In the Matter of ) )
tw telecom inc. Petition for Declaratory ) WC Docket No. 11-119
Ruling Regarding Direct IP-to-IP ) )
Interconnection Pursuant To ) )
Section 251(c)(3) of the Communications Act ) )

COMMENTS OF COMPTEL

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SUMMARY

One of the most important actions the Commission can take to attain its overarching goal of promoting the deployment of broadband and IP technology is to confirm, as expeditiously as possible, that incumbent LECs are required to offer direct IP-to-IP interconnection, pursuant to section 251(c)(2) of the Act, with requesting providers of facilities-based VoIP services. As the Commission has previously stated, nothing in the statute or legislative history indicates that section 251(c) was only intended to apply to the technologies in existence in 1996. Rather the Statute is technology neutral.

IP-to-IP interconnection arrangements for the exchange of VoIP traffic are subject to the same Section 251 requirements as circuit-switched voice interconnection arrangements. As discussed below, providers of facilities-based VoIP services are telecommunications carriers offering telephone exchange service and/or exchange access. Consequently, incumbent LECs have an obligation to negotiate interconnection agreements with such telecommunications carriers in good faith and provide interconnection, for the transmission and routing of telephone exchange service and exchange access, on a direct IP-to-IP basis (1) at any technically feasible point within their networks; (2) that is at least equal in quality to that provided to themselves or to any subsidiary, affiliate or any other party to which the carriers provide interconnection; and (3) on rates, terms and conditions that are just, reasonable and nondiscriminatory in accordance with the terms of Sections 251 and 252.

Pursuant to Section 252, carriers must also submit to arbitration before the State commissions in the event negotiations are unsuccessful and file all negotiated and arbitrated interconnection agreements with the State commissions for review and approval. Incumbent
LECs’ duty to interconnect includes the provision of SIP signaling and other necessary information. Section 51.305(e) of the Commission’s rules, 47 CFR §51.305(e), places the burden of proof on an incumbent LEC that denies an interconnection arrangement as technically infeasible.
Before The  
FEDERAL COMMUNICATIONS COMMISSION  
Washington, D.C. 20554

In the Matter of  

)          )                )                  )
tw telecom inc. Petition for Declaratory Ruling Regarding Direct IP-to-IP Interconnection Pursuant To Section 251(c)(3) of the Communications Act  

WC Docket No. 11-119

COMMENTS OF COMPTEL

COMPTEL respectfully submits these comments, pursuant to the Federal Communications Commission’s (“Commission”) Public Notice released on July 15, 2011 (DA 11-1198) in the above-referenced docket, in support of the tw telecom inc. (“TWTC”) Petition for Declaratory Ruling regarding IP-to-IP Interconnection pursuant to Section 251(c)(3) of the Communications Act, as amended (“Act”). It is imperative that the Commission confirm, as expeditiously as possible, that the interconnection and traffic exchange obligations of the Act continue to apply as networks transition from circuit-switched to packet-switched technology, and that those obligations specifically include direct IP-to-IP interconnection.
A. The Commission Should Confirm the Right of CLECs to Request IP-to-IP Interconnection Under Section 251(c)(2).

If the Commission is to encourage the shift to IP-to-IP interconnection, as recommended in The National Broadband Plan, it can no longer remain silent in the face of repeated pleas to explicitly confirm that IP-to-IP interconnection is subject to Sections 251 and 252 of the Act. Indeed, as COMPTEL has previously stated, such confirmation is one of the most important actions the Commission can take to attain its overarching goal of promoting the deployment of broadband and IP technology. As stated in the National Broadband Plan:

Basic interconnection regulations, which ensure that a consumer is able to make and receive calls to virtually anyone else with a telephone, regardless of service provider, network configuration or location, have been a central tenet of telecommunications regulatory policy for over a century. For competition to thrive, the principle of interconnection—in which customers of one service provider can communicate with customers of another—needs to be maintained.

In essence, the Commission has already found direct IP-to-IP interconnection to be subject to section 251 of the Act. Specifically, in order to ensure that Commission’s “rules make it possible for competing telecommunications providers to offer seamless service to end-users by interconnecting with incumbents’ networks,” the Commission declared the following:

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1 The National Broadband Plan, Recommendation 4.10: The FCC should clarify interconnection rights and obligations and encourage the shift to IP-to-IP interconnection where efficient.


