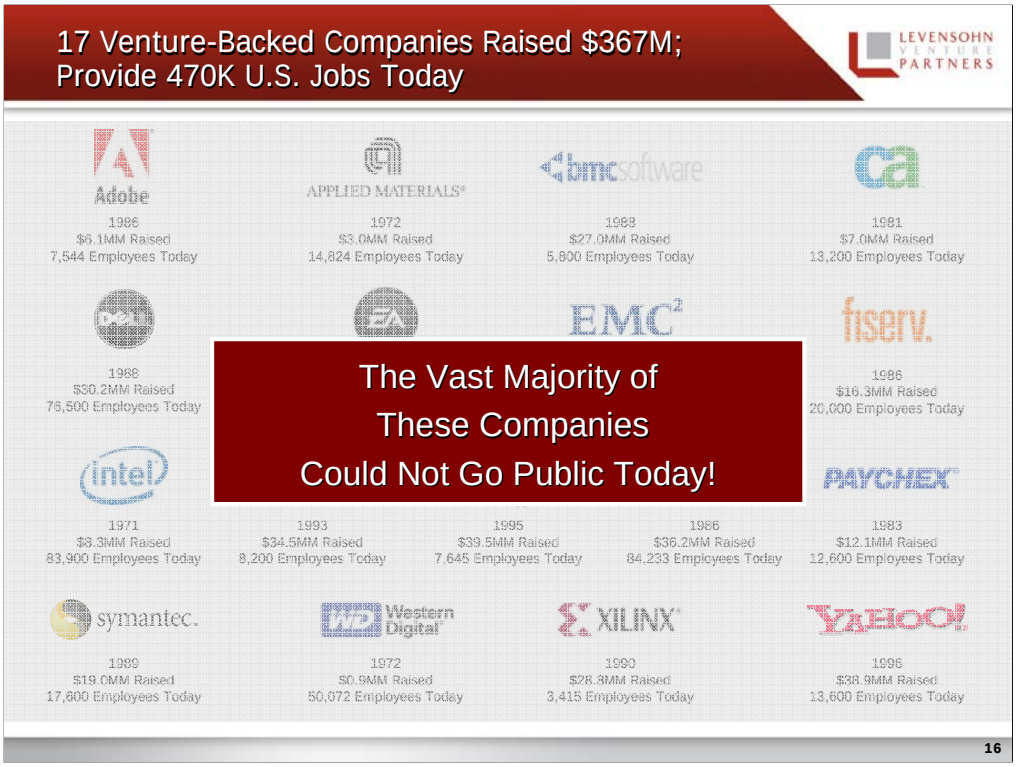
As you can see from the graph, most alarming from the U.S. capital markets perspective is the fact that the slide in America's share of public companies actually peaked in 1997—well before the technology bubble, and the U.S. has been in a steep slide ever since—ironically, at the same time that every other major global equity market has grown. The negative implications of this data are fully examined in an explosive new study of the unintended consequences of financial regulation in dynamic markets by Grant Thornton, from which I have taken this data.



From a venture capitalist's perspective, U.S. IPO's are essential to keeping the Merger and Acquisition market honest, and this clearly has implications for the value of intellectual property. If an emerging growth technology or life sciences company with valuable patents cannot access public market capital, this reality is not lost on large corporations who can always afford to wait for that next private fundraising round to fail or for the company to miss another quarter of their financial plan. What does it mean to have no access to IPO's? In Q3 2009, 50% of venture-backed M&A's (with a disclosed value) yielded less than the original venture capital investment. The multiples rose in Q4 2009 with 23% percent of the M&A transactions yielding less than the total venture capital investment; 24% were 1-4x total venture investment; 30% were 4-10x total venture investment; and 19% were greater than 10x total venture investment. These weak M&A returns cannot sustain the VC industry, which is why it should be no surprise that the U.S. venture capital industry is contracting severely.



The small growth company is widely recognized as creating new jobs, and, in America, over the past eleven years we've witnessed the capital markets death of one of the great job-creation mechanisms in the United States, the sub-$50 million IPO. To be clear, this isn't just a venture capital problem—this is a major problem for the American entrepreneur—since 1991, 47% of all U.S. IPOs were neither VC or PE backed.

