WHEN DISCRIMINATION IS GOOD:
ENCOURAGING BROADBAND INTERNET
INVESTMENT WITHOUT CONTENT
NEUTRALITY

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ABSTRACT

Cable television and traditional telephone companies are increasingly offering the same set of services: telephone, television, and broadband Internet access. Competition between these two types of companies would ordinarily require them to improve these services, but unless broadband providers have the ability to discriminate on the basis of content and charge Internet video providers that compete with their own video services, the growth of the Internet will be stunted, as broadband providers will not improve the capacity of their networks.

INTRODUCTION

The Internet has profoundly altered how people communicate with each other, enabling new services such as instant messaging, chat rooms, podcasts, Internet telephony and streaming video. In response to this technological innovation, the Federal Communications Commission (“FCC”) has adopted a set of policy goals and regulations that take a pro-competitive, hands-off approach to Internet regulation. Carrying out these policies, the FCC has recently exempted the two most common types of residential broadband Internet services, cable modems and Digital Subscriber Line services (DSL), from most FCC regulation.

1 J.D. Candidate, 2006, Duke University School of Law; B.S. in Applied Math (Computer Science), 1990, Carnegie Mellon University. Prior to entering law school, the author worked for 13 years in the telecommunications industry.
These decisions classify cable modem and DSL Internet services as "Information Services" and "Telecommunications Services" within the meaning of the Telecommunications Act.\(^5\) Under the Telecommunication Act, an Information Service refers generally to the ability to store, process and make information available to subscribers, while a Telecommunications Service refers to the ability to transmit information of the subscriber's choosing from place to place.\(^6\) Broadband Internet Service lies somewhere between the two definitions: while ISPs do provide services which are clearly Information Services, such as personal web pages and e-mail, they also provide the ability for subscribers to select and transmit information from websites of their own choosing. While the line between the two classifications is blurry, the FCC’s classification of broadband Internet Service has far-reaching effects since the Telecommunications Act grants the FCC the right to regulate broadly telecommunications services, but not information services.\(^7\) For example, providers of traditional local telephone service, a Telecommunication Service under the Act, are subject to a broad scheme of public disclosure, waiting periods and FCC approval for changes in rates, as well as non-discrimination.\(^8\)

Because the FCC has classified broadband Internet service as an Information Service, broadband Internet providers are exempt from those regulations that would prevent discrimination against particular Internet companies or services.\(^9\) The ISPs hope to use this exemption to charge Internet companies to carry their video content at the high speeds necessary for decent quality,\(^10\) but there is no reason why the same exemption could not be used against providers of telephone service as well.

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Naturally, this exemption concerns those companies that compete with the broadband providers which are most likely to be discriminated against. Vonage, for example, has lobbied for a policy of non-discrimination, citing to a rural telephone company’s decision to block Vonage’s telephone service that competed with its own. But, this classification has the potential to impact many Internet providers that do not compete with the broadband providers. William Smith, BellSouth’s Chief Technology Officer, has argued that his firm should be able to charge for making Yahoo.com load faster than Google.com. Even companies such as Apple and eBay, which do not compete directly with broadband providers, have raised concerns that broadband ISPs will use their control over their customers' Internet connections to impair access to Internet content. Edward Whitacre, the head of the largest telecommunications company in the country (SBC Telecommunications, soon to be renamed AT&T), has fanned these flames by asserting that Vonage, Microsoft, Google and Yahoo! should pay to connect with SBC’s broadband Internet customers.

In fact, several broadband ISPs have already used their control over their subscribers’ broadband connections to block or charge for access to various Internet services. As noted above, one rural telephone company filtered the Internet traffic on its network to block Vonage’s Internet telephone service over its DSL service until the FCC ordered it to stop.

