

## IPv6 and The Power of Intention: 2006 is Your Last Chance for Greenfield Leadership

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Last January I wrote an article called, "[Goals and Wishes for IPv6 in 2006: The Groundwork Must Be in Place this Year](#)." In that article I listed 10 goals for 2005, each of which was a stretch goal. I'm pleased that I was able to participate in getting three of these achieved, (#2, 4, and 7). See for yourself:

2. All federal agencies need to come up with IPv6 transition plans, and the Office of Management and Budget must mandate transition of all federal systems to IPv6 by 2011, at the latest. This will still put the US years behind Japan, Korea, and the European Union, and possibly even India and China, but it's better than no goal at all. Why must the federal government mandate IPv6? Because the federal government is still using Windows 95 and the Dept. of Defense had a mandate to use Windows 2000 until now departed DoD CIO John Stenbit changed the mandate: if there is no mandate to move to new systems, then the unwritten mandate will be to use ever older systems. The US federal government alone spends about \$100 billion on IT, out of \$1 trillion spent in the US annually for IT. Without that massive budget moving to create demand that covers 10% of the market, there will not be a critical mass large enough to get the entire IT industry moving to IPv6 products and services.

I got just what I asked for. It was a contentious issue — in the (probably) never to be published Dept. of Commerce IPv6 early draft, on page 54, under section 4.20, on, "Government's Role in Development and Deployment," it was concluded:

*"Finally, government has an important role to play as a major consumer of IPv6 products and services, but it should not mandate adoption by industry or government agencies in the United States. Private sector decisions to purchase IPv6 products and services should be market driven, without influence from federal government mandates." On page 65, the point is made bluntly: "All stakeholders agreed that a mandate for IPv6 is not appropriate at this time."*

As detailed in the [August issue of 6Sense](#), Karen S. Evans (Administrator, Office of E-Government and Information Technology) provided guidance in early August asking all federal agencies to come up with IPv6 transition plans and mandated that all federal systems start using IPv6 by 2008.

I think it's fair to say that no one has published an effective argument supporting this "IPv6 mandate is inappropriate" since the OMB guidance. The DoC document is now so far out of step with the rest of the government that, despite a Congressional request to see the new, revised document, it still has not been released. On June 29, at the end of his opening statement, Congressman Davis said, "I am looking forward to receiving the Department of Commerce's report as soon as possible, to see how IPv6 can help America's economy and help America's exports." See: <http://reform.house.gov/GovReform/Schedule/EventSingle.aspx?EventID=29305>. Why on earth would the Chairman of the Government Reform Committee not be provided with an IPv6 document from the Dept. of Commerce (which, remember, is supposed to provide information to help Americans do business) within six months of asking very nicely for it?

4. The US Congress should hold hearings to ask what America and Americans are doing to promote IPv6 (of course, other countries should do the same – if you are not American, please just replace my goals here with your own country). I have seen increasing interest from the US Congress and Senate in IPv6, primarily from staffers, but have recently had conversations about IPv6 directly with a US Senator from a state that is home to many ISPs, and he expressed keen interest in learning whether and how IPv6 would impact those ISPs. My comment is that US ISPs have the most to gain, and the most to lose, from IPv6. Part of the hearings is simply to ask people if they have a plan, and what their budgets are. I would recommend asking the Japanese and Europeans to offer their perspectives as well.

I got what I asked for here as well, in the form of the IPv6 hearings chaired by Congressman Tom Davis on June 29. The transcript of the testimony of those hearings is available on 6Sense:

<http://www.usipv6.com/6sense/2005/jul/july.htm>.

The hearing title was "To Lead or To Follow: The Next Generation Internet and the Transition to IPv6." This title was based on my April 6Sense article, "Lead, Follow, or Lose the Great Game: Why We Must Choose a US IPv6 Leader," linked here: <http://www.usipv6.com/6sense/2005/apr/03.htm>.

That hearing was a big success by every measure that I can think of, and you, as a reader of 6Sense, were a part of this. We announced the hearing in a special edition of 6Sense, and, when I went to testify, I was stunned (in a good way) to see a line of people waiting to get into the hearing room that went all the way down a very long hallway, the sort of line you would see only for a Harry Potter or Star Wars movie. There was standing room only in the hearing and, (unusually,) virtually everyone stayed from the first minute to the last. I would like to think that most of the people in the line were 6Sense readers, and, as I was the last person to testify, people stayed for the fireworks, as I made my points — that there was no free market for Internet addresses, and that federal leadership was necessary for US success with IPv6.

I was disappointed that Senator George Allen (R-VA) wasn't able to accept multiple invitations to speak at our summits, and that his point man for IPv6, Frank Cavalier, left to join VoIP leader Vonage, and that no leader comparable to Congressman Davis has emerged on the Senate side, but 2006 is a new year. Cong. Davis' efforts are all the more commendable in comparison, which is why he was awarded the first "IPv6 Innovation in Government" award for an individual at the US IPv6 Summit 2005.

