MUG Monitor Extra!

Macon Users Group—Serving Southwestern North Carolina and Northeastern Georgia

www.maconusersgroup.org **September 2007**

What is Net Neutrality? – An Editorial

by Bruce Jacobs, Editor, Phoenix PCUG, AZ, www.phoenixpcug.org

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Usually the articles in the newsletter are very black and white. The articles tell how to do something, or why you should backup… This article deals with a subject that is more controversial than that. It is my attempt to explain a subject is complex and which I can not discuss without my opinions coming into it. My opinions do not necessarily represent the opinions of the user group.

So what is Net Neutrality? In simplest terms it is a movement which has as a goal creating legislation or federal regulations which will regulate some plans of some ISPs.

The specific plans that are proposed that have people the most upset is the idea of charging websites for preferred access to their customers. For example, they would like to get money from Google and if they do not they may slow the connection between you and Google.

I have to give some history here to explain some of what is going on. The Internet was mostly free of regulations. You can put almost anything up on a site and people could access it or they can ignore it. Your ISP is paid to give you access to the internet and does not care what you do while online unless you share your connection with your neighbors. There was no spam and very very few internet viruses.

ISPs also "oversold" their connections; they knew that everyone would not try to get online at the same time so they used formulas to determine how much infrastructure they would need for each customer. In the old days this was mostly how many phone lines they needed for each customer. (How many remember getting busy signals when dialing in?) Even today, when browsing the web, typically you go to a site, and its contents are downloaded to your computer. Then the computer becomes mostly idle while you read the page.

Most of the original ISPs were companies that had as their primary business providing access to the internet. They were not phone and entertainment providers like we have today. Also there was no real conflict of interest if they were owned by a phone company.

Things have changed over time. As dedicated lines became available, the ISPs started to separate the customers into two classes: Business and Home users. Business customers were likely to use their connection 24 hours a day and use more bandwidth. The business customers were charged more for access because of this. They at first policed this mainly using the honor system. In some rare cases, they would cut a violator off.

We now have lots of malware on the internet. This malware has caused lots of problems for the ISPs. Frequently a customer's computer would get infected and would attack the computers belonging to other customers of the ISP. Computers would get infected and start sending out millions of spam emails. Or the infected computer would turn itself into a webserver to host pirated music or other nasty content. One partial solution to these problems was to use filters at the ISP to block this traffic. This was a necessary evil in my opinion.

Some people also are considered by the ISP to have abused the network. All of the above things that computers can do because they are infected have been done by customers on purpose. There are other things customers have done which have resulted in a single customer using more resources that the average customer. Sometimes these uses are not considered legitimate by the ISP.

Many ISPs have set up limits on how much bandwidth a customer can use in a month. I frequently download software from the internet. Legal downloads like Linux CDs and trial software. Because of this, I am sure that I frequently use several times the average amount of bandwidth of the average user.

Perhaps I need to step back for a second and describe some of the costs of business that ISPs have. They have the typical costs of doing business: buildings, labor, taxes, electricity, etc. They also have special costs that are almost unique to ISPs. They pay for the infrastructure that connects them to their customers (sometimes it is indirectly). The faster the connection

*(see **Neutrality #1** on page 7)*

Net Neutrality: It's Time For Us To Speak Out!

by Linda Gonse, Editor, Orange County IBM PC Users' Group, CA, www.orcopug.org

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What is 'Net Neutrality?
Briefly, "Net Neutrality" is the guiding principle that preserves the free and open internet. "It means no discrimination. Net Neutrality prevents internet providers from speeding up or slowing down web content based on its source, ownership or destination," according to savetheinternet.com.

"Net Neutrality is the reason why the internet has driven economic innovation, democratic participation, and free speech online. It protects the consumer's right to use any equipment, content, application or service on a non-discriminatory basis without interference from the network provider. With Net Neutrality, the network's only job is to move data—not choose which data to privilege with higher quality service."