11 Vonage provides Voice over Internet Protocol (“VoIP”) telephone services.
12 See vonage.com, Principles for an Open Broadband Future at 10 (July 6, 2003), http://www.vonage.com/media/pdf/ed_07_06_05.pdf.
14 See Roy Mark, Microsoft, eBay Join Consumers in FCC Protest, Nov. 19, 2002, http://dc.internet.com/news/article.php/1503371 (these companies are more concerned with how such fees would impact the growth of the Internet than with the effects on competition).
16 BusinessWeek Online, At SBC, It’s All About “Scale and Scope,”” Nov. 7, 2005, http://www.businessweek.com/magazine/content/05_45/b3958092.htm. One wonders what SBC’s customers are paying for, if not for the ability to connect with exactly these companies.
17 In the Matter of Madison River Comm., Docket DA 05-543, 20 FCC Red 4295 (2005), available at http://www.fcc.gov/eb/Orders/2005/DA-05-543A2.html. The consent decree pre-dated the FCC’s decision that DSL was an information service under the telecommunications act. Whether Madison River would be prevented from doing so under the new classification is unclear. See DSL Order, supra note 4.
Slightly less onerous, other providers may simply push customers away from competing services by charging their customers for access to the competing service.¹⁸

¶6 Contributing to this heated mix, Congress is currently discussing two bills that, among other things, attempt to prevent broadband ISPs from blocking potentially competing services. Senator John Ensign (R-NV) has sponsored the “Broadband Investment and Consumer Choice Act.”¹⁹ In the House of Representatives, Congressman Joe Barton (R-TX) has circulated a staff discussion draft of a bill with similar goals.²⁰ This iBrief argues that these bills are misguided because unless broadband providers are given the ability to discriminate on the basis of content and charge Internet video providers, the growth of residential Internet services will be stunted, as broadband providers will not improve the capacity of their networks. Accordingly, Congress should not adopt the neutrality requirements in these two bills in order to promote the growth of the Internet.

I. THE GROWING THREAT TO BROADBAND ISPS

¶7 Traditional telephone companies have a clear incentive for blocking Internet telephone companies: every customer who uses Internet Telephony is a customer who does not use—or pay for—traditional telephone service. In addition, the many cable television companies that sell telephone service also appear to have a vested interest in blocking Internet telephone providers.²¹ While the cable companies have stated that they “have no

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intention of blocking access to content,” they also oppose government regulations that guarantee access will remain open.22

A. The Interchangeability of Cable and Telephone Companies

8 At the lowest technical level, telephone and cable television companies perform two functions. First, they carry digital information. For the telephone company, that information has traditionally taken the form of telephone calls; for the cable company that information is increasing in the form of “digital cable”—video that is converted into the 1’s and 0’s of the digital world before being converted back into moving pictures.23 Recently the boundary between telephone companies and cable television companies has started to blur as cable television companies begin to carry telephone traffic24 and telephone companies begin to carry video.25 In addition, although both cable and telephone networks originally carried one type of digital content, either voice or video, they now carry another type of digital content: Internet service.26

9 The second common function is to serve as a source of content. For cable television companies, this is the original television signal. While telephone companies traditionally provide less of their own content than the cable TV companies do,27 all four major US providers of local telephone services have entered the video market with their own television service.28

26 See, generally, DSL Order, supra note 4.
27 Directory Assistance is an example of content provided by the telephone companies.
28 The four are Verizon, (See Marguerite Reardon, Verizon’s TV dreams, Oct. 13, 2005, http://news.com.com/Verizons+TV+dreams/2100-1034_3-5894645.html); BellSouth, (see Marguerite Reardon, BellSouth’s IPTV Strategy May Pay Off, June 10, 2005, http://news.com.com/BellSouths+IPTV+strategy+may+pay+off/2100-1034_3-
So, as a result of the invasion of each other’s markets, the cable television and telephone companies provide the same three services: telephone, television and Internet access.

B. The Internet TV Market

Just as the Internet allows independent Internet telephony providers to compete with the broadband ISPs’ telephone services, it is also beginning to enable competition in the television market. A variety of content producers already sell individual shows online. For example, NBC has announced plans to stream its nightly newscast on the Internet, Major League Baseball streams every single game, and ABC recently angered its affiliates by selling episodes of its hit television shows Lost and Desperate Housewives on iTunes. Making content available online may increasingly become necessary for show producers, because peer-to-peer networks are flooded with unauthorized copies of television shows. Viewers in other countries are often able to download pirated copies of their favorite shows before they are even broadcast in their home countries.

