

Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of)	
)	
Connect America Fund)	WC Docket No. 10-90
)	GN Docket No. 09-51
)	WC Docket No. 07-135
)	WC Docket No. 05-337
)	CC Docket No. 01-92
)	CC Docket No. 96-45
)	WC Docket No. 03-109
)	WT Docket No. 10-208

COMMENTS OF YMAX COMMUNICATIONS CORP.

YMax Communications Corp. (“YMax”) submits these comments in response to the Further Notice of Proposed Rulemaking (“*FNPRM*”) released by the Federal Communications Commission (“Commission” or “FCC”) on November 18, 2011.¹ In the *FNPRM* the Commission seeks comments on topics that were only partially resolved in the FCC’s *USF/ICC Transformation Order*.

I.
INTRODUCTION

YMax utilizes IP-based telecommunications extensively and believes that all Carriers should be 100% IP. YMax strongly supports mandatory IP-to-IP Interconnection. As the national Broadband Plan recognized, the United States must ensure that “as IP-based services replace circuit-switched services, there [needs to be] a smooth transition for Americans who use traditional phone service and for the

¹ *Connect America Fund et al*, FCC 11-161, Report and Order and Further Notice of Proposed Rulemaking, WC Docket Nos. 10-90 et al. (rel. Nov. 18, 2011)(“*FNPRM*” or “*USF/ICC Transformation Order*”).

businesses that provide it.”² In order to promote this transition, the Commission will need to eliminate regulatory “disincentives to migrate to all-IP networks.”³

As the Commission recognized in the *FNPRM*, however, not all carriers have the same incentives with respect to this transition. Some “network owners may have incentives to refuse reasonable interconnection” to new entrants.⁴ While it may be in the interest of incumbent carriers to lock their competitors into TDM interconnection for years, and to prevent those competitors and their customers from realizing the full economic and operational benefits of IP networks, it certainly is not in the public interest. The Commission should accordingly act to prevent the incumbents from exploiting their control over last-mile bottleneck facilities in this manner by taking the steps discussed in these Comments.

II. THE COMMISSION SHOULD DECLARE THAT IP-BASED INTERCONNECTION IS MANDATORY

The Commission took an important step in the USF/ICC Order when it established that incumbent LECs are required to negotiate in good faith regardless of the underlying technology. AT&T, Verizon, Sprint and many other carriers already currently provide nationwide IP interconnection in as little as two points and must utilize these resources to interconnect with any carrier requesting such interconnection. The only remaining issue in any good faith negotiations should be price, and if this cannot be resolved within 100 days of a request for interconnection,

² *National Broadband Plan*, p. 59

³ *National Broadband Plan*, p. 142.

⁴ *FNPRM*, ¶ 1337.

the parties should have the right to arbitrate or mediate the interconnection agreement.

III. MANDATORY IP-BASED INTERCONNECTION SHOULD APPLY TO ALL IP-BASED VOICE SERVICES

It is critical that the Commission explicitly find that IP interconnection apply to all IP-based services, regardless of how they are classified - “packetized voice” traffic, “IP voice” traffic, or simply “VoIP,”⁵ or interconnected VoIP or one-way VoIP services. For that matter, the same obligation should apply to non-IP legacy voice services. If a carrier wants to continue to use outdated TDM technology to serve its own customers, that is its business; but other providers should not be required to bear any extra cost to interchange traffic with those legacy carriers.

There is no reason that the obligation to interconnect in IP should be limited to any particular type of VoIP services, whether it be facilities-based, managed VoIP, IP in the middle services or “over the top” VoIP services. All these services provide significant benefits to consumers through a low-cost and efficient voice service that is more reliable and provides better voice quality. Mandatory IP interconnection for all of these services and any future services IP-based voice services benefits consumers and is in the public interest.

