



March 2, 2011

The Honorable Maria Cantwell
511 Dirksen Senate Office Building
Washington, DC 20510

**Why “First-to-Invent” Is Essential for America’s Unique Process of Invention
(Feinstein-Risch Amendment Striking “First-Inventor-to-File” from S.23 is *Critical*)**

Steve Perlman, President & CEO, Rearden, OnLive and MOVA

Dear Senator Cantwell:

I am an American inventor. I hold over 100 US patents with over 100 pending. My inventions are found in most computers and mobile devices and many TV devices sold today as well as in the production of major motion pictures with advanced visual effects, such as the latest *Harry Potter* movie.

My inventions have made extensive contributions to Washington State economic and job growth. I was a President of Microsoft after my company, WebTV, was acquired. After that, my team developed all of Microsoft’s video and television products, contributing billions to its bottom line. WebTV was able to attract venture funding and retain talent due to its patent position which, because of America’s unique “First-to-Invent” priority, allowed us to defer most of our patent filings until after we had secured funding, including investment from Microsoft, Bill Gates and Paul Allen’s Vulcan Ventures.

After Microsoft, I founded a startup that developed the pioneering Moxi Media Center, again securing funding, including investment from Vulcan Ventures, prior to filing key patents. Moxi was acquired by Paul Allen’s Washington-based Digeo, and central to Moxi’s value to Digeo was its patent portfolio.

I can state with certainty that, if the US were a “First-(Inventor)-to-File” country, as contemplated by S.23 unless the Feinstein-Risch Amendment to strike this provision prevails, neither WebTV or Moxi would have come into existence, and Microsoft would not have obtained the teams that developed its hugely successful Xbox 360 franchise among other, nor would Washington have benefited from the jobs and economic growth associated with them.

While much has been said through the four sessions of Congress the Patent Reform Act has spanned, almost all discussion has been conceptual with very few, if any, real world examples of how patents are

actually used in the US for the invention and development of the major innovations that form the backbone of US economic growth.

This letter provides real world examples of how patents are currently used in the development of actual US inventions and how, absent amendment, core provisions of S.23 would disrupt this process, particularly for startups and other small entities that are the primary drivers of innovation in the US.

In terms of further background, my inventions include QuickTime, WebTV, MOVA Contour, and OnLive, and span a wide range of fields, including video, audio, animation, special effects, 3D imaging, wireless, alternative energy, semiconductors, optics, material science, mechanical systems and medtech devices.

In addition to being Microsoft President, I have founded 8 US-based startups backed by my patents and I was a Principal Scientist of Apple. My work is found in all Macs, iPhones, iPods and iPads, most PCs, all of Microsoft's TV-based products and in many TVs, cable/satellite/IPTV set-top boxes, and video games.

My inventions have supported investment of hundreds of millions of dollars into my startups, have resulted in billions of dollars of revenue and profits, and the creation of thousands of US jobs. All of my companies have been pure "practicing entities": my patents have been used purely to back the products my companies have developed, never sold or licensed for royalties.

The Process of Invention in America Today—A Real World Example

You've likely seen movies with computer-generated (CG) faces, but it wasn't until Brad Pitt's reverse-aging face in *A Curious Case of Benjamin Button* that you saw a computer-generated face that looked completely real, winning the film an Academy Award® in Visual Effects (see attached Slide 1 showing the technology in use and the end result of Brad's computer-generated face at different ages). One of my startups invented the technology, MOVA Contour, that made this possible. The invention process we went through is uniquely American, and is the same process used for most of my inventions (as well as for inventions of Edison and the Wright brothers, among others) that literally could not be accomplished outside the US, given the patent laws of other countries. If S.23 becomes law without striking "First-Inventor-To-File", this uniquely American invention process will *cease to exist*.

To understand why, I'll walk you through Slide 2, showing the process we used to invent MOVA Contour.

A large part of invention is trying out a vast number of ideas (such as Edison with thousands of light bulb filaments, or the Wright brothers with vast numbers of wing shapes). When we set out to invent MOVA Contour, we came up with dozens of approaches to precisely capture the human face in motion and explored each of them until we ran into a dead end. Each of these initial inventions is shown as a black box on the left side of slide 2. The tan line ending from each shows how far we explored each invention. A dot shows where we hit a dead end.