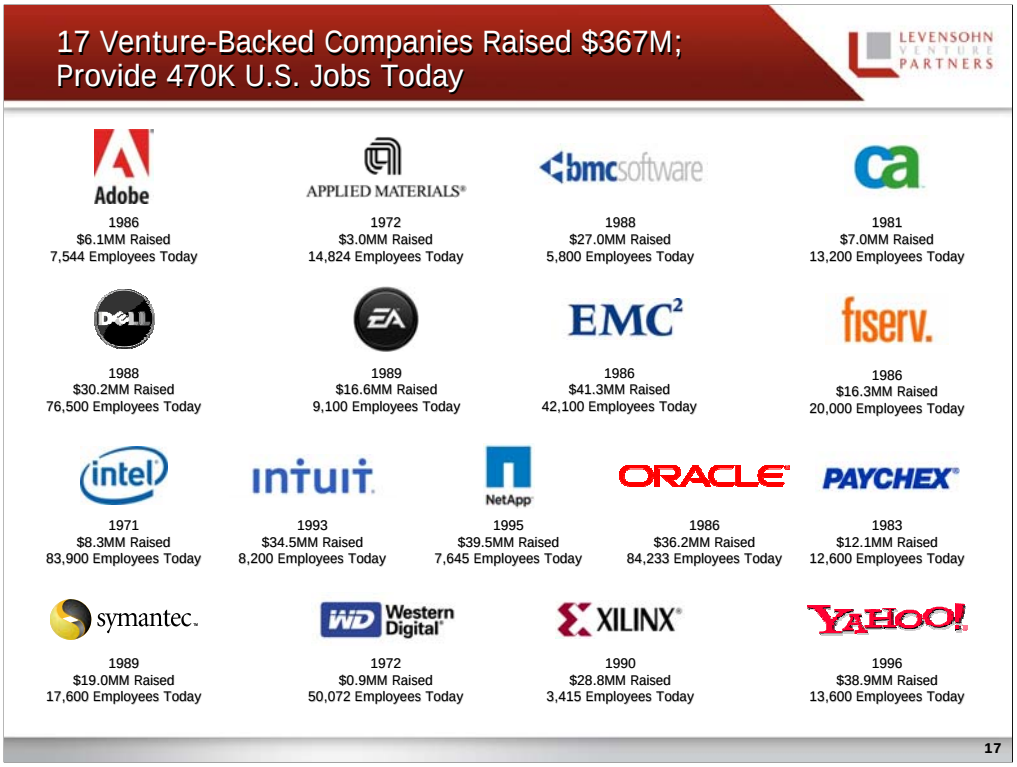


Why should you care? Because the 17 companies whose logos you see are all venture-backed companies that went public raising less than $50 million at various times between 1971 and 1996. These companies raised just $367 million in the public markets, and they account for 470,000 U.S. jobs today. Adjusted for inflation and measured in 2009 dollars, the $367mm in total dollars raised by this group equals $670mm, and only 2 of these 17 companies' IPOs (EMC $80mm and Oracle $70mm) exceed $55mm in 2009 dollars. Today these companies are household names, from Intel, to Yahoo!, to Dell, Adobe, and Symantec, from EA Sports to EMC. Let's not forget that these companies were unknown small cap growth companies when they first went public and that this impacts the entrepreneur most of all—how many companies that represent the next generation of household names will be still-born or acquired into obscurity because they cannot access the public capital markets today?

Clearly there are massive headwinds facing innovative entrepreneurs in the U.S. Add to this picture the fact that, now, more than ever, entrepreneurs can choose **not** to develop their intellectual property in the U.S., is there a future scenario when entrepreneurs may choose to opt out of the U.S. patent filing system altogether? If the US enacts a patent reform bill that chokes the small inventor, that may indeed become a future reality.

Unfortunately, especially when it comes to intellectual property, some technology companies that made their money and established near monopolies on the backs of the small inventor's intellectual property are now lined up solidly **against** innovation and **against** intellectual property protection for the small inventor.

The key obstacle to moving reform forward continues to be disagreement between several large high-tech companies, namely the group of Cisco, Microsoft, Hewlett Packard, and Intel, on the one hand, and life sciences organizations such as PhRma, BIO, MDMA, AdvaMed, Universities, several union groups, the NVCA, and others, on the other hand, over the idea of creating a new post-grant review procedure within the PTO and over the proposal on apportionment of damages in infringement cases.