Moreover, nothing in the section 251 interconnection obligations requires a provider to own the facilities that are used to deliver the traffic. Rather, under the statute, interconnection rights apply to any telecommunications carrier that seeks interconnection for the “transmission and routing of telephone exchange service and

⁵ *FNPRM* ¶ 1345.

exchange access.” Further, the definitions of “telecommunications,” “telecommunications service,” and “telecommunications carrier” in Section 3 of the Act are all based on the service functionalities provided to customers, and make no distinction regarding either the technology used or the owner of the underlying facilities.⁶ Accordingly, whether a carrier uses private or dedicated facilities or the public Internet to deliver IP-based traffic should have no bearing on that carrier’s rights to IP interconnection. The public Internet now provides the largest bandwidth and most reliability.

Further, Section 251 is itself technology neutral and the Commission’s rules implementing IP interconnection should be consistent with that framework. The 251 interconnection requirements do not vary based on whether one or both of the interconnecting providers is using TDM or IP technologies, or network facilities that are either owned or part of the public domain.⁷

Finally, mandatory IP interconnection for all IP-based voice services is in the public interest. IP-based voice service already has become the preferred substitute for traditional analog voice services by both consumers and businesses. As the deployment of this technology rapidly becomes ubiquitous, it is crucial that the Commission explicitly mandate that IP interconnection duties extend to *all*

⁶ The definition of “telecommunications service” is quite explicit on this point, stating that the term includes the offering of telecommunications to the public “regardless of the facilities used.” 47 U.S.C. § 153(46). Similarly, the definitions of “telephone exchange service” and “exchange access” are each technology-neutral.

⁷ *FNPRM*, at ¶ 1342.

telecommunications services regardless of the technology or ownership of facilities and not just some arbitrary subset.

IV. IMPOSITION OF COSTS FOR TDM-BASED INTERCONNECTION

In the *FNPRM*, the Commission proposes that if an ILEC “that has deployed an IP network receives a request to interconnect in IP, but instead requires TDM interconnection, the costs of the IP-TDM conversion would be borne by the carrier that elected TDM interconnection.”⁸ Requiring TDM interconnection is blatantly anti-competitive and unreasonable, and imposes a host of unnecessary costs on competitors that ultimately are passed through to consumers. Thus, YMax supports this proposal; however, the FCC must explore the details of TDM interconnection, where a majority of the costs may be hidden. In fact, the FCC must stop only focusing on conversion. Conversion of TDM-to-IP or IP-to-TDM is simply one small facet of the extraordinary, unreasonable and inefficient costs that are foisted on IP-based carriers like YMax by legacy carriers who continue to insist to deliver traffic in TDM format.

In order to interconnect in TDM, IP-enabled voice service providers have to invest in dedicated circuit-switched trunking facilities that are far less efficient than the IP-based facilities used for packet-switched IP interconnection. They are forced to buy these circuits from the same companies denying them IP interconnection. They also have to maintain separate dedicated circuits to dozens or hundreds of ILEC switches just so that capacity will be ready if and when a call is placed to an ILEC customer served by any one of those switches or a call is received from an ILEC customer served by any one of those switches. The cost of these dedicated circuit

⁸ *FNPRM* ¶ 1341.

facilities far outstrips the cost of the equipment at the end of the circuit that does the TDM-IP conversion. None of this would be necessary using current IP technology; carriers would exchange packets over an IP interface at minimal expense and with superb voice quality, security and redundancy. There would be no need for excess dedicated capacity on any individual route as long as the overall capacity of the IP facilities is sufficient for the aggregate traffic volume.

Moreover, many carriers, if not the vast majority, including AT&T, Verizon and Sprint, already have installed IP technology in their networks voluntarily, because of the significant economic and operational benefits of this technology.⁹ The cost of IP-