In the upper left, you can see tan arrows where the 2 most promising approaches were combined and then led to 7 more secondary inventions, which unfortunately all led to dead ends. But, one of them led to a Key Insight, shown in a dashed green arrow, that led to the rethinking of another initial invention

(with a green arrow going to 5 boxes) into 5 more secondary inventions. One of these secondary inventions combined with another initial invention led to the first practical prototype, shown as a green circle with the word “Success!”.

At this point we had a working prototype that showed the basic idea worked, but not a practical product. Another 7 inventions followed for Practical Refinements, of which one led to a commercial product. For a Complete Practical System, 2 other adjunct inventions were needed (special lighting and makeup), and each of these resulted from testing several inventions, and selecting one. This entire process took about 5 years of intensely-focused R&D (this diagram shows only part of the work).

In total, about 100 inventions were conceived over the 5 years of development, but only 6 inventions were actually used in the final system, filled in green, *and those are the only inventions for which we filed patents*. The reason we did not have to file patents on the other 90+ inventions is because the US is a “First-to-Invent” country and so long as we carefully document each invention, we maintain priority to the date of conception. This gives us time to determine which inventions are needed for the product, and it also gives us time to get a working prototype before we file patents so that we have something to show when we seek venture funding to cover the cost of the filings (the US system allows a 1-year grace period after disclosure to file a patent). Lastly, by only filing patents that matter, we minimize distractions to our key engineers and scientists in working with patent attorneys.

If the US were not a “First-to-Invent” country, and instead was a “First-(Inventor)-to-File” country, then the process of invention would be completely different. To preserve defensible priority, every one of the 100 inventions would have to be filed as a patent immediately upon conception (which is why inventors throughout the world refer to “First-to-File” as “Race-to-the-patent-office”). Also, before a disclosure to investors (who rarely will sign a non-disclosure agreement) could be made, the patents would have to be filed, so venture dollars could not be used to file the patents. And lastly, the key engineers and scientists would be constantly working with patent attorneys to explain every idea they come up with as soon as it is dreamed up and have far less time to do development.

It typically costs us \$20,000-\$30,000 to obtain a commercial-grade patent. As you can imagine, in a First-to-File country, as a startup, we could only file patents on a small fraction of the inventions at the time of conception.¹ Further, in the case of MOVA Contour, the inventions that looked the most promising at the outset turned out to be dead ends. Had we filed patents on them, it would have been wasted money, while the inventions that mattered would not have been patented at all, potentially making it impossible to fund the company. It is no surprise that the US is by far the leading nation in the world when it comes to startups and, since its earliest days (when “First-to-Invent” was established), America has been known as a mecca for invention.

¹ While the US provides a type of shallow interim filing called a “Provisional”, it is a common misconception that such filings preserve priority at a lower cost. In our experience, we have always easily overcome patents based on Provisionals. They weaken the eventual patent by tying the patent to a muddy and/or vague disclosure. There is no avoiding the filing cost of an enforceable patent.

Like MOVA Contour, most of the products I've developed in my career simply could not have come into existence in a "First-to-File" country. And even with the financial resources I have at this stage of my career, it is still the case that the distraction to key engineers and scientists (myself included) in filing vast numbers of shallow and largely pointless patents would dramatically reduce our productivity in what are already intense multi-year developments, let alone further burdening the patent office.

S.23's switch from "First-to-Invent" to "First-Inventor-to-File"

In dropping "First-to-Invent", S.23 proposes the US switch to an obtuse "First-Inventor-To-File" concept which is "First-to-File" muddled with an immensely complex set of priority rules unlike any patent priority system ever used before in any country. It is far worse for small entities than conventional "First-to-File" because of the highly complex and obscure priority rules. Switching to "First-to-File" would be bad enough, as detailed above, but switching to a completely different system introduces immense complexity and risk. It does nothing to "harmonize" with other countries, and most certainly does nothing to reduce uncertainty of priority. Under "First-to-Invent" there are only about 200 "interference hearings" a year to resolve priority disputes, out of hundreds of thousands of patents filed. In short, "First-to-Invent" works exceptionally well in actual practice. Why risk changing it?

