

Internet Discrimination: Impending Threat to Technology Growth? Part 1 of 3



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The Internet, as we have come to know it, is one of the ultimate forms of democracy and expression of free speech. However, as soon as we begin creating Ohaveso and Ohave-notso in cyberspace, we loose of some of our freedom. In Part 1 of a three-part series, telecom expert Leo Wrobel discusses the importance of maintaining Net Neutrality and how Internet users are at risk of losing some of their freedoms by nt having their voice heard when comes to developing Internet policies.

The Internet, as we have come to know it, is one of the ultimate forms of democracy and expression of free speech. Some believe the Net contains perspectives on issues that circumvent the mainstream media. For others, it is ar indispensable daily business or educational tool. For still others, it is their stæfront. Some find the worst of our society, a charnel house of hate, pornography, and violence. If there is one thing ou can say about the Internet however, it does not discriminate on the basis of race, color, creed, gender, conteit, or at times even intelligence. Every blogger has a voice and is entitled to his or her 15 minutes of fame on the lternet. To be sure, I personally car do without many of the perspectives expressed, like Elvis sightings and political mdslinging messages. Even the lunatic fringe has the right to an opinion. As soon as we begin creating Ohaveso ˆ Ohave-notso in cyberspace, we tu loose of some of our freedom. At least thatœs how I see it, and I am not alone inis opinion.

What Is ONet Neutrality?

Perhaps this is why the idea of maintaining Net Neutrality is important to me. It ould be to you, too. *Net Neutrality* generally means that all connectivity infrastructure including servers, Internet Sevice Providers (ISPs) and transmission lines must be content-agnostic, non-discriminatory, and provide the sarre level of connectivity to all its users.

Without putting it too dramatically, it appears that average Internet users stand lose some precious personal freedoms if they do not take notice of the forces trying to shape the Internet in teir own image and likeness. The average Internet user should also prepare for a fleecing from large special interest bent on creating Internet Ohaves and Ohave-notso based on ability to pæ

Critics of Net Neutrality (e.g., most major telecom carriers) argue that Oipelin capacity is limited, and unless some kind of Oincentiveo is offered to extend broadband, they may be inclined to pick ttheir chips and go home. Let me try to put my opinion of this delicately: Hogwash

At least for now, the Internet is fundamentally democratic. It does not discriminat between packets of information regardless of content or ability to pay. Will this change soon? It certainly couldf special interests have their way. The answer is not to unleash these special interests from a regulatory standpoint so thy can Ohelpo us develop tñ Internet. Look at how well that worked out for local telecommunications competitioñ Have you tried to find an AT&T or Verizon competitor lately? (For that matter, have you tried to find an independentas station? Thatœs just a conceptu cousin of the same problem.)

Bandwith OScarcity

It seems that just when things are getting exciting on the Internet, the major telæom companies (thanks to regulatory policy of the last decade, there are not that many of them any more) want to take t back to a world of artificial scarcity and bandwidth rationing. Well, let me tell you a little bit about bandwidth. Itœœap and plentiful because all the

dynamics changed more than 15 years ago. The following is a true story

In 1994, I brokered the installation of a telecom network for a \$16 billion manufacturing company. That network was 48 times the capacity of its existing DS-3 network. The cost was not 48 times what they had previously paid; it was only 1.8 times the cost. Both the manufacturer and the two local carriers that built this network profited by taking a realistic and technically based perspective on how to price. Three recalcitrant Texas public utility commissioners (they actually regulated telecommunications at that time, rather than depending on the large providers to be on their best behavior) adopted a realistic perspective in order to monitor efforts like these. As long as grandma was not paying for the corporate network through higher local service rates, people like my client got the green light. The commissioners were so impressed, in fact, that they approved the pricing of this bold new network in 24 hours. Never had anything been approved by a commission so quickly, nor has anything else since. To my knowledge, the manufacturer still operates over this network to this day.