⁹ Many incumbent LECs already use IP technologies within their networks for switching and/or transmission of voice traffic, even if they do not offer to interconnect with other carriers using these methods. Verizon's FIOS service and AT&T's U-Verse service are both based on IP technology. Further, soft-switch vendors have reported that their products are used by rural LECs, among other carriers. *See, e.g.*, Verizon's description of its Carrier IP Termination (SIP), Carrier IP Termination Transport, and SIP Gateway Services available at <http://www22.verizon.com/wholesale/solutions/> ("customers can choose to interface with the Verizon IP Network via the Public Internet, Dedicated Internet Access (DIA), or SIP Internet Access (SIA). An IP SEC Tunnel and the ability to support a P-Asserted ID is required for this application regardless of the interface type chosen."); CenturyLink's description of its IP Voice 1+Termination product available at <http://www.centurylink.com/wholesale/pcat/natipvoiceterm.html>. ("No longer will you need to purchase or manage the gateways necessary to make these conversions. CenturyLink does it all! First, your IP voice traffic traverses the CenturyLink IP transport to the Session Border Controller (SBC). The SBC provides the necessary firewall protection to give your traffic an additional level of protection on CenturyLink's IP voice infrastructure. CenturyLink's media gateways terminate your IP voice calls to the TDM circuit-switched network. Calls are terminated either domestically or internationally to the PSTN via TDM."... "Connect to CenturyLink's network using a DS-1 to OC-48 dedicated data circuit. Providers collocated in a CenturyLink point of presence (PoP) location may connect via an Ethernet cross-connect. Service providers may also connect via the public Internet."); AT&T, Inc. 2010 Annual Report at 5-6 ("Our third major growth platform is AT&T U-verse, an integrated set of services - high quality TV with unique features and functionality, high speed Internet, and voice - all delivered over an advanced Internet Protocol network.") available at: <http://www.att.com/gen/investor-relations?pid=19234>. *See also* REDCOM Laboratories, Inc., "Redcom HDX," at http://www.redcom.com/documents/HDX_Brochure_V4_CO.pdf ("REDCOM's HDX Carrier-Class 4/5 softswitch with TRANSip® offers fully integrated VoIP and TDM in an

based softswitches and IP transmission is minimal compared to a legacy TDM architecture. Even AT&T has acknowledged that TDM is an “obsolete” form of interconnection and a “relic of an earlier era.”¹⁰

Nevertheless, because AT&T, Verizon and other BOCs control a large share of the market, they can (and do) force smaller companies (including other ILECs and competitive carriers like YMax) to maintain a large number of obsolete and inefficient TDM facilities – even though these incumbents use IP within their own networks and deliver traffic to other carriers in IP. This allows AT&T and other large carriers to gouge new entrants and competitors with significant installation and monthly charges for trunking, switch ports, and other interconnection facilities to obtain monopoly profits. In short, these large carriers interconnect in IP only when convenient because such interconnection will reduce their profits on the TDM facilities that many competitors lease from them and also reduce the competitors’ costs of providing a

all-inclusive central office platform. In the transition to VoIP, the idea of wholesale replacement of network assets is not only expensive, it is often completely unrealistic. The HDX brings VoIP connectivity to rural central offices, providing an integrated VoIP and TDM migration platform so that you don’t require additional external boxes.”); “GENBAND Scores Rural Telco Win With Eastex,” *telecompetitor.com* (Sept. 9, 2010) *at* <http://www.telecompetitor.com/genband-scores-rural-telco-win-with-eastex/> (“GENBAND, a leading developer of IP solutions and services, and Eastex Telephone Coop., Inc. (Eastex), one of the largest rural carriers in Texas, today announced the deployment of GENBAND’s industry-leading C15™ Compact Softswitch to deliver communication services to Eastex’ residential and business subscribers across rural East Texas.”); <http://www.metaswitch.com/company/carrier-customer-list.aspx>, listing AT&T, other incumbent carriers including rural carriers, and CLECs that are using softswitch technology provided by Metaswitch, an industry leading vendor of switching and applications solutions for packet switched networks.

¹⁰ Comments of AT&T, Inc. on the Transition from the Legacy Circuit-Switched Network to Broadband, in GN Docket Nos. 09-476, 09-51 and 09-137 (filed Dec. 21, 2009)

competing voice service that is eroding the large carriers' legacy wireline voice services. This inefficient and anti-competitive framework must be stopped.