If "First-(Inventor)-To-File" is made into law, it most certainly will face constitutional challenges. The plain language of the Constitution grants patents to first inventors, *not* first filers. The issue has been analyzed extensively by Constitutional scholars, and the overwhelming consensus is that changing US law to "First-(Inventor)-to-File" is unconstitutional.

Lastly, it is important to point out that under First-to-Invent, a company with extensive resources can choose to practice First-to-File, by simply racing to the patent office as soon as every invention is conceived, eliminating any need to keep records of invention conception. Meanwhile, a company with limited resources can still utilize First-to-Invent, only filing patents that matter after funding is obtained.

Under First-(Inventor)-to-File, the reverse is not true: all parties, regardless of their resources, must adhere to "race to the patent office". This places small entities at an enormous disadvantage to large entities. Indeed, it is a key reason why no other nation has anything close to the number of startups as the US.

S.23 and the Massive Patent Backlog

The core issue facing the US patent system today is the USPTO's massive patent backlog. Innovation and new jobs are now sitting on the shelf at the USPTO

Consider a real world example: A key patent for one of my startups just issued in December of 2010. It was filed in 2002, *8 years earlier*. This patent was not even *examined* for 5 years. In the fast-moving world of high-tech, few technologies are so fundamental that they are even relevant 8 years later, and certainly it is impossible for small entities to utilize a patent for funding or closing key partnerships with such long pendencies.

While S.23 has a provision for the USPTO to increase its fees, it has no provision for the USPTO to *retain* its fees, which is the core issue. As recently as last October, Congress yet again took away the USPTO's surplus fees, leaving it yet again underfunded to address the backlog. To the extent a Manager's Amendment provision for the USPTO to retain its fees is effective, the provision should be supported. Increasing the fees absent the ability to retain them only further burdens inventors and small entities.

When patents are delayed past their product's marketable window, the patents are largely useless to small entities, despite the enormous cost associated with filing them. Many of these patents are abandoned. One of the few ways to monetize such patents is to sell them to patent aggregators (pejoratively called "patent trolls") who then may use the patents to retroactively sue companies who have introduced infringing products during the long pendency.

Despite this massive backlog, S.23 proposes to add a Post-Grant Review period after a patent issues to allow further challenges against that patent than those already allowed. Even setting aside the significant problems for small entities that Post-Grant Review introduces, given the current extraordinarily long pendencies facing small entities, we can't afford any further delay to the certainty of the enforceability of a patent. With a large percentage of my patents taking 5 to 10 years to issue, we already have had to abandon several significant products because they were unfundable without the certainty of an issued patent. Until the patent backlog is addressed (which will take years, regardless of the level of funding to the USPTO), tacking on more time for potential Post-Grant Review challenges will simply cause more products to be canceled and likely hand more patents to patent aggregators. The Manager's Amendment provisions about Post-Grant Review reflect that in the wake of the massive backlog of patents, Post-Grant Review is highly problematic. We should strike Post-Grant Review entirely until the backlog is under control and we understand the dynamics of a normally-functioning patent system. Our economy can't afford any provision that delays patent issuance and certainty until the backlog is gone.

Conclusions

1. Above all, "First-Inventor-to-File" must be stricken from the Bill, per the Feinstein-Risch Amendment.
2. A provision allowing the USPTO to actually retain its fees is essential to reduce the backlog and better attract and retain examiners. Absent such a provision, increasing fees only burdens small entities.
3. Post-Grant Review, even with the modifications of the Manager's Amendment, should be stricken from the Bill. We can't possibly know what form Post-Grant Review should take, if any, until we have a normally functioning patent system.

Absent these changes, S.23 undermines the uniquely American process of invention. It casually sweeps aside established paradigms that have successfully fueled the engine of innovation in America since its

founding, and demonstrably fuels it today. We don't want American invention to be like that of other countries. We want America to continue to be the world's mecca for invention.

