

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
)	
Further Inquiry Into Two Under-)	GN Docket No. 09-191
Developed Issues in the Open Internet)	
Proceeding)	WC Docket No. 07-52
)	

To the Commission:

Comments from Nickolaus E. Leggett

I am one of the original petitioners for the establishment of the Low Power FM (LPFM) radio broadcasting service (RM-9208 July 7, 1997 subsequently included in MM Docket 99-25). I am also a certified electronics technician (ISCET and iNARTE) and an Extra Class amateur radio operator (call sign N3NL). I hold an FCC General Radiotelephone Operator License with a Ship Radar Endorsement. I am an inventor holding three U.S. Patents. My latest patent is a wireless bus for digital devices and computers (U.S. Patent # 6,771,935). I have a Master of Arts degree in Political Science from the Johns Hopkins University. I am also one of the petitioners in the docket to establish a low power radio service on the AM broadcast band (RM-11287).

My Position on Network Neutrality

I am a strong supporter of the Network Neutrality concept and the extension of reasonable rights to Internet users and to small organizations attempting to use the Internet. In January of this year (in these dockets 09-191 and 07-52), I proposed a specific Bill of Rights for Internet users with the following content:

The Commission should establish a broadband “Bill of Rights” that will allow

individual Americans and small organizations the basic right to broadcast and communicate over broadband. This Bill of Rights should include the following features:

1. All individual Internet stations have the right to broadcast and communicate over the Internet without interference by corporations and/or government.
2. Any charges or fees must be applied equally to users without favoritism.
3. If broadband usage exceeds existing capacity, usage can be rationed (in terms of bits per second) with all Internet users having the same proportional reduction in capacity for the duration of the shortage. There must be no favoritism at all for large organizations.
4. Government and/or private organizations may not monitor the content of Internet transmissions unless such monitoring is done by lawful court order. This will establish the appropriate privacy of Internet web casts, web sites, and email traffic.
5. First Amendment rights on the Internet shall be the same as the First Amendment rights for print and radio/TV broadcast media.
6. Intellectual property rights, such as copyright, shall be the same as the rights applying to print and radio/TV broadcast media.
7. All Internet station journalists and bloggers shall be recognized as legitimate journalists with the same rights of access as print or conventional broadcast station journalists.
8. The freedom of association and assembly shall apply to gatherings conducted on the Internet.

Changing Legal and Political Environment

I have noticed that the legal and political environment for network neutrality regulations is changing. The courts are less likely to grant the Commission the power to establish detailed regulations of the Internet. In addition, the political environment is shifting towards a view of limited government that will not be supportive of extensive network neutrality regulations. This new political environment will probably continue for at least several more years, if not longer.

This suggests that the Commission needs to develop an alternative strategy for network neutrality progress in case the courts or political developments block direct regulation of the Internet.

A Citizens' National Broadband Network

One such alternative is to enable individual citizens of the United States to build their own alternative broadband network. This would be the Citizens' National Broadband Network (CNBN).

The CNBN would be a large set of unlicensed communicating modules that grow into a nation-wide broadband network that would be an independent alternative to the broadband communications networks provided by the major telecommunications companies.

Each CNBN module would communicate with other modules using millimeter-wave radio waves (30 to 300 GHz). Most of these modules would be manufactured by commercial companies and sold to individual American citizens for use on their own property. The modules would be certified (approved) by the Commission for compliance with standards established for the CNBN.

A variety of module types would be authorized for use on the CNBN. Some of these types would be:

1. End point data concentrators (combining the data flows from several computers into the network)
2. End point data switches (operating as a concentrator as well as a switch or router to other end points)
3. Transit switches (functioning as a router towards remote destinations)
4. Mobile service interfaces (interface mobile traffic into the fixed network)
5. Mobile repeaters (relay units mounted on individual private automobiles, boats, and individual private aircraft)
6. Local broadcasting modules (broadcasting to local receivers via the millimeter waves)

Individuals would purchase these modules for use in their own local area networks (LANs) and they could also “connect” their own modules to neighboring modules in their own area.

Over time, the CNBN would grow in a viral manner spreading over the land area of the Nation. In addition, the CNBN would support a constantly varying service from cars carrying repeaters on highways, boats carrying repeaters on the waterways, and private aircraft carrying repeaters in the air.

Supported Protocols and Other Innovations

The CNBN would require the development and use of innovative protocols and hardware. This is because the network would be highly decentralized compared to the typical commercial network in use today. For example, an adaptive automatic routing

protocol would be required to perceive currently available (connected) destinations and possible routes to them. This would be an artificial equivalent to what occurs within a living organism dealing with its own growth and the appearance of new cells (modules) in the network. It may turn out that the datagram approach (individual packet routing) is preferable in this environment.

The hardware of the modules would also be innovative to accommodate service as relays in moving vehicles and for unattended operation in harsh environments on private lands (such as Montana ranches). Preferably, the modules would be self-powered using technologies such as solar photovoltaic micro arrays.

Many of these features are not yet on the market. The citizens themselves and the vendors will develop them as the CNBN grows and evolves. For this reason, the Commission should explicitly allow the use of home-built modules of experimental design. This freedom would allow numerous citizens skilled in electronics and software to experiment with their own solutions to this type of networking. Indeed, the entire CNBN is a large experimental environment that would add new opportunities for technological invention and innovation and would increase the capability of our communications infrastructure. The CNBN is a communications commons as well as a technology development commons that would be available to all citizens, not just the large communications companies.

Time Frames and the Future of the CNBN

The CNBN would start out as individually-owned LANs that would be connected over time on a voluntary basis to form a growing wide area network (WAN). This process would take years to become a large network. However, the process would not

necessarily stop and would eventually become a giant network that would support numerous users communicating in a very decentralized and unregulated manner. The CNBN would inherently include network neutrality freedoms and its very existence (and its continuing growth) would pressure the commercial networks to maintain network neutrality freedoms as well.

Alternatives to the CNBN

The CNBN is not the only alternative mode available for network neutrality communications. For example, the Commission can authorize mass-market two-way transceivers that would communicate directly through routers installed on orbiting satellites for an independent digital communications service. This service can also use the plentiful frequencies available on the millimeter wave bands.

Other more-conventional alternatives such as low power FM (LPFM) community-based broadcasting can be encouraged and a similar service can be established on the AM broadcast band.

Social Aspects

Future social progress depends on the availability of communications systems that serve all citizens. All citizens and their new start-up companies should have access to this network-neutrality-compliant communication and they should have access to the business opportunity of developing the technology for use within that network. We citizens are not just here to be passive consumers of corporate products. We are here to create our own new content, products, companies, and our own new networking technologies.

Respectfully submitted,

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