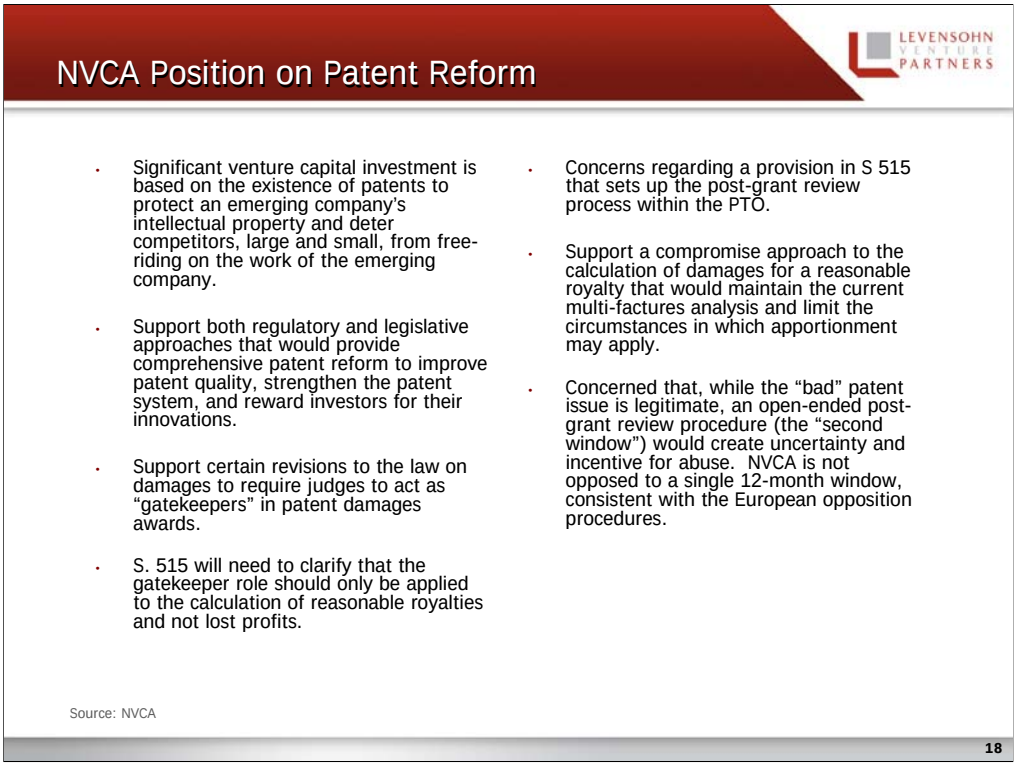
As we consider the broad implications of this polarizing issue, we must first step back and remember that inventors and investors devote time, energy and risk capital to innovate new products and technologies. Since the drafting of our country's Constitution and even well prior to the establishment of the United States, it was understood that the greater good was served with a patent system that encourages this type of risk taking by protecting inventions resulting from innovation. It is also understood, though in our country it appears to have been forgotten, that innovation, and job creation, come not just from large, well-funded enterprises, but in large part result from the efforts of small companies and individuals laboring to make a better mouse trap.

The core principles underlying the patent system have not changed. We need to encourage and reward those that take risk to innovate new products, services and technologies. Unfortunately, the patent system that served us so well for so long is under assault. The cost of filing patents has increased dramatically. The cost of enforcing patents has gone through the roof. Injunctions have been taken away except for cases of head-to-head competition in the patented item. Patents are now easier to invalidate after-the-fact. A patent holder can no longer offer his/her patents for license without putting himself/herself at risk of litigation that he/she may not be able to afford. Innovation involving patents has become a rich-man's game, with an increasingly uncertain chance of return.

At a high level, we need to understand that anything that changes our patent system creates winners and losers. In general, changes that weaken the patent system hurt inventors and innovators, while benefiting large companies with established market positions (e.g., monopolists) and low cost producers (e.g., offshore companies with lower labor costs, fixed currencies and weaker environmental standards).

Some argue for changes in the patent system based on a claim that non-practicing entities, often pejoratively called trolls, have too much power. Some extraordinary examples, such as NTP seeking an injunction that would shut down Congress' use of Blackberrys and some high dollar jury awards and settlements, have been cited by some as sufficient reason to argue for a radical restructuring of the way that patents are filed, challenged and enforced in court.