Yours sincerely,

/Steve Perlman/

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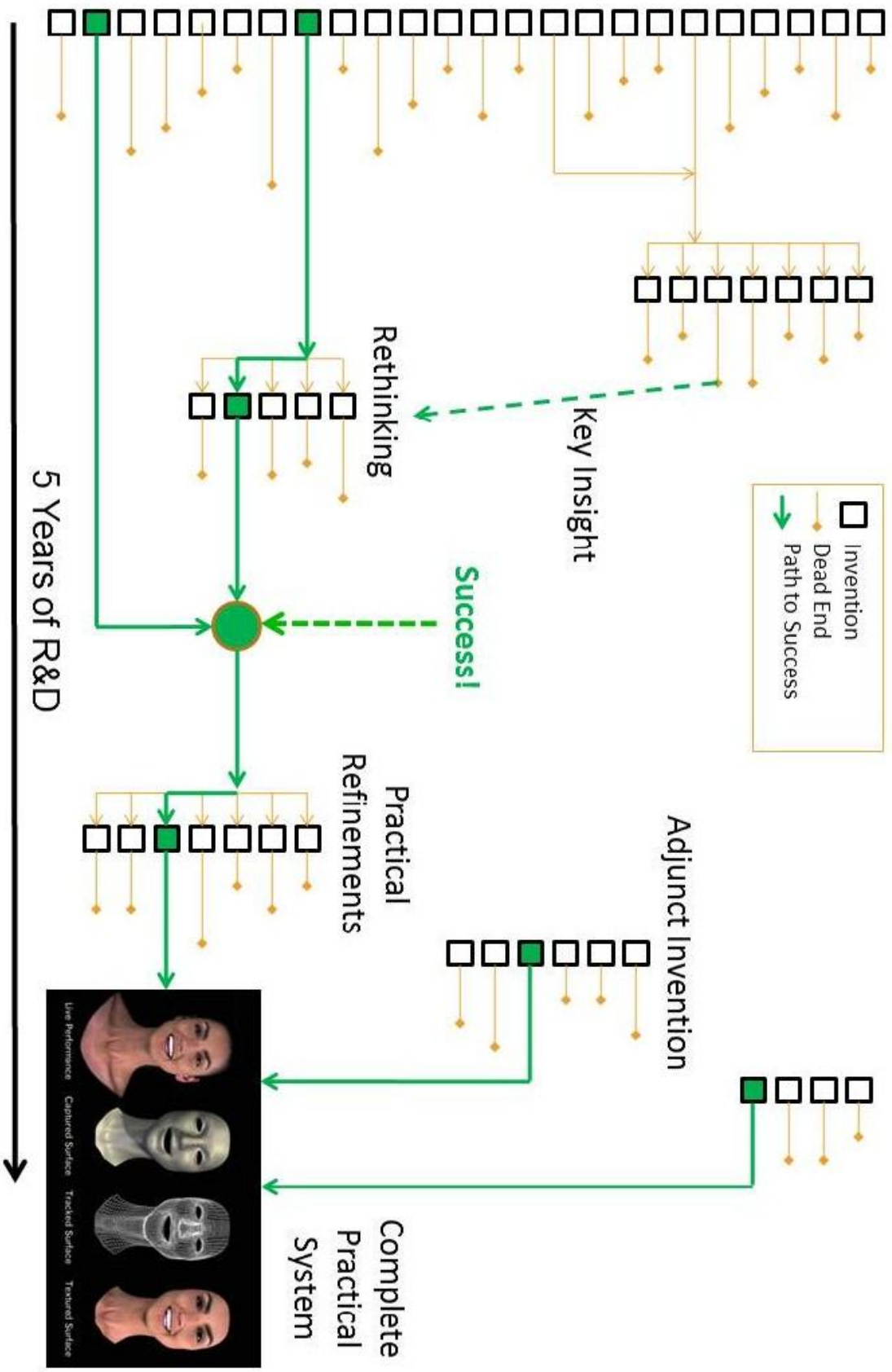


- Brad Pitt's face captured for aging effects
 - Particularly challenging to match younger Brad Pitt
- **Academy Award® for Best Visual Effects—first CG face**
 - **Also Brad Pitt nominated for Best Actor—first CG face**



The Curious Case of Benjamin Button, 2008





Slide 2