This trend shows no signs of slowing. Technologies such as TiVo and Slingbox show that users are no longer satisfied by the “You can watch what you want to watch when and where we say you can” model. Yahoo! envisions a world where “you are not going to have 1,000 channels, you are going to have 100,000”.


34 The Slingbox is a device that attaches to a users television system and Internet connection. The Slingbox streams video from the local television, satellite or cable onto the Internet. See http://www.slingmedia.com/ (last visited Nov. 2, 2005).

35 P2P Users Move to TV-Series Downloading?, supra note 32.
you will have an unlimited number of channels. . . . So you aren’t going to use a clicker to change channels.”

¶13 To the broadband ISPs, Internet television is potentially a huge competitive threat, as these companies have invested enormously in their networks for the purpose of selling their own television services. If their customers can obtain video from anywhere, why would they pay to get it from their local cable television company? Ironically, this competition will come across the very same wire that carries the TV signal.

¶14 The broadband ISPs do have two trump cards that they can use to keep the competition out. First, most broadband Internet providers do not provide enough capacity to handle Internet video. To carry a single High-Definition TV channel, for example, an ISP must be capable of carrying at least 7.5 Megabits of data per second (Mb/s). While the ISPs do provide higher capacities than old-style dial-up connections, they still do not typically provide enough bandwidth for good quality television. For example, Time Warner’s Road Runner service advertises 5 Mb/s.

¶15 The second trump card is that ISPs typically “oversubscribe” their networks—in other words, they sell more capacity than they are actually able to provide at a single time, assuming that only a fraction of their customers use their Internet service at any one time. For example, an ISP may sell a 5 Mb/s service to 20 customers but only have a 20 Mb/s connection to the Internet. If people start using the Internet for television service, the traffic patterns that the ISPs have relied on may no longer hold true. The net result is that by keeping available bandwidth high enough

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37 Verizon’s TV Dreams, supra note 28.
41 The Internet service would effectively be used not just when people surf the Internet, but when they watch television as well. With traditional cable television service, there is little cost to the cable company if somebody leaves the television on because the cable company is transmitting video whether their subscribers’ televisions are on or not. Because there is potentially an unlimited number of Internet video that could be offered, most of it would probably only be transmitted to a specific subscriber when his receiver is turned on. If people
for most typical uses but too low for high-quality video, the broadband ISPs can keep the competition out. This is the network equivalent of a state not improving a freeway to avoid draining traffic from a parallel toll road.

¶16 Another option available to broadband ISPs is simply to degrade their networks by allowing the networks to delay or even lose some of the data that travels on the ISPs’ networks. Normal Internet browsing is not particularly sensitive to this degradation—users do not particularly care what order the buttons show up on their webpage, as long as they are all in the right place. But, video can be very sensitive to network degradation—a few missing packets will result in graininess or blackouts. Thus, ISPs can degrade Internet video without harming their current services, making Internet television impracticable.

¶17 The key question, then, is how should broadband Internet service be regulated so as to encourage broadband ISPs to improve their Internet Services to enable Internet competition with their video services? Several proposals have been floated by various federal legislators in an attempt to prevent broadband ISPs from using their control of the Internet connection to the detriment of their video content rivals. Two of those congressional proposals are highlighted below.

generally use the television more than they use their computers, then the models used by the ISPs will necessarily break down as more people watch television at the same time. An ISP cannot easily oversubscribe its network if all of its subscribers are using it at the same time to, say, watch the Superbowl or the State of the Union Address.

