

**Before The  
Federal Communications Commission  
Washington, DC 20554**

**In the matter of** )  
)  
**Appropriate Framework for Broadband** ) **CC Docket 02-33**  
**Access to the Internet over Wireline** )  
**Facilities** )  
)

**Comments of Konrad Roeder**

I am a Consulting Systems Engineer with interests in unlicensed Radio Local Area Networks, specifically in unlicensed bands such as the 900Mhz and 2.4Ghz ISM and 5Ghz UNII band. I am currently working on a project with School District 20 in Colorado Springs to provide wireless access to the LAN in every school in the district. I am also a hobbyist active in a 'Freenetwork' in Colorado called Mile High Wireless.

I would like to comment on section IV - UNIVERSAL SERVICE OBLIGATIONS OF ALL PROVIDERS OF BROADBAND INTERNET ACCESS. Specifically, I object to what essentially amounts to an unfair Internet access tax, extending universal service contribution obligations to all non-wireline service providers (cable and wireless internet service providers).

**Background**

Universal service has historically been based on the assumption that consumers use a wireline network owned by a service provider - e.g. LEC, ILEC, CLEC, ISP. Universal Service was created to subsidize disadvantaged users and assure that all Americans would have access to telecommunication services. It's stated purpose was to level the playing field.

However, since these wireline service providers are not adequately been able to provide for broadband services through wired services, this has given rise to new broadband cable and wireless services in the MMDS, LMDS, WCS, PCS and a variety of satellite bands as well as in the license free ISM and UNII bands. Non-wireline efforts come in two flavors - one run by the very same telephone companies that are running the wireline installations - e.g. AT&T Broadband (Cable), Sprint Broadband (LMDS), Voice Stream (under the name of MobileStar on 2.4Ghz ISM). The other model consists of small businesses that seem to have little chance in the world of succeeding. They're mostly using equipment that conforms to one of the IEEE 802.11 standards for transmitting data over short distances to provide broadband as wireless internet service provider or (WISP)

### **Big telecommunication companies are the sole benefactors of Universal Service and E-Rate**

The Universal Service Fund was originally designed to subsidize rural, 'high cost' and poorest school districts and libraries, such as those in the San Luis Valley of Colorado, where a T-1 Internet line between Alamosa, the closest Internet connection, and the tiny town of San Luis costs over \$1,700 a month. Many school districts use their E-rate funds to pay for T-1 service from the large telephone companies and must apply for these funds every year for the lifetime of the connection. However, T-1 provided by telephone companies are still far too costly for most schools even with e-rate funds. This service could have been provided by a WISP at a much lower cost - one time equipment costs, plus the cost of a T-1 connection in Alamosa (at \$500/mo) with a little service overhead. However, the way the laws are written, the funds can only effectively be used to buy wireline services from the big telephone companies. The San Luis schools ended up getting their wireless connection paid for by an NSF grant. And in no way can schools, indigent people, rural medical practices, people without telephone service in rural areas obtain Universal Service E-Rate Funds to buy their own wireless equipment because it is explicitly barred from the approved equipment list. The FCC also excludes wide area networks from the E-Rate. School districts cannot use the funds to networks individual schools together and share one T-1 access. District 20 Schools had to pay for their WLAN infrastructure themselves. I.e. the money flows right back into the big telecommunication companies and not into the most cost effective way of providing the service.

### **Many Telcos Not willing to Provide Service**

Due to over-speculation and poor business decisions, many of the large telcos are close to being insolvent and are not really interested in further expanding their networks into rural areas despite lucrative E-rate funding solely designed for them by them.

I live in the Northeast part of Colorado Springs - Rockrimmon. Rockrimmon is a largely affluent high-tech community, and yet DSL is not available in our community, probably due to the large amount of open spaces and large lot sizes. Effectively, the subscriber density is not there for them to make a killing on this part of town. There are a few alternatives - cable and wireless. To obtain broadband internet without cable is cost prohibitive. Sprint Broadband has stopped offering new service on their LMDS service. There are no WISPs serving this side of town. Perhaps there would have been if District 20 Schools could have gotten their service wirelessly from an ISP in town and been able to pay for it with E-Rate funds.

In nearby mountain areas like Black Forest and Woodland Park, no broadband services are currently available.

### **Taxation without representation**

If WISPs and cable companies were charged the Universal Service Obligations and the wireline telcos mostly remain the sole beneficiaries of this taxation system, the effect would be to further propagate the status quo - big telcos remain in the oligopoly of providing internet and telecom services, largely NOT interested in deploying broadband.

WISPs operate under very small margins. When providing services, they have to price themselves under the prices set for broadband services offered by telco and cable operators

because they don't have the name brand recognition. Also, they don't have huge, guaranteed sources of capital. So often the consumer has to pay for the wireless equipment up front. If WISPs cannot offer their services to schools, libraries, areas of high cost and indigent people, then these additional opportunities of revenue are lost. Even a small fee/tax like \$2.50 per month can effectively put them out of business. This is exactly opposite to the stated goals of "removing barriers and encouraging investment", "promote competition across different platforms for broadband services" .

### **Freenetworks cannot afford to pay, nor may never qualify to receive funds**

Free networks such as Seattle Wireless [www.seattlewireless.net](http://www.seattlewireless.net), Bay Area Wireless User Group <http://www.bawug.org/>, and New York City Wireless [www.nycwireless.net](http://www.nycwireless.net)... are created by those who use it rather than brought to consumers by business. This type of network is popping up in every metropolitan area of the country. Participation is not necessarily 'free' as in cost, but free as in autonomous and self-governing; free from FCC regulations. Individual experimenters and cooperative gateway ISPs that may donate their own time and access to the Internet as part of their cause put up free networks. They often charge users on an as can pay basis, or even no charge at all. Most of these networks are comprised of individuals putting up their own funds to buy IEEE 802.11 equipment to deliver broadband Internet to the masses at very low costs, in many cases free of charge. Thus free networks actually serve to meet several of the goals of Universal Service - Broadband Internet to areas of high cost and to people that could not otherwise afford it. If Universal Service Obligation charges were imposed on these type of services, free networks will come to an end. Taxing free networks would in effect counter the goals of "Encourage the ubiquitous availability of broadband access to the Internet to all Americans", especially in large metropolitan areas and in rural areas where big telcos don't stand to make a lot of profit and don't currently want to provide service.

Besides being wireless providers, free networks in many cases have not been around long enough or in any way meet the criteria set forth to be beneficiaries of Universal Service E-Rate funds. If the rules and regulations pertaining to who can benefit from Universal Service were relaxed, the free networks could be used to provide equipment to those who otherwise could not afford it.

Please reconsider applying Universal Service to all broadband providers unless all broadband service providers can equally benefit from it. The laws must be re-written to accommodate new advancements in technology and to allow the purchase of such technology.

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