Why is Net Neutrality an issue?
It's an issue because it involves the transmission of data over broadband networks (e.g., DSL or cable internet services). As the number of sites on the internet continues to grow, and the quality of data becomes more sophisticated—encompassing video and audio files and other multimedia applications—broadband service providers (generally cable and phone companies) are seeking to regulate how material flows to users through their increasingly taxed networks. For most large providers, this has come down to one general desire: They could establish a tiered system of content delivery in which companies with data-heavy content can pay a fee to the providers in return for "special treatment" in transmission. *However, advocates project, this also would allow large telecom companies to block or censor things they don't like without consequence.*

Moreover, colleges worry that research and distance education could be left behind if broadband companies are allowed to favor certain content. (The implications go far beyond open access.) The internet-for-hire has profound implications for education, library and publishing services in general. And, for users, there is either a future of poor service or additional costs, or some combination of the two. Low and fixed income internet users would lose their access equality.

What is being done to preserve Net Neutrality?
In a nutshell, nothing permanent has been done to pass a law to ensure freedom of the internet. It is still a gigantic struggle of ordinary internet users, educational institutions, online companies—such as Amazon and Google—non-profit companies and others, against the massive lobbying efforts of the largest telecommunication companies.

Events that have unfolded since Net Neutrality became a significant issue include:

"This past summer (2006), Congress took up the issue. Following a huge lobbying campaign by both sides, including millions spent by the cable and phone corporations, the House voted down an amendment to the Act that would have made the Federal Communications Commission responsible for enforcing neutrality. In the Senate, a similar amendment was defeated in committee, but net neutrality legislators managed to table a vote on the telecommunications bill indefinitely in hopes that they can somehow force the issue back to the forefront," Bill Moyers, a respected news commentator and journalist, said on the PBS site at tinyurl.com/yhx7lz.

In January of this year, a bill was introduced by Senators Olympia Snowe and Byron Dorgan to amend the Communications Act of 1934, which will ensure all content is treated equally and fairly on the internet. The law also requires providers to offer consumers broadband internet access that is not bundled with other services like phone, cable or VoIP. The title of their bill is the internet Freedom Preservation Act.

In March, the discussion over internet governance continued on Capitol Hill. All five FCC commissioners testified in front of the House Subcommittee on Telecommunications and the internet.

In May, the bill passed the House Judiciary Committee: 20-13.

In a June 2007 report, the Federal Trade Commission urged restraint with respect to the new regulations proposed by network neutrality advocates, noting the "broadband industry is a relatively young and evolving one," and given no "significant market failure or demonstrated consumer harm from conduct by broadband providers," such regulations "may well have adverse effects on consumer welfare, despite the good intentions of their proponents."

*(see **Neutrality #2** on page 8)*

Automobile Computers

by Bob Elgines, Editor, Colorado River Computer Club, AZ, www.ccrc.org

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Is your Engine Check light on? Do you need a smog test? Is your engine running rough? Is your transmission shifting improperly? Did you know you can read your automobile computer results with a simple plug in device?

All autos from 1996 and newer have common plugs and codes mandated by the Federal Government. Some late 1995 models are also equipped with this type of computer and will have on the label under the hood "OBD II" listed. Prior to 1995, some Engine Check Lights in the car were on timers or mileage meters, and would come on after 50,000 miles and really had nothing to do with the operation of the engine or computer.

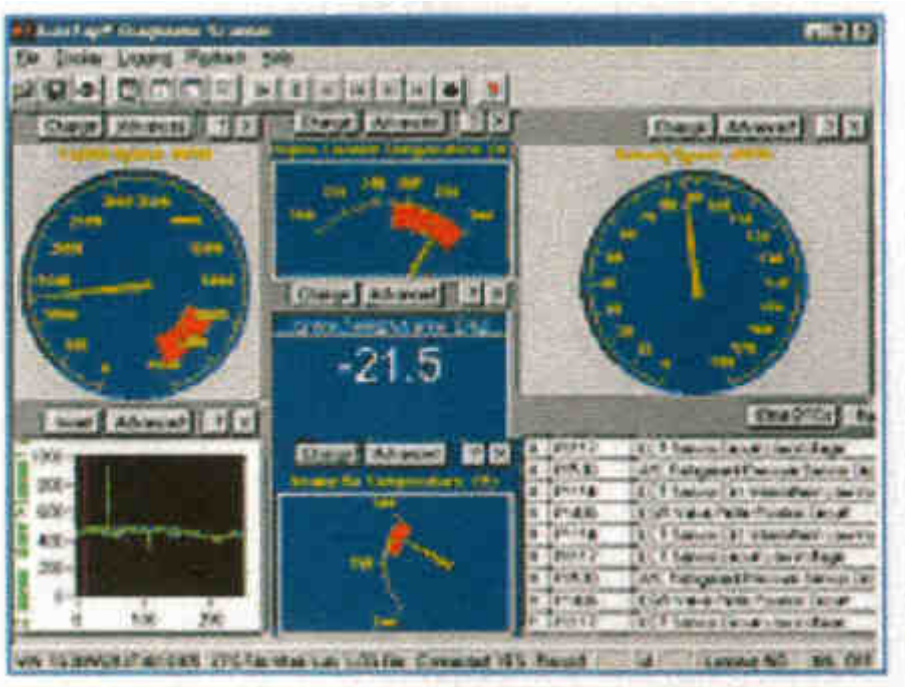
"OBD II" is the model of your Powertrain Control Module (PCM)—terminology for the on-board automobile computer that controls the engine and drive train. Some automobile models will use more sensors and controlling devices than others. There are Continuous Monitors, such as Misfire, Fuel System, and Comprehensive Components, and Non-Continuous Monitors, such as EGR System, O2 Sensors, Catalyst, Evap System, Secondary Air, and A/C Systems.