*7. Consumer electronics companies need to announce when their mobile phones, game platforms, TVs, speakers, car stereos, satellite radios, iPods™, toys, DVD players, smart toilets and home networking devices, as well as the associated developers' kits, will support IPv6. And companies that announced IPv6 support for all their products, as Sony did two years ago when they claimed all their 70,000 products would be IPv6 enabled by this year, should be held accountable by the press and their customers.*

Panasonic fulfilled this goal just days after I wrote it by announcing that its webcams would not only have IPv6 support, but also have 2-way voice over IP using IPv6. Panasonic also announced that it would IPv6-enable copiers, faxes, printers, and even its Powerline networking products. I do wish that more consumer electronics companies would announce their support, but, after organizing and chairing the IPv6 Day at the recent Consumer Electronics Show, and after Panasonic was gracious enough to participate in both 2005 IPv6 Summits as well as the 2006 CES IPv6 panels with top executives, I'm comfortable that either other consumer electronics companies will announce their IPv6 support, or Panasonic will use IPv6 as a clear differentiator and eat their lunch. Either outcome is fine with me.

That leaves me with seven goals that are unfulfilled, and, if I get 10 goals, three new slots, which I will put right up front, followed by the same goals, slightly rewritten, from last year. I think that each of these goals needs a leader, and that if you are reading this in 2006, you have a chance at what I call "Greenfield Leadership," that is, the chance to take something that has no precedent for leadership success, and make your own leadership success that will set down a path for others to follow.

I would like to preface my 10 goals for IPv6 in 2006 by quoting from my essay a year ago, to reaffirm the tremendous financial value that I see in IPv6 leadership:

"I learned recently from Dr. Larry Roberts, who was the director of ARPAnet, that the US federal government spent a mere \$15 million on the project that became the Internet, with the total federal investment estimated at only about \$50 million. I find it typical of a government that is blind to the distinction between investing vs. consumption that there is actually no reliable number for what was spent on the Internet. Had such a distinction existed, it is very likely that the Internet would be the greatest Return On Investment of any project in history, and that includes the Louisiana Purchase or Alaska, given that the Internet's return was so soon, and the land acquisitions were made over two centuries ago and one century ago, respectively.

Between fiscal year 1990 and 2000 the US federal government increased its revenue from about \$1 trillion to \$2 trillion, and if the economists are right and the Internet accounted for 1/3 to 1/2 of the GDP increase, from which the federal government would get between 20 and 30% in taxes, then the \$50 million investment in IPv4 infrastructure would be worth between \$300 and \$500 billion every year! This is a million-fold return — again, every year."

Here are my goals for IPv6 in 2006:

1. **Establish a Federal IPv6 Transition Office (FITO) in Northern Virginia, preferably in**

**Congressman Tom Davis' district.** No other elected official comes close to being as deserving of this honor as Congressman Davis because no other official has exhibited leadership. FITO should be given the budget, authority, responsibility, and accountability to answer any and all questions about IPv6, and to provide support and help for any and all questions. I think that FITO will end up answering a million questions, literally, in its first year. Those are questions that no one would dare ask OMB because OMB controls the money, and people don't want to look uninformed to their funders. They want to pretend they know it all. There's no way to know it all with IPv6 — not least because IPv6 is not yet finished, and because 99.9% of the lessons with it are still to be learned. FITO can also help the dreadful compliance rate. OMB's panelist at our US IPv6 Summit estimated that, though most of the top 23 federal agencies did comply with the first IPv6 related request, about half of the remaining agencies did not. I believe it's because they didn't understand what they were asked, and that they will not understand how to do their IPv6 transitions without help.