Based in large part on this experience, in 1996, I wrote a book with my good friend Eddie M. Pope (an Austin, Texas based attorney and former regulator) entitled *Understanding Emerging Network Services, Pricing and Regulation* (Artech House Books) (see [Figure 1](#)).



[Figure 1](#)

The book hypothesized a regulatory framework for amazing new network technologies making their debut in the mid 90s. That framework envisioned honest-to-god regulators who would still protect the public well-being. It also focused on new kinds of businesses and applications that could be facilitated by those regulators as well as applications that would create jobs and national growth.

In 1999, I took the concept a step further in *The MIS and LAN Managers Guide to Advanced Telecommunications* (IEEE Books) (see [Figure 2](#)).



[Figure 2](#)

In that book, I even included a crude representation of what cloud computing might look like on page 117, using the technology already under development at the time (see [Figure 3](#)). I did not call it cloud computing per se, and it was stone knives and bear claws compared with the technology available today, but the idea is there. Let the cloud manage your Information Technology; YOU concentrate on building Chryslers. In the words of my friends here in Texas: THAT dog hunts, and the concept will sell to businesses looking at how to control IT costs, develop the cloud, provide managed services, and produce strategic advantage.



[Figure 3](#)

Clearing Away the Fallacies

So what's the point here, to sell books? No. I am not sure these are even in print anymore. The point is that I have been to this rodeo before as evidenced by the fact I have published extensively on the topic. I believe this qualifies me to chime in on the debate or at least proffer an opinion on how to best deploy emerging technology, including Internet technology. Alas, my opinion does not comport with what is circulating through Washington these days. In fact, what I see distresses me greatly: an unbridled, deregulated oligopoly of large telecom providers buying influence in Washington to advance an agenda of Internet discrimination. Let me tell you, it's all hot &

- There is no bandwidth shortage but what we make
- The major telecoms *overstate* the cost of making more bandwidth

The first fallacy being sold to Congress is that somehow bandwidth is scarce. The second is that it takes huge investments to develop more bandwidth. Both are incorrect. There is no scarcity of bandwidth. Eddie and I first pointed this out 15 years ago in our book when we pointed out the following fact:

Telecommunications capacity is like the old Doritos commercial: *OEat all you want, we'll make more*

In a world where the foundation transport technology at its most fundamental level DWDM (dense wave division multiplexing) over fiber optics, capacity issues are easily overcome, sometimes by simply adding colors to a light beam and/or turning a laser on and off faster. The days of digging up rights of way to add new pipes are truly over. So where is this big investment and the need for an incentive? If such huge capital outlays are required, why do so many third-tier countries have more advanced Internet infrastructures and speeds than the U.S.? Surely their ability to raise and dedicate capital to such projects is not greater than ours. Perhaps we need to frame the question differently. Rather than a forklift upgrade of equipment and infrastructure, ask the major carriers what the *Long Run Incremental Cost* (sometimes called *LRIC* by regulators) is of turning a laser on and off faster, or using a different color spectrum in the same existing fiber strand? Or using something already in the ground in public right of way?

Let's start with fiber. In order to upgrade fiber, it is not necessary to dig up streets and plant new fiber. It's generally only the equipment that terminates each end of the fiber that must be changed out.

OK.

And that equipment is what is so expensive, right? Well, not exactly.

When one upgrades from old SONET OC-12 to new DWDM equipment, one does not simply consign the old equipment to a dumpster. The old OC-12 equipment still has substantial after-market value. Unlike a personal computer, transport technology has a long life. This means that someone in China, India, or Africa will be happy to take it off your hands because they are just now ready economically for those SONET or SDH speeds. The new DWDM equipment will require an investment to be sure, but it is not amortized over 5 years like a PC. It is paid off over 10-15 years, a schedule typical for transport equipment. In short, the investment by the large carriers is hardly prohibitive. The cost can actually become less and less as higher and higher capacity DWDM equipment comes into service. Besides, has anyone ever deployed bandwidth that was not at least eventually used?