New car dealers charge you $100 to plug their reader in—called a diagnostic test—and guess at what to replace. An example is that EVAP codes can appear for several things such as leaky hoses, gas cap, EVAP solenoid, EVAP pump, etc. All these have to do with the evaporation of fuel from your gas tank. They will replace them one at a time charging you labor and diagnostic charges for each item. That can be $200 plus parts for each replacement.

Simple code readers start at $40 at Harbor Freight. The next model up costs $80 to $90 and the difference is more readings, memory and allows updates via the web (there have not been any updates since 1999). Top models will cost $200 to $250, but allow you to plug the results into your computer via a USB connector giving you much more information and possibly allowing some adjustments.

Most Data Link Connectors (16 pin) are under the dash, just left of the steering wheel. Below-right is a basic definition of how to understand the codes that you will read. There are at this time 7000 different codes with several being for diesel engines only. You have generic codes and special manufacturers codes.

Below is an example of a readout on a PC of the more expensive model readers.



Help! My Vinyl is melting...really!

by Lou Torraca, President MOAA Computer User Group, HI, www.the-tug.org

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If you have the same problem as I do, read on, a solution is available. I have hundreds, yup, hundreds of vinyl records, 78s, 33s, and even a few 45s stashed in my garage which is a pretty hot spot (no, not a WiFi hotspot) a really hot spot. I've thought about converting them to cassettes (yes, I know, that was a long time ago), then to CDs and now to DVDs. I just attended a techie conference, and one of the many presentations was on this very subject, so I paid lots of attention and took notes. The presenter also talked about how to convert other media, e.g., VHS tapes, but I'll save that for another column.

OK, just to be sure we are all on the same page…this is a 78 vinyl record

and next, this is a bunch of 45s,

and finally, some 33s which usually were what came in albums.

Now that we are on the same page, how do you convert all this to a CD or a DVD? Here is a step-by-step tutorial with some examples of equipment and software, as well as some URLs which you may want to take a look at.

This tutorial is designed to provide a few tips to help you get the music from your turntable to computer and ready for burning to CD. It doesn't cover the complex area of audio restoration in which software is used to clean up noisy records. Not to worry…I'll point you in the right direction at the end of the tutorial.

Equipment needed

The following equipment will be needed to produce a signal capable of driving a typical computer sound card.

- A turntable fitted with a good quality cartridge and stylus. This is one I found via Google for $99.

- A Pre-Amplifier with RIAA equalization as well as a front panel. This one costs only $35.

However, if you have lots of dough, you can get one for $1800! Does look nice (see next page), but I can't say whether it does that much better than the small one above.

- Interconnecting cables

Turntable Cartridge

The turntable must be positioned on a solid level surface. The cartridge should be adjusted near the maximum recommended playing weight and the anti-skating adjustment checked. For best results, use a magnetic-type cartridge. If you change cartridge type make sure the cartridge matches the arm type. Crystal/ceramic cartridges are not recommended.

Stylus Care

Carefully clean the stylus before playing each side of a record. Always clean from the back of the stylus to the front and use some alcohol if necessary.