2. **Provide a new appropriation of \$10 billion to fund the federal transition to IPv6, with \$1 billion of that for interoperability and \$1 billion for Sensornets and other information gathering and sharing environments.** I've heard that the delayed Dept. of Commerce IPv6 report states that DoC thinks the IPv6 transition will cost \$75 billion. Well, the earlier there is real funding (and \$10 million is not real funding), the earlier the US will gain economies of scale, and the more likely it will be an exporter of IPv6 products and services, rather than merely an importer of IPv6. The American public will owe a great debt to the members of Congress who initially propose an appropriation for IPv6 transition of at least \$10 billion. And don't tell me that there are so many other needs that this can't be done unless you can show me what area of government is not touched by the Internet, including science, education, trade, defense, homeland security, intelligence, etc. IPv6 is investment and a public good of the highest order, our infrastructure for the world's leading economies of the 21st Century, and, as such, deserves to be funded first, not last.
3. **Have the US Dept. of Defense share information with the rest of the federal government and with US industry and academia.** The new DoD CIO or someone else of high rank should issue a formal policy of permitting DoD personnel to accept invitations to speak on IPv6 before non-DoD groups. This would end its unwritten policy of building a firewall that keeps the rest of the US federal government from sharing and cooperating on IPv6. DoD has and will always have the greatest source of expertise on IPv6 in the US. This needs to be shared with other federal agencies in a systematic, intelligent and unselfish way so that we can get the maximum bang for the taxpayer's buck.
4. **Use IPv6 as an icebreaker and confidence building focus for a new, more inclusive Coalition Constellation.** The federal agencies that deal with other nations, especially the Depts. of Defense, State, Justice and Commerce should take advantage of the golden opportunity of collaborating with our Coalition Partners that is presented by IPv6. As hard as it may be for people who dwell in negativity about the US government to believe, I can testify that there are over 50 nations that need and want the US to have a leadership in IPv6. At the Coalition Summit for IPv6, government delegates from more than 30 nations came to meet the IPv6 leaders for the US, interested in having a common definition of IPv6-capable, common testing and certification, common timetables and synchronization of IPv6 deployment, and shared efforts to accelerate standards as IPv6 needs to be integrated with thousands of other standards and millions of products.
5. **President George W. Bush needs to give a speech expressing support for transition to IPv6.** In Japan, both of the last two prime ministers, Mori and Koizumi, gave speeches stating they were working to make their country the number one nation in Information Technology, and that leading in the Internet was essential to this goal, and that leading in IPv6 was essential to leading in the Internet. As a result of these speeches, made at the urging of Prof. Jun Murai, Japan's federal government invested \$150 million in IPv6 promotion alone. The total speeches given by President Bush, and total funds budgeted for IPv6 promotion, are both zero. Not coincidentally, the US is losing ground in virtually all relative measures with respect to the Internet, as well as mobile data and mobile networking.
6. **Highly successful IT industry executives should give speeches that include support for IPv6.** I have personally asked, face to face, a number of top tier IT execs, including Microsoft Chairman and Chief Software Architect Bill Gates, Google CEO Eric Schmidt and SUN CTO Greg Papadopoulos, if they were supportive of IPv6 (they all said yes) and if they would give a speech or otherwise champion IPv6 (they all referred me to someone else who didn't have their power). I wonder what the problem is here. Bill Gates once said, "Let's find the person who predicted the Internet and make him king." Well, I predict that IPv6 will lead to trillions of dollars of economic activity within 10 years of when it starts to take off. Isn't it a no-brainer for executives who want to be credited with seeing the future sooner to maintain their reputations as being ahead of the curve to advocate, or predict, IPv6 before it is obvious to the average person? What are they waiting for? And if not them, then what other executives can or will speak

out about IPv6? If they don't, I hope people will call them on it later when they are making billions, or trying to get trade protection from the IPv6 superpowers like Japan and China. Americans are too complacent about the fact that we are a net high technology importer. To be a net importer of IPv6 related products, though, would be a form of economic suicide, since IPv6 will be the platform for export of services.

7. **Get a report published by a reputable company or foundation or think tank that explores the promise and perils in service exports.** The US service economy is over \$9 trillion now, and has a \$60 to \$90 billion surplus, but the Dept. of Commerce statistics on service imports and exports are a joke, compared to the clarity of agricultural and manufactured good statistics, which are excellent. A broadband and IPv6 enabled service export boom is going to happen, and either America's service exports will increase tenfold over the next decade, or our service imports will increase tenfold, and probably not both. IPv6 is not just a service pack upgrade, it's as important to our commerce as having capillaries as well as arteries and veins, because it takes addressability and granularity to new levels of possibility for services, especially medicine, surveillance, security, monitoring, and remote operation, all of which will go from local to global competition in the near future.
8. **A system of recognizing exceptional IPv6 efforts (including the 6Star program) should be made available to give "extra credit" and kudos to those companies that are actually using IPv6 and promoting and supporting it.** Sure, it's necessary to sell IPv6 products and services, but new markets need champions, and I think companies that step up and help promote IPv6 should get acknowledged as leaders in 2006 for looking to 2010, rather than just resting on laurels earned five or 10 or 20 years ago, especially in information technology.
9. **IPv6 events should attract participation from key industries, including energy, automobiles, retail, white goods, transportation, and health care, which have been very conspicuous in their absence from IPv6 summits over the last six years.**
10. **IPv6 applications that uniquely use IPv6 advantages should come to market, and be made available as shareware or viral applications, starting with inclusion in mobile phones and game consoles that allow many more people to communicate many more ways with much bigger files at much higher resolution at much lower prices than ever before.**

Please feel free to send us your suggestions if you have IPv6 goals for 2006.