42 When a chunk of data is lost by the network, the receiving computer typically asks the sender to retransmit it. On a web page, this retransmission is not an issue as it only delays the display of the page by a fraction of a second. However, in real-time communication, such as a phone call or video, the retransmitted data would arrive after the surrounding data was played. To the user, this loss results in a brief period of silence (in the case of audio loss), or a momentary freezing of the picture on the screen (in the case of video loss). See generally Dmitri Loguinov & Hayder Radha, *Retransmission Schemes for Streaming Internet Multimedia: Evaluation Model and Performance Analysis*, 32 ACM COMPUTER COMM. REV., April 2002, at 70, available at http://www.egr.msu.edu/waves/people/Radha_files/2002/ccr-02-retx.pdf (last visited Feb. 8, 2006).

II. THE CONGRESSIONAL PROPOSALS

A. The House Draft

The Energy and Commerce Committee in the U.S. House of Representatives has released draft legislation intended to “grow the U.S. economy by accelerating the deployment of new Internet services for consumers.” The draft contains language intended to prevent broadband ISPs from discriminating against content on the Internet:

[E]ach [broadband Internet transmission service] has the duty . . . to provide subscribers with access to lawful content, applications and services provided over the Internet, and not to block, impair or interfere with the offering of, access to, or the use of such content, applications, or services.

This non-discrimination duty, however, is subject to certain limitations. Specifically, a broadband provider may

[offer] service plans to subscribers that involve varied and reasonable bandwidth or network capacity limitations . . . [and may offer] premium services that require managing the capabilities of [its] network to provide enhanced quality of service to subscribers.

This language would have two significant effects. First, it would prevent broadband ISPs from specifically discriminating against services currently available on the Internet. A telephone company would not be able to block an Internet telephone service from its DSL lines. In this sense, the bill supports competition.

However, the second effect – allowing a broadband ISP to provide “enhanced quality of service to subscribers” – leaves room for a crafty ISP to harm its Internet telephony competitors. Providing “enhanced quality of service” means allowing a broadband ISP to rearrange the communications on its network: applications which need better service get that better service, which effectively degrades the service for all the other services.

The effect is akin to what happens when people are lined up at a ski lift: normally, everybody waits their turn. But, when the ski school comes in and jumps to the head of the line, everybody else has to wait. The end result is that the ski school gets ahead at the expense of everybody else. In an ISP’s network, this may mean that the traffic belonging to the ISP’s services are improved, while those of its competitors are degraded.

44 Committee Releases Draft Broadband Legislation, supra note 20.
45 House Draft Legislation, supra note 20, § 104(a).
46 Id.
¶23 Even worse, the proposal does nothing to encourage broadband ISPs to increase their available bandwidth and allow competitors to enter their networks. In fact, by requiring non-discrimination, the ISP is barred from making agreements to let in some Internet television content, while restricting access to direct competitors: non-discrimination effectively forces the ISP to choose between letting in all Internet television or none of it.

B. The Broadband Investment and Consumer Choice Act

¶24 Senator John Ensign has introduced the Broadband Investment and Consumer Choice Act, which re-writes much of the 1996 Telecommunications Act.\(^{47}\) The relevant text is as follows:

A consumer may not be denied access to any content provided over facilities used to provide broadband communications service and a broadband service provider shall not willfully and knowingly block access to such content by a subscriber, unless . . . such access is inconsistent with the terms of the service plan of such consumer including applicable bandwidth capacity or quality of service constraints.\(^{48}\)

¶25 In theory, this language provides a non-discrimination requirement by preventing an ISP from blocking Internet content, but the requirement is too easily circumvented. As long as the ISP reserves the right to block access in the terms of the subscriber’s service plan, it can block whatever content it chooses. As a result, the ISP could block not just future competing television services but also present competing telephone services.

¶26 On the other hand, consumers may actually benefit from the actual lack of neutrality. If the ISP can legally block competing television services from its network, it may be willing to increase the bandwidth of that network. Removing the neutrality requirement allows the ISP to avoid the risk that a competitor will use the ISP’s increased bandwidth to compete with it.