*(see **Vinyl** on page 5)*

*(**Vinyl**—continued from page 4)*

Your stylus should be regularly checked for wear, as a worn stylus will permanently damage your records. A worn stylus should be replaced.

Record Cleaning

Vinyl records must be as clean as possible so that surface dust does not build up on the stylus. Always use a fine fiber brush to remove dust before each playing. If playing the record reveals high levels of background noise, or if the stylus becomes repeatedly clogged with dirt after playing, you may need to take additional steps. You could use a mixture of alcohol and distilled water to remove dust and dirt which is deep in the record grooves.

Pre-Amplifier

A pre-amplifier must be used to amplify the low level signal from the pickup to a suitable level for your computer's soundcard. The pre-amplifier must provide RIAA equalization in order to ensure proper frequency response from the record.

Your system may integrate the pre- and power amplifiers into a single unit. In this case, it may be possible to utilize the tape output to send the signal to the sound card.

If your pre-amplifier has an adjustable output level, use it to ensure that the signal to the sound card is not too high. If the output level is fixed, then use the gain control in the Windows mixer applet.

Interconnecting Equipment

Most sound cards come with a 3.5mm jack as the line input connector. However, most hi-fi equipment uses either phono or DIN connectors. You will therefore need to fabricate or purchase a connecting lead which converts between the two connector types. Make sure that all connectors are of good quality and that they all are seated correctly. Poorly fitting connectors can produce unwanted noise or hum.

Play The Record

Once you have all of the component equipment set up, the next step is to play the record and save a digital copy on your computer. It is best to record one entire side of an album at a time. You will end up with two large digital files—one for each side of the album. Your software should allow you to separate the music tracks prior to copying to CD.

Test Recordings

Make a test recording to your hard disk, to verify that the sound card is not being driven too hard and causing distortion. Listen carefully for hum during silent passages between song cuts. It is a good idea to actually burn a CD in order to verify that all is well. For example, this will help ensure that your left and right channels are not reversed.

Setting the Recording Level

It is important that the analog signal is presented at appropriate amplitude if optimum results are to be achieved. You don't want too low or too high a recording volume. Sound recording software will provide a recording level meter which monitors the signal at the A/D converter input.

Adjust the sound level so that the loudest sections peak in the -3 to 0 areas of the bar graphs. However, some soundcards will distort at levels somewhat below this. In such cases, it is best to record at a lower level and then to digitally adjust the level after recording (normalizing). If your pre-amplifier has an output level control, use this to adjust recording levels. In this case, set the applet control to maximum and adjust the recording level using the control on your pre-amplifier.

The Windows applet is located at Start/All Programs/Accessories/ Entertainment/Volume Control. Select Options/Properties and then "Adjust Volume For - Recording". Make sure that the "Line" check box is checked. This will enable a volume control for the soundcard Line Input. Now check the "select" check box under the "Line" volume slider. If necessary, you can use the slider to set the recording level.

Next, open your recording program and adjust the recording level using the program's level meters.

Vinyl Record Audio Restoration

Once you have successfully transferred recorded music from turntable to computer, you will probably want to use an audio restoration program to clean up the sound. Most old vinyl records will have a certain amount of surface damage which will affect the sound. During playback, you may hear some surface noise and a number of clicks and pops. Particularly annoying are the repeating clicks which occur when the damage has spanned several adjacent record grooves and which consequently repeat once per revolution of the record.

Audio restoration software uses digital filters to help remove the unwanted noise. The one that all the "gurus" seem to like is Audacity, and the good news is it's free! Here's where to get it: audacity.sourceforge.net

$1800 Pre-Amp

*(see **Vinyl** on page 6)*

*(**Vinyl**—continued from page 5)*

Burning

Once you have recorded all the required tracks from an LP and removed any clicks, pops, scratches or whatever, it is a straightforward task to write the tracks onto a blank CD/DVD using your CD/DVD writing software.

First decide if you want an audio CD/DVD or would rather make up an MP3 disc. A normal CD should play in any domestic player, but an MP3 CD needs a player that can cope with this format. They are now more widely available than previously; most domestic DVD players, some in-car CD players, and some personal CD players will play MP3 discs. The big advantage with MP3 format is that of capacity. A normal audio disc can hold, say, 20 tracks of average length (80 minutes or thereabouts), while an MP3 format disc can hold between 10 and 20 albums!! This is done using data compression techniques which result in much reduced file sizes with very little lost sound quality.