We need balance in this process, as changes may have the unintended affect of hurting those that we need now more than ever – inventors, entrepreneurs and investors that will innovate and create jobs here in the US.



Turning to specifically address the current U.S. Patent Reform debacle and the post-passage implications of Senate Bill 515, I want to explain the National Venture Capital Association's position on the current state of the bill and close with some personal comments on what it feels like being in the trenches of IP licensing and value recovery as a venture capitalist.

NVCA supports the most recent compromise reached between Senators Leahy and Sessions on the post-grant review provision. We would support S. 515 as long as the compromise on damages and post-grant review is included in the final package. We would also support a study on the first-to-file/grace period issue on the impact it could have on small businesses and agree that this issue is burdensome for small start-ups.

The debate on "first to file" versus "first to invent" and the proposed elimination of the one-year grace period after filing are good examples of the short-term thinking that plagues our country in the area of patent protection.

If the U.S. moves away from "first to invent", which, by the way, the Chinese have just embraced, and consequently changes U.S. patent law to "first to file", this will force early filing, which typically works against the small inventor. Recognizing that VC-backed companies do have resources, those who will be most adversely affected by this change are entrepreneurs who invent but do not necessarily have access to money (and these may not be the most talented entrepreneurs); the new bill also eliminates the existing one-year grace period, during which publication of an invention will not invalidate the patent. The effect of this will be to force people to file as quickly as possible after inventing something.

The sum total of these proposed changes benefit players with money (they can more readily afford to play) and those that don't want patents to impede their business (companies with entrenched market positions and companies with the lowest manufacturing costs). These are not US entrepreneurs. Large established companies benefit as well as low cost offshore manufacturers. Those that fund innovation or do the innovating in the smaller companies are the losers.

Why do we need a strong grace period? The grace period has to do with when intervening publication of an invention by a third party will invalidate the inventors patent even if he filed his patent on time and first. This is properly referred to as the 'grace period issue'. Eliminating the one-year grace period is particularly bad; I am not a big fan of provisional applications because if you do not do it properly, and adequately describe the invention, you get no protection at all.

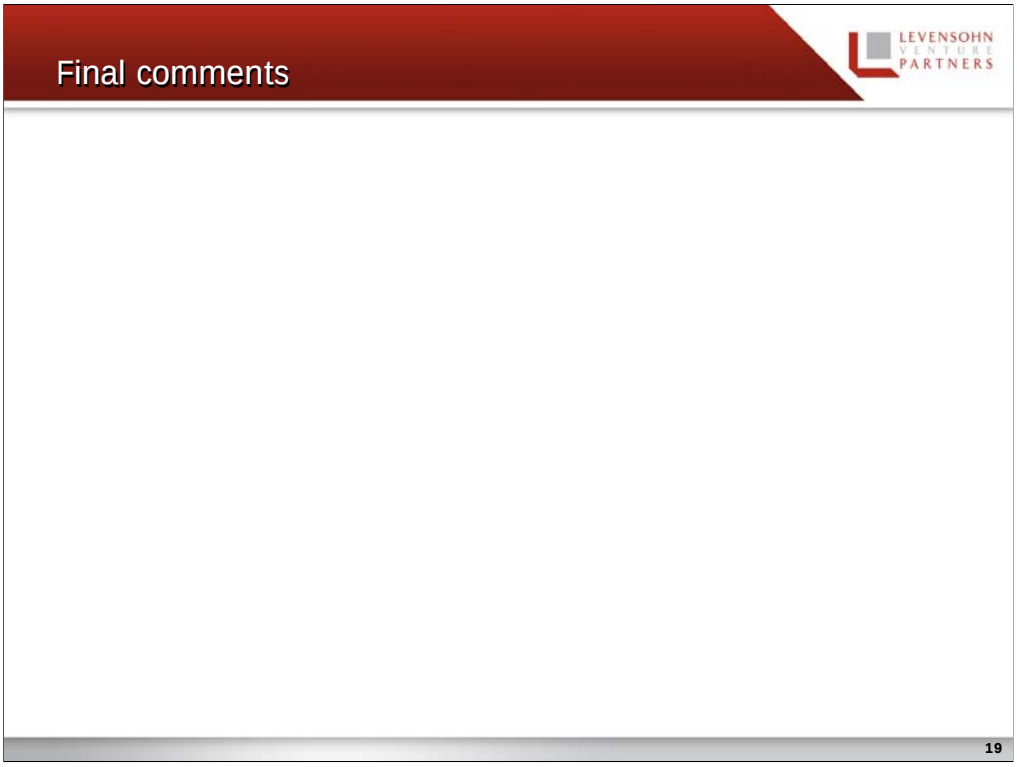
The current state of play on S. 515 is that the Senate Leadership has indicated that all major issues including apportionment of damages and post grant review need to be resolved before they will agree to bring S. 515 to the Senate floor for a vote. On February 25, Senator Leahy announced that he had reached a compromise on some of the key outstanding provisions, including post-grant review, with Senator Sessions, the Ranking Member of the Senate Judiciary Committee. NVCA supports the compromise reached and would support S. 515 as long as it included the compromises on damages and post-grant review. We would also support asking the Department of Commerce to conduct a study on the first-to-file/grace period issue and the impact has on small start-up companies.