3 COMPTEL ICC Comments at 4.

4 The National Broadband Plan at 49.
[I]nterconnection obligations of sections 251(a) and 251(c)(2) apply to incumbents’ packet-switched telecommunications networks and the telecommunications services offered over them…[rejecting the argument] that Congress intended that section 251(c) not apply to new technology not yet deployed in 1996. Nothing in the statute or legislative history indicates that it was intended to apply only to existing technology. Moreover, Congress was well aware of the Internet and packet-switched services in 1996, and the statutory terms do not include any exemption for those services.\(^5\)

Requiring TDM conversion cannot be squared with the obligation to permit interconnection to “the incumbents’ packet-switched telecommunications networks.” Moreover, as TWTC and other carriers have explained, converting IP voice traffic to TDM format solely for the purpose of handing the traffic off at an interconnection point is not seamless when both of the interconnecting carriers’ transport networks are packet-switched based. It increases inefficiencies and costs and reduces voice quality through unnecessary protocol conversion.\(^6\) In such cases, direct IP-to-IP interconnection is necessary for seamless interconnection.

Furthermore, as the United States Supreme Court found, the “FCC has long construed § 251(c)(2) to require incumbent LECs to provide, at cost-based rates, any technically feasible method of obtaining interconnection…”\(^7\) The statute does not provide an exception for IP-to-IP interconnection.

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\(^7\) *Talk America*, slip op. at 8, *citing* 47 CFR §51.321(a)(emphasis added.)
The Commission again addressed the issue of interconnection obligations on IP technology, for all practical purposes, when it specifically declined to grant forbearance from the ILECs’ section 251(c) obligations under the Act in a forbearance Order addressing non-TDM-based, packet-switched services and non-TDM-based, optical transmission services.\(^8\) By finding it necessary to preserve interconnection obligations when addressing non-TDM based services, the Commission essentially determined the existence of “legal interconnection or traffic exchange mandates on IP networks.”\(^9\)

Unfortunately, even though the language of the Act is both unambiguous and technology neutral, and despite the Commission’s prior pronouncement discussed herein, the RBOCs have been evading their interconnection obligations under the Act as they pertain to IP-to-IP interconnection under Section 251(c)(2).\(^{10}\) According to the Commission’s Technology Advisory Council, VoIP subscribers will surpass PSTN subscribers in 2013.\(^{11}\) Therefore, it is critical that carriers can begin negotiating the next generation of interconnection agreements to include terms and conditions that accommodate IP network architecture. Limiting competitors to TDM interconnection and facilities, when a packet alternative has been deployed, in order to

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\(^8\) Memorandum Opinion and Order, Petition of AT&T for Forbearance Under 47 U.S.C. § 160(c) from Title II and Computer Inquiry Rules with Respect to its Broadband Services, FCC 07-180, ¶¶ 69-70 (2007).

\(^9\) See Opposition Verizon filed in WC Docket No. 04-440, n. 19, Aug. 13 2007. Verizon seems to acknowledge that preserving section 251 obligations, in a Commission Order addressing non-TDM based services, is essentially a recognition that “legal interconnection and traffic exchange mandates on IP networks” exist. While Verizon’s broadband forbearance petition may not have sought forbearance from section 251 interconnection or traffic exchange requirements, the Commission did find it necessary to address the matter in the “me-too” broadband forbearance petition of AT&T. Supra n. 8.

\(^{10}\) TWTC Petition at 5-6. COMPTEL ICC Comments at 7, n.7.

retain the oversight and regulatory backstop (when negotiations fail) provided for by the Act, would be tantamount to the Commission turning its back on the IP transition.

In short, IP-to-IP interconnection arrangements for the exchange of VoIP traffic are subject to the same Section 251 requirements as circuit-switched voice interconnection arrangements. As discussed below, providers of facilities-based VoIP services are telecommunications carriers offering telephone exchange service and/or exchange access. Consequently, incumbent LECs have an obligation to negotiate interconnection agreements with such telecommunications carriers in good faith and provide interconnection, for the transmission and routing of telephone exchange service and exchange access, on a direct IP-to-IP basis (1) at any technically feasible point within their networks; (2) that is at least equal in quality to that provided to themselves or to any subsidiary, affiliate or any other party to which the carriers provide interconnection; and (3) on rates, terms and conditions that are just, reasonable and nondiscriminatory in accordance with the terms of Sections 251 and 252.\textsuperscript{12}

Pursuant to Section 252, carriers must also submit to arbitration before the State commissions in the event negotiations are unsuccessful and file all negotiated and arbitrated interconnection agreements with the State commissions for review and approval.\textsuperscript{13} Incumbent LECs’ duty to interconnect includes the provision of SIP signaling and other necessary information.\textsuperscript{14} Section 51.305(e) of the Commission’s rules, 47 CFR §51.305(e), places the burden of proof on an incumbent LEC that denies an interconnection arrangement as technically infeasible.\textsuperscript{15}

\textsuperscript{12} 47 U.S.C 251(c)(2).