What about using something already there like copper? Fifteen years ago, I lectured about VDSL services that are comparable to fiber, at least for some applications and within certain distances. That day, I can make a public welfare argument about why Incumbent Local Exchange Carriers (ILECs) like AT&T and Verizon should do more in this area for potential competitors. It's not an argument they want to hear.

Consider Ed Whitacre, the former CEO of SBC, now AT&T. Ed was always fond of referring to the Internet as *Omni pipes*.¹ Closed-mindedness and O'Connell-shaped heads are quick to ignore the billions of dollars of public subsidies and incentives the telephone companies have received over the years.

Take into account rights-of-way, for example. The phone companies own less than 2 percent of the property where they have laid or strung their wires.² What do they pay to use the other 98 percent? Basically nothing relative to its real value because it's public land. Phone companies are permitted to use the public rights-of-way because, in theory, they are delivering a public service. Hence, for starters, if the major telephone companies would like to upend the public service concepts of Network Neutrality, it seems logical that they should be required to pay full price for their use of public lands.

Next, consider what lies in those right of ways. Granted, Fiber to the Home (FTTH) requires digging up a lot of yards. Digital Subscriber Line Access Modules (DSLAMs) are cheap, plentiful, and make use of a lot of existing cable investment. Instead, AT&T (under Whitacre and his successor) lobbied aggressively to get rid of copper. You see, AT&T generally has to sell copper loops to its competitors on a wholesale basis. No so with DSL services, DSLAMs, and many kinds of VoIP services. Potential competitors must pay Mr. Whitacre or now Mr. Stephenson for those services due to the monopolistic lock AT&T enjoys on them courtesy of today's Oprogressiveo regulati³

Footnotes

¹ At SBC, It's All About Scale and Scope *BusinessWeek Online*, November 7, 2005.

² Comments of Daniel Berninger, Senior Analyst at Tier1 Research, On Why Even Bells Need Net Neutrality, 6 May 2006.

³ Now what they would like to do is use my pipes free, but I ain't going to let them do that because we have spent this capital and we have to have a return on it. So there's going to have to be some mechanism for these people who use these pipes to pay for the portion they're using. Why should they be allowed to use my pipes? The Internet can't be free in that sense, because we and the cable companies have made an investment and for a Google or Yahoo! or Vonage or anybody to expect to use these pipes [for] free is nuts! - AT&T then-CEO Whitacre comments before the United States Senate Committee on Commerce, Science and Transportation, 109th Congress (2005).

Summary

Why are these questions not being asked in the hallways of Congress? Suffice it to say, I remain completely unsold by the rhetoric being echoed in state capitals and Washington these days by the special interest groups that don't need *your* input and will dictate *your* Internet.

There will probably be a few who say I am Oagainststo the special interests, or AT&T, or Verizon, or whomever. For these people, I point to the network described earlier, which I conceived, lobbied for, and built on behalf of two of the largest ILECs in the U.S. The network was built with the input (and the blessings) of state regulators pondering the same question we are still wrestling with today. OHow do we strike the right balance in telecommunications policy between growth, jobs, national competitiveness, and a fair return for all telecommunications providers large and small? The answer is not to simply deregulate the largest two or three providers.

Ultimately, that scenario will only result in an oligopoly of exactly those three providers. Those providers will control the Internet, what goes over it, how efficiently that traffic is delivered, and what people should pay for it. What's more, we are perilously close to that happening. Combine all that with the whole issue of media control and consolidation of news, programming, and content providers, and the picture really gets chilling. I will get into some of that in the next article.

In the following two articles, I will also present some alternatives that can benefit us all, and even the big guys a fair return, without a return to the monopolies of the past.

Please join me again for the next two articles and share your thoughts. That's how consensus is achieved and sound national policy is made.

See you next time.