The leaders of the House Judiciary Committee have indicated that they will not take any action on their bill until the full Senate has taken action. The House has a proven track record that they can move fairly quickly on patent reform legislation, and therefore has chosen to let the Senate take the lead this Congress.

Although Senator Leahy included compromise language on damages in the version of his bill that recently passed out of committee, companies in the high-tech coalition are seeking to undermine support for that provision.

We cannot live with a mandatory licensing system, which is the inevitable consequence of losing the damages debate or a really open-ended post-grant system, which large companies will use to bring emerging companies and entrepreneurs to their knees. The current bill also has come to reasonable compromise positions that the venture industry can support on injunctions, venue, best mode and willfulness.

While the bill isn't perfect by any means, we must go from idealism to pragmatism and move on.



In closing, I would like each of you to take a moment to consider the current reality of the risk-reward equation for innovators in the U.S. Consider venture capital as an equity proxy for institutional risk taking in intellectual property development. The ten-year returns for the venture capital industry have deteriorated precipitously in the past few quarters. As of September 30, 2008, the 10-year VC Index net return as measured by Cambridge Associates was +40.2%. As of June 30, 2009, that return had fallen to +14.3%. As of September 30, 2009, the 10-year VC Index return had fallen to 8.4%.

Over the past five years through September 30, 2009, the VC industry has returned just +4.9% compared to +2.3% for the NASDAQ Composite. This is hardly a sufficiently compelling risk/reward premium for illiquid, high risk investing to attract capital into new ventures.

Liquidity prospects in the U.S. equity capital markets for emerging growth companies are akin to a ghost town if your company's market capitalization is less than $500 million. When you consider the risks associated with starting up a new company in the United States today, you really have to ask yourself, is it worth taking these risks in order to get the reward? It isn't so easy to say "yes".

What will happen if our policymakers adopt a set of rules around the protection of intellectual property that are skewed toward large corporations and favor those who already have significant resources and therefore want to protect what they have as opposed to building something truly new? If you are going to advocate or support changes in the patent system, you must stop and seriously consider the impact that such changes will have on the risk-taking inventors, entrepreneurs and their backers, who our country needs now more than ever to be taking those risks. I believe that, in an environment that does not support the breakthrough innovator of tomorrow, entrepreneurs and their backers will increasingly choose to develop their intellectual property elsewhere, or not to take these risks at all.

The basic reality that people are motivated by carrots and not by sticks has not been lost on China, India, and other nation state competitors to the U.S ranging from Chile and Brazil to the Middle East and Singapore.

We must not continue down the path we are currently walking, which is accelerating the crisis in American innovation. Corporate R&D budgets, new university endowment commitments to venture capital, and new commitments by private investors to funding of entrepreneurs are all declining in real time. The negative ripple effect from this collectively reduced pool of risk capital is not yet evident in our economic statistics. But this developing shock wave will have a profound, inhibiting impact on the formation of new small business ventures, the engines of growth that drive job creation in America. We must act decisively now to protect the continued longevity of America's innovation leadership before we find ourselves looking in the rear view mirror, yet again, and asking, "how did this happen?"

Thank you.