III. A Better Option

¶27 In order to encourage broadband ISPs to improve their networks, Congress and the FCC should adopt a policy of allowing ISPs to discriminate among new very-high bandwidth services, such as Internet


\(^{48}\) Broadband Investment and Consumer Choice Act, supra note 19, § 7(a).
television, so long as they do not do so among the lower-bandwidth services that exist today. Further, the threshold for legal discrimination should be ratcheted up regularly to prevent the broadband ISPs from establishing hegemony over high-bandwidth content.

¶28 The basic structure of the Internet has always been content-neutral: it works whether it is carrying phone calls, pictures, recipes, movies, e-mail, software, love letters or news articles. In contrast, broadband ISPs started off on specialized networks. The telephone company only carried telephone calls well: anybody who wanted to send a recipe actually had to read it out loud to the person on the other end. Similarly, the cable television network only carried video well: the same recipe transmission would involve holding the recipe card up to the camera long enough for somebody on the opposite end to copy it down.

¶29 Broadband ISPs receive substantial revenue from these specialized networks and are thus naturally reluctant to allow companies on this new content-neutral Internet to take away part of that income. Un fortunately, neither of the bills in Congress addresses this reluctance. Instead, by trying to prevent the ISPs from discriminating against any content, including that content which could affect their profits, the bills actually discourage the ISPs from investing to improve their Internet services. What motivation does an ISP have to spend money to help its competitors?

¶30 Therefore, the right solution is to encourage the ISP and the potential competitor to work together. The easiest way to accomplish this would probably be to allow the ISP to be reimbursed by the competitor. For example, consider a customer who wants to watch “All the President’s Men” but discovers that it is available at neither his neighborhood video store, nor through his cable company’s pay-per-view service. So, he pays five dollars for the movie to be streamed from the Warner Brothers website, and Warner Brothers then pays his broadband ISP fifty cents for the privilege of using the ISP’s network.

¶31 In order for this to work, the broadband ISP must be able to block the content of non-paying websites. This directly opposes the neutrality approach embodied in the two Congressional bills. However, it would be unwise to condone the ISP’s right to block all types of content. The reimbursement is intended to entice the ISP to improve its network and increase the available bandwidth, not just to provide it with a new revenue source. Since broadband ISPs already have the capacity to handle lower-bandwidth services, such as Internet telephony, allowing a broadband ISP to

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be reimbursed by competitors who can fit on the ISP’s existing network would do nothing to encourage the ISP to improve its networks.

¶32 Any regulation should slowly over time raise the bandwidth level, above which ISPs may charge for carriage. In the long term, granting a duopoly to the two main broadband ISPs in an area (the local telephone and cable television companies) would harm consumers by limiting the programming that they chose. After all, one of the core benefits of the Internet is that for a tiny fee, anybody can post their own content and sometimes impact the world in ways that would have been impossible without the Internet. 

50 Allowing ISPs to charge content creators for carrying their Internet video content would effectively choke off individuals who want to post their own video content. In the short term, however, broadband ISPs may not deploy high bandwidth networks without the ability to choke off competing video content. The solution is to allow the ISPs to charge for carriage in the short-term, but wean them off of these charges in the long-run.

CONCLUSION

¶33 Today’s broadband ISPs are in a peculiar situation. That is, segments of their business potentially compete with each other. High-bandwidth Internet services create a footpath to their customers’ houses that the ISPs’ competitors can use. Naturally, the ISPs are reluctant to make the footpath any wider, else additional competitors beat the ISPs to their customers’ houses.

¶34 Current proposals in Congress would force the ISPs to allow all their competitors on that path. However, this policy actually harms customers by keeping the ISP from widening the footpath into a road or a highway. Instead, the ISPs should be allowed to widen the footpath, put down some concrete, and then charge a toll to any of its competitors that want to use the new road. But once the tolls have paid for the road, the toll booths should come down.

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50 For example, the first reporting of President Clinton's affair with Monica Lewinsky appeared on the Drudge Report, a one-person Internet website. See Matt Drudge, Newsweek Kills Story on White House Intern, Jan 17, 1998, http://www.drudgereport.com/ml.htm.