\textsuperscript{13} 47 U.S.C 252.

\textsuperscript{14} See TWTC Petition at 21-23.

\textsuperscript{15} Moreover, “[p]revious successful interconnection at a particular point in a network, using particular facilities, constitutes substantial evidence that interconnection is technically
B. A Carrier Providing Facilities-based VoIP Services is a Telecommunications Carrier Under the Act.

The Act defines a “telecommunications carrier” as any provider of telecommunications services.\(^{16}\) Facilities-based VoIP providers are providing a telecommunications service. Although the ILECs have argued otherwise, the Commission and the ILEC themselves have already found that telecommunications services are not limited to TDM-based services. In the AT&T broadband forbearance proceeding, AT&T sought, and the Commission granted, forbearance from certain provisions of the Act (specifically excluding sections 251 and 252) for “two categories of telecommunications services” -- (1) non-TDM-based packet-switched services ...(2) non-TDM-based optical networking, optical hubbing, and optical transmission services.\(^{17}\)

The Act defines “telecommunications service” as the offering of telecommunications – which is the transmission of information of the user’s choosing without change in the form or content of the information as sent and received\(^{18}\) - for a fee directly to the public, or to such classes of users as to be effectively available directly to the public, regardless of facilities used.\(^{19}\) Accordingly, the Commission must look at the nature of the service purchased by the end user when classifying this feasible at that point, or at substantially similar points, in networks employing substantially similar facilities. Adherence to the same interface or protocol standards shall constitute evidence of the substantial similarity of network facilities.” 47 CFR § 503(c). Furthermore, “[p]revious successful interconnection at a particular point in a network at a particular level of quality constitutes substantial evidence that interconnection is technically feasible at that point, or at substantially similar points, at that level of quality.” 47 CFR § 503(d).

\(^{16}\) 47 U.S.C. 153(44).

\(^{17}\) Memorandum Opinion and Order, Petition of AT&T for Forbearance Under 47 U.S.C. § 160(c) from Title II and Computer Inquiry Rules with Respect to its Broadband Services, FCC 07-180, ¶ 14(2007).

\(^{18}\) 47 U.S.C. 153 (43).

\(^{19}\) 47 U.S.C. 153(46).
service – and not the network technology used by the provider of the service. Since, in a voice call, the form and content of the information sent is the same as that received, whether transmitted over an IP network or a circuit-switched network, there is no statutory justification for classifying one as a telecommunications service and one as an information service.

Moreover, the Commission acknowledges that consumers have a reasonable expectation that interconnected VoIP services are replacements for traditional phone service.20 This is because the nature of the service being purchased does not change simply because the call terminates or originates on an IP network; the customers still “pay fees for the sole purpose of obtaining transmission of information without change in form or content,” consistent with the statutory definition of telecommunications services.

As the Commission has determined, IP telephony services (including that which is provided through gateways that translate the circuit-switched voice signal into IP packets) “enable real-time voice transmission.”21 The fact that it is a transmission mechanism is what makes VoIP a telecommunications service. The packet switching deployed in IP networks and the circuit-switching deployed in the PSTN are transmission technologies used to route traffic. Declining to classify a service as a telecommunications service based solely on the different transmission technologies used to initiate or terminate a telephone call conflicts with the statutory definition of telecommunications service, which mandates that the Commission not look at the facilities used.

An information service, on the other hand, is defined as the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available


information via telecommunications, and includes electronic publishing, but does not include any use of any such capability for the management, control, or operation of a telecommunications system or the management of a telecommunications service. VoIP service does not fit the definition of an information service since, when making a telephone call, the customer served does not acquire, store, transform, process, retrieve or utilize information – regardless of whether the call is made over the PSTN or an IP network. As the Public Service Commission of Wisconsin recently found with regard to AT&T’s facilities-based VoIP service, the various elements of such service are similar to, if not simply a re-packaging of, existing telecommunications services. It found the service to be a “communication capability like Plain Old Telephone Service (POTS)” and, likewise, found the related features, such as voicemail, “live-reply,” and “click-to-call” to be “virtually identical to their counterparts in traditional telecommunications voice service and customer calling offerings.”