Once you have decided between the two formats, you can use your CD/DVD writing software to assemble a collection of audio tracks to be burned to CD/DVD. Don't forget to separate the tracks before burning.

Now for a few other options for the technically challenged (me included) and for the fiscally unlimited (more dough than you know what to do with.)

For the first category, an all-in-one like TEAC makes may be for you. For a bit more than $400, depending on shipping, this little gem will do most of the work for you and of course, for those with no equipment such as a turntable, it provides one. Check it out at: tinyurl.com/22x2jy

For the second category, here's where you can go to have all the work done for you…at a price of course! tinyurl.com/34w8oj

By the way, I'd suggest you check the Net for other possibilities, as there are lots of places that feature both hardware and software for just this purpose. One of them is www.dak.com.

That's it for now. Remember, be safe out there on the Net, but have fun with all the consumer electronics goodies. Aloha, Lou

TEAC All-In-One

Why Update your Computer?

by Kathy Jacobs, President, Phoenix PCUG, AZ.
www.phoenixpcug.org

For Christmas this year, we gave my father a piece of software that requires Windows XP SP2. Imagine my surprise when he emailed back that he didn't have SP2. Besides getting him a copy of SP2, I found out that I would need to explain to him why he needed it. I thought some of you might benefit from the information as well.

Like many computer users, my father views his computer as something that he should just be able to use. He doesn't think he should have to put any time into maintenance of the computer. I hear this quite frequently, but don't understand it. Would you buy a car and never put gas in it or never change the oil in it? Computer maintenance is just like the maintenance of your car.

The first line of maintenance for your computer should be Microsoft Update or Windows Update. Security holes are being patched every month. Those patches are made available to you for free from Microsoft for your benefit and for mine. Mine? Yes mine. If you don't keep the security holes on your machine patched, then you make it easier for someone to use your machine to attack my computer—even if I am patched. Also when I send you an email, the programs can harvest my email address and add it to lists so that I get more spam.

The second line of defense is a good anti-virus program. Again, you can't just buy it and expect it to run forever. You need to update it regularly, and run it regularly. If you don't have your anti-virus up to date, you will only be catching the viruses that were out when you bought the program. That means that any virus that has come out since you bought the package can still sit on your computer and attack from there.

The third line of defense is anti-spyware software. This software will prevent someone from coming in and "owning" your computer. What do I mean by owning? Spyware programs are frequently used to keep track of what you do on your computer. A common misconception is that anti-spyware is only needed when you are on the net. In reality, spyware can be installed in seconds while you are downloading your email and then it will run while you are offline. When you get online again, the spyware will call home and send back everything it has learned about your machine.

The final line of defense is your firewall. If you have Windows XP SP2, you have a firewall installed. By installing and activating your firewall, you make yourself less visible to the bad guys out on the web. If they can't see you, they may not spend the time to come find you. Especially if your neighbor has an open, unpatched, unprotected system. Adding the protection of an outbound firewall to Windows can also help plug leaks and alert you to behavior by friendly programs that you may still want to control.

The way I look at these four lines of defense is the same way I would if a bear is after me. I can't outrun the bear. What I can do is make it less likely that the bear will come after me. That is the same attitude I want you to take: Make your computer less open to the bears coming after it.

*(**Neutrality #1**—continued from page 1)*

to the customer, the more it costs the ISP. Frequently in the United States, the hands of the ISP are tied and the ISP can not easily increase the connection speed between them and the customer.

The ISPs also pay for their connection to the internet backbone. This is the part of the internet that connects all the ISPs together. The cost of this access is based in large part on the amount of data they send over the backbone and how fast a connection to the backbone they have.

Companies like Google have to make contracts with ISPs and pay for their bandwidth and connection to the backbone either directly or indirectly as well.

Another revolution is occurring on the internet. This is the media revolution. New services are coming to the internet, which are only possible because more and more users have high speed access. I can purchase music or other content online and download it to my computer. I can listen to an internet radio broadcast of a basketball game. I can watch a movie from YouTube or a live broadcast of an event. People are also using their high speed connections to make free phone calls using services like Skype.

