BEFORE THE
FEDERAL COMMUNICATIONS COMMISSION
WASHINGTON, DC

In the Matter of	)	
	)	
Preserving the Open Internet	)	GN Docket No. 09-191
	)	
Broadband Industry Practices	)	WC Docket No. 07-52
	)	

REPLY COMMENTS OF THE ASSOCIATION FOR COMPETITIVE TECHNOLOGY

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I. SUMMARY AND INTRODUCTION

The Association for Competitive Technology respectfully submits these reply comments in response to the Commission's September 1, 2010 Public Notice announcing a further inquiry on the subjects of "specialized services" and the "application of openness principles to mobile wireless platforms".

As ACT noted in its earlier comments[1] to the Commission's *Notice of Proposed Rulemaking in the Matter of Preserving the Open Internet (NPRM),* and our more recent comments regarding the September 1, 2010 Public Notice focusing on "applications of openness principles to mobile wireless platforms", [2] developers of software and providers of IT services rely on competition and unrestricted user access to content, applications, and devices. These principles have effectively served Internet communications policy for the past six years since they were first articulated by Chairman Powell.[3]

We believe our earlier filing of October 12th adequately responds to several of the questions raised by the commission and other filers, however we wanted to address three specific elements that need further clarification.

1. Expansion of spectrum is critical to the expansion and growth of the newly created mobile applications marketplace.
2. Smartphone applications developers know how important network management is, and understand that carriers need wide latitude in ensuring that mobile networks are not taken down, or customers prevented from connecting, by misbehaving applications or devices.

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[1] http://actonline.org/publications/files/ACT-FCC-filing-on-NN_v.FINAL_.pdf
[2] http://actonline.org/publications/2010/10/12/act-reply-comments-to-nprm/
[3] http://hraunfoss.fcc.gov/edocs_public/attachmatch/DOC-243556A1.pdf

3. LTE and other 4G standards allow for expanded network management capabilities including improved QoS, packet-switching streaming services, and more robust (and less intrusive) packet prioritization functionality. Some of these services may be best implemented through commercial arrangements – creating opportunities for small applications developers.

II. ABOUT THE ASSOCIATION FOR COMPETITIVE TECHNOLOGY

The Association for Competitive Technology (ACT) is an international advocacy and education organization for developers of software applications and IT services. We represent over 3,000 small and mid-size IT firms throughout the world and advocate for public policies that help our members leverage their intellectual assets to raise capital, create jobs and innovate.

III. WHY APPLICATIONS DEVELOPERS CARE ABOUT SPECTRUM, MANAGEMENT, AND 4G STANDARDS

Representing over 3,000 small business developers, we have often noticed that Washington tends to spend considerable time speaking <u>about</u> small business, but rarely <u>to</u> small business. A number of the respondents commented about the potential impact of FCC actions on small businesses, but I believe our point of view, informed by our thousands of members, sheds some light from a perspective too infrequently included in these discussions.

While many make claims that small business is threatened by limited carriage options, we are hearing a much different story from our members. Small business developers, who

increasingly write programs for mobile devices, care more about the speed and reliability of bandwidth than the number of competitors.

The percentage of users accessing the internet through mobile devices is rapidly growing, and these consumers want access to the same programs and services they can get on their home computers. This means more demand for high bandwidth services like Hulu or Xfinity that feature video streaming. Other cloud-based applications for personal and business use also require significant network resources.

Because of this, application developers are not terribly concerned with which carrier a customer uses. Their primary concern is that the user experience will not be compromised by network performance. The most common consumer response when an application crashes or fails is to blame the program. If it fails to work more than once because spectrum scarcity or poor network management, customers will abandon the program, writing negative reviews serving to diminish future revenues.

Unfortunately many equate "speed" strictly with the ability to quickly access information. As the Commission knows, spectrum, bandwidth and latency are very different things. In particular, we noted that one respondent comingled the concept of bandwidth and/or latency with spectrum scarcity. In comments filed by Free Press[4], respondents claimed that the speed of LTE services would be faster that some existing wireline services, therefore justifying tight restriction on network management. To make this assertion borders on recklessness – as the commission knows well, the fiber and copper infrastructure that provides landbased service can carry vastly more packets and can dynamically load balance comparative oceans of data than can be sent to a cell tower. A tower's connection points are limited physically, and by the spectrum that can be used. In fact, a single strand of fiber can theoretically carry more packets that can be fit in all of

[4] http://fjallfoss.fcc.gov/ecfs/document/view?id=7020916539 pages 25-27

the currently available spectrum. This difference in technology means that comparing speed or latency of a system has nothing whatsoever to do with the need for effective network management.

The best, and most recent example of this problem can be seen in T-Mobile's recent problems where a single application shut an entire area. T-Mobile described this problem in their recent FCC filing, saying:

> *T-Mobile network service was temporarily degraded recently when an independent application developer released an Android-based instant messaging application that was designed to refresh its network connection with substantial frequency. The frequent refresh feature did not create problems during the testing the developer did via the WiFi to wireline broadband environment, but in the wireless environment, it caused severe overload in certain densely populated network nodes, because it massively increased signaling—especially once it became more popular and more T-Mobile users began downloading it to their smartphones. One study showed that network utilization of one device increased by 1,200 percent from this one application alone. These signaling problems not only caused network overload problems that affected all T-Mobile broadband users in the area; it also ended up forcing T-Mobile's UMTS radio vendors to re-evaluate the architecture of their Radio Network Controllers to address this never-before-seen signaling issue. Ultimately, this was solved in the short term by reaching out to the developer directly to work out a means of better coding the application.*

None of the problems outlined by T-Mobile would have been solved simply because they were faster or had lower latency. Instead, the problem was spectrum, and the need to manage around the limitations imposed by scarce spectrum.

For ACT's mobile applications developers, the above story is a nightmare – not that their app could cause such a problem, but that one misbehaving app could harm their customers though no

fault of their application. Therefore our membership sees a far greater need for aggressive network management in the wireless space.

Beyond better management, applications developers also see great benefit to the ability to enter into commercial arrangements with carriers to guarantee quality of service and packet prioritization to provide a hedge against network shortfalls, and to allow for differentiation between products. As ACT described in an earlier filing, many applications developers are creating apps that serve a consumer need, but cannot offer the level of service needed for certain business applications. One obvious example is the "virtual PBX box"; this is a cloud based service that provides all of the phone routing and internal messaging systems that are normally handled by a physical switch box (an NBX-100 for example). This technology would allow customers to use mobile smartphones just as they would a deskphone today, with internal call routing, voicemail, and even redirection. But without true QoS, businesses are unwilling to put their most vital communications into the service. By having service level guarantees with a carrier, small companies can 'stand on their shoulders' and go head to head with larger companies that provide similar services.

While high unemployment continues, and our emergence from the recession is slow and stuttering, the remarkable growth in mobile applications is one of the few success stories in the American economy. Companies like Apple and Google are showing dramatic growth through the success of its mobile devices, applications, and advertising. The sales of iPhones, iPads and Androids are spurred by connection speeds available for high bandwidth applications.

Reliable network resources are essential for growth in the mobile marketplace suggesting that spectrum will need to be carefully managed Shortfalls in service quality could imperil

continued development. It is critical that the Commission ‘do no harm’ when it comes to one of the few bright sectors of our economy when we urgently need to be nurturing its growth.