Furthermore, as the Commission found when classifying AT&T’s phone-to-phone IP Telephony Services (“IP in the middle” services), the fact that a call may be routed through a gateway where it is converted to IP format (or vice versa) does not render the service an information service. Rather the Commission found that a service in which the call is routed through a gateway where it is converted to IP format and changed back from IP format is a telecommunications service.

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23 See Final Decision, Before the Public Service Commission of Wisconsin, Docket 6720_DR-101, p. 11, n. 9 (2010)(“Wisconsin Final Order”) (“Within “transmission,” “Internet protocol” or “IP-enabled” refer to services whose functional transmission mode is digital packetized transmission, as opposed to traditional circuit-based time division multiplexed (TDM) transmission. The digital IP-enabled mode typically will involve diverse routing of packets over networks, whether proprietary or the Public Internet, before re-assembly for delivery to the ultimate destination. “IP-enabled” is contrasted to current PSTN electronic switched circuit transmission in which a specific electronic circuit pathway, through Signaling System 7 (SS7), is established and disassembled for each communication.”)

24 Order, In the Matter of Petition for Declaratory Ruling that AT&T’s Phone-to-Phone IP Telephony Services are Exempt from Access Charges, WC Docket No. 02-361, FCC 04-97 (2004).
extent that protocol conversions take place within the network, they are internetworking conversions, which the Commission has found to be telecommunications services.\textsuperscript{25} Indeed, the statute makes clear that information service capabilities used for the “management, control or operation of a telecommunications system or the management of a telecommunications service” are exempt from the definition of information services.\textsuperscript{26} Protocol processing “involving internetworking (conversions taking place solely within the carrier’s network to facilitate provision of a basic network service, that result in no net conversion to the end user)” are included within that exception.\textsuperscript{27} Likewise protocol processing “in connection with the introduction of a new basic network technology (which requires protocol conversion to maintain compatibility with existing CPE)” is included in that exception.\textsuperscript{28}

C. Carriers are Entitled to IP-to-IP Interconnection for the Transmission and Routing of Telephone Exchange and Exchange Access Offered Using Packet-Switched Networks.

As the Commission found in the \textit{Local Competition Order}, “Congress made clear that incumbent LECs must provide interconnection to carriers that seek to offer telephone exchange service \textit{and} to carriers that seek to offer exchange access.”\textsuperscript{29} Therefore a carrier is entitled to IP-

\textsuperscript{25} \textit{Id.} at ¶ 12.

\textsuperscript{26} 47 U.S.C. 153(20).


\textsuperscript{29} First Report and Order, \textit{Implementation of the Local Competition Provisions of the Telecommunications Act of 1996, Interconnection between Local Exchange Carrier and}
IP interconnection for the transmission or routing of either telephone exchange service or exchange access service.

Telephone exchange service is either traditional local telephone service or a “comparable service provided through a system of switches, transmission equipment, or other facilities (or combination thereof) by which a subscriber can originate and terminate a telecommunications service.” 47 U.S.C. 153(47)(B). The Commission specifically has found that, although what constitutes “exchange” has traditionally been associated with an area served by a switch, or by an interconnected system of switches, the statutory language does not limit the definition of telephone exchange service to services that only employ circuit-switching technology. \(^32\) The Commission has determined that Section 153(47)(B) of the Act “was intended to expressly encompass the provision of telephone exchange service over facilities separate from the public switched network, such as packet-switching.” \(^33\) As TWTC points out in its petition, the Commission has found that consumers view facilities-based VoIP services as a substitute for traditional TDM-based telephone service, that facilities-based VoIP services belong in the same product market as traditional telephone service, and that such services are “functionally indistinguishable from traditional telephone service.” \(^34\)


\(^{33}\) Id. at n. 72.

\(^{34}\) See TWTC Petition at 17-18.
Exchange access is “the offering of access to telephone exchange services or facilities for the purpose of the origination or termination of telephone toll service.” Telephone toll service is a “telephone service between stations in different exchange areas for which there is made a separate charge not included in contracts with subscribers of exchange service.” As TWTC points out, one example of offering exchange access is the offering to terminate long distance calls from the customers of another provider to its facilities-based VoIP service customers.

**Conclusion**

For the foregoing reasons, the Commission should confirm that incumbent LECs are required to offer direct IP-to-IP interconnection, pursuant to section 251(c)(2) of the Act, with requesting providers of facilities-based VoIP services.

Respectfully Submitted,

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37 *See* TWTC Petition at 19.