According to ISPs these activities are putting stress on their networks in ways they had not planned for.

Many ISPs would like to use the filtering tools they have in place to limit the speed of access to these services. Critics of these plans point out that the ISPs have been advertising these same services to the public for years as a way of driving customers to their high speed access plans. Whether this is legitimate or not is a matter of opinion. If these types of changes are made, customers should be made aware of them so that they can make informed decisions

*(see **Neutrality #1** on page 8)*

*(**Neutrality #1**—continued from page 7)*
when deciding which ISP to sign up with and what plan they want.

Another change that has occurred is the ISPs have changed from a business point of view. In today's world, ISPs are not generally small companies that only provide internet access. They are phone companies, cable companies, cellular, and entertainment companies. Access to free phone service, movies and music is in direct conflict with the interests of the parent companies.

The ISPs would like the right to discriminate against some of this traffic and let other traffic go through unimpeded. This would probably be something like having two lanes of traffic. A fast lane for approved traffic, and a slower lane for the rest. If you have made it this far, you can understand some of my opinions on these issues. You may not agree with them but the background was needed so you could understand.

I believe that ISPs have some right to regulate the traffic that is going through their network as long the primary purposes is to ensure that the network stays usable and they are upfront about what they are doing to everyone involved. There is currently no law on the books that I am aware of that makes this a requirement.

However, no one should have to pay an ISP for priority access to their customers. I pay GoDaddy every month for use of a server and access to the internet based in large part on how many people visit our sites. We should not have to start sending checks to ISPs as well. Because the web is so democratic and diverse is what makes it as great as it is. If the ISPs are allowed to do this in markets where they provide service, they will not be able to do this with fairness.

*(**Neutrality #2**—continued from page 2)*
We've already had a taste of what can happen if telecommunications companies are handed authority to create tiered service and to have authority over what users can access. Before any decisions have been made, AT&T censored lyrics critical of Bush twice this month during Pearl Jam webcast concerts! (tinyurl.com/2gqv4n) This foreshadows what we can expect if Net Neutrality is not made into law permanently.

Pearl Jam appears to feel the same way. "AT&T's actions strike at the heart of the public's concerns over the power that corporations have when it comes to determining what the public sees and hears through communications media," they said.

Bill Moyers provides background and details on the subject at tinyurl.com/hfyb3. A video segment from *Moyers on America* PBS show, titled "The Net at Risk," illustrates the remarkable, but unlikely, cross-section of allies on the issue at tinyurl.com/yuylej. There are also links to several articles and videos on the main page of our website: www.orcopug.org.

What can you do to support Net Neutrality?

Internet Neutrality advocates are pushing for people to sign an online petition. One of them is at action.freepress.net/campaign/savethenet. The petition says: "Congress must preserve a free and open internet. Please vote for enforceable network neutrality and keep tollbooths, gatekeepers, and discrimination off my internet."

California Senators Boxer and Feinstein do not accept email from constituents sent through third-party sites. So people should email legislators directly, in addition to adding another name to the online petition so the numbers can be used for clout by SaveTheInternet.com, FreePress.com and OpenInternetCoalition.com, who support the legislation. Boxer and Feinstein are already "believers" but it helps to let them know that the base on this issue is widespread.

The SaveTheInternet.com Coalition is more than a million everyday people who have banded together with thousands of non-profit organizations, businesses and bloggers to protect internet freedom. The Free Press is a national, nonpartisan organization working to reform the media. Through education, organizing and advocacy, it promotes diverse and independent media ownership, strong public media, and universal access to communications. The OpenInternet-Coalition represents consumers, grassroots organizations, and businesses working in pursuit of keeping the internet fast, open and accessible to all Americans.

You can find contact information for legislators throughout the U.S. at: www.congress.org/congressorg/home/. People can read Google's Guide to Net Neutrality for Google Users at www.google.com/help/netneutrality.html, and they can also sign up to receive updates about Net Neutrality from one of the sites supporting this legislation, such as www.savetheinternet.com.

Once people understand the issue of Net Neutrality, supporters should inform others about the threat to this essential freedom, and encourage their involvement.

Finally, people who believe in an open internet need to be aware that organized supporters fighting big telecommunications businesses need money to continue and to win the fight that affects us all: tinyurl.com/23qp2k—even small donations will help this cause.