YMax proposes the following reasonable and efficient resolution to cease these inefficient and anticompetitive practices. In the event that a telecommunications carrier requires interconnecting carriers to use TDM-based interconnection, YMax proposes that the carrier requiring TDM interconnection should pay all of the interconnecting carrier's costs associated with the TDM interconnection. The FCC should establish default rates for these charges at \$400 monthly per DS1 and a flat \$2,000 charge per DS1 if more than 2 connections are needed. If two or less global connections are needed, the TDM carrier should pay \$2,000 per DS3 per month. Alternatively, the FCC could require that the TDM carrier provide free space (no more than 1 cabinet) for an interconnecting carrier to install its own gateway and softswitch equipment to convert IP signals to TDM for mutual benefit, together with free Internet access to connect the interconnecting carrier's network with the gateway. This equipment can be shared if there are multiple carriers interconnecting with the TDM carriers. This proposal, in combination with the Commission's proposed rule, will discourage carriers with a legitimate ability to connect in IP from arbitrarily imposing TDM interconnection resulting in very limited costs and no excuses.

V. POINTS OF INTERCONNECTION FOR IP NETWORKS

Another way that incumbents increase their competitors' costs is by requiring competitors to interconnect at multiple and unnecessary locations. Because of the universal nature of the Internet, these multiple points of interconnection ("POIs") are not necessary for IP-based interconnection. As a result, the Commission's IP-based

interconnection rules should establish a default rule that limits the ILEC to requiring IP-based interconnection at no more than two POIs in the United States. These POIs need not be places where the ILEC is physically present; carriers may prefer to interconnect indirectly by transiting over a third party's IP network. This will allow even rural ILECs to interconnect with other carriers nationwide at a very reasonable cost. AT&T, Verizon and Sprint and most others already have these POIs and they are currently being used.

While parties may agree on other arrangements, no carrier should be compelled to interconnect at more than two points. Not only is this proposal logical based upon existing Internet architecture and the efficiency of IP networks, but it is consistent with the existing marketplace. Indeed, YMax currently has established IP interconnection with three of the largest carriers in the U.S. through only 2 interconnection points per carrier. YMax further understands that these same carriers have similar, if not identical arrangements with other competitors. Accordingly, establishing a default rule of no more than 2 POIs for IP interconnection is consistent with the market and will impose no burden on telecommunication carriers that are required to interconnect in IP.

**VI.
IP-BASED INTERCONNECTION SHOULD BE SUBJECT TO THE
NEGOTIATION AND ARBITRATION PROVISIONS OF THE
TELECOMMUNICATIONS ACT OF 1996**

With respect to negotiating agreements for IP-based interconnection, the Commission has recognized that the duty to negotiate in good faith has been a bedrock requirement of the market-opening provisions of the Telecommunications Act of 1996 and does not depend on the network technology underlying the

interconnection.¹¹ In the *FNPRM*, the Commission asks whether it should issue rules to guide good faith negotiations in the context of IP-to-IP interconnection¹² and if enforcement of good faith negotiations should occur at the Commission, state commissions, courts or other forums.¹³

YMax prefers that the Commission establish that the existing Section 252 rules, including the opportunity for binding arbitration if negotiations reach an impasse, will guide negotiation of IP interconnection agreements. As the Commission recognizes, the ILECs have little incentive to negotiate fairly and have superior bargaining leverage.¹⁴ The use of commercial agreements, without the ability to arbitrate disputes at the state commission, would deprive competitors of any meaningful ability to obtain reasonable terms for IP interconnection. The fact that the interconnection is made using IP does not deprive the ILECs of their enormous historical monopoly advantages. Further, historically, ILECs have refused IP interconnection for the reasons discussed herein. In order to achieve the Commission's goal of ubiquitous broadband, ILECs must be subject to clear and robust requirements to negotiate in good faith. Without the ability for competitors to seek arbitration, the incumbents will have little incentive to negotiate fairly. This was the reason Congress adopted sections 251 and 252 in the first place. There is no reason to deviate from the negotiation and arbitration framework set forth in the 1996 Act for IP interconnection.

¹¹ FNPRM at ¶ 1335.

¹² FNPRM at ¶ 1349.

¹³ FNPRM at ¶ 1348.

¹⁴ See FNPRM ¶ 1337.

