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November 21, 2003

Via Hand-Delivery

Dale H. Roberts
Secretary/Chief Regulatory Law Judge
Missouri Public Service Commission
200 Madison Street, Suite 100
Jefferson City, Missouri 65101

RE: Case No. LA-2004-0133

Dear Judge Roberts:

Please find enclosed for filing with the Commission in the above-referenced case the Brief of Vonage Holdings Corp.

Thank you for bringing this to the attention of the Commission.

Very truly yours,

Mark P. Johnson

MPJ/rgr
Enclosures
cc: All Parties of Record (w/enclosure)

BEFORE THE PUBLIC SERVICE COMMISSION
OF THE STATE OF MISSOURI

In the Matter of the Application of Time Warner Cable Information Services (Missouri), LLC for a Certificate of Service Authority to Provide Local and Interexchange Voice Service in Portions of the State of Missouri and to Classify said Services and The Company as Competitive	)))))	Case No. LA-2004-0133

INITIAL BRIEF OF VONAGE HOLDINGS CORP.

Vonage Holdings Corp. ("Vonage"), by undersigned counsel and pursuant to the November 10, 2003, Order of the Missouri Public Service Commission ("Commission") Directing the Filing of Briefs, submits its initial brief in the above-referenced case. The Commission directed parties to address the issue of whether the Commission has jurisdiction to regulate Voice over Internet Protocol ("VoIP") services.

As an initial matter, Vonage notes that there are many differences among the various types of VoIP services offered in the marketplace, including differences in the technology used, the method of access, and the features and functions offered to the user. From a regulatory standpoint, however, both Federal and Missouri law generally base regulatory jurisdiction on the nature of the services offered to the public, not the particular technology used to provide the service. Therefore, companies using the same underlying VoIP technology but offering different services may be subject to different regulatory treatment. Accordingly, Vonage's initial brief is limited to the particular service offered by Vonage, and may not necessarily be applicable to services offered by other companies using VoIP technology in other ways.

I VONAGE DIGITAL VOICE[SM] SERVICE

Vonage provides a form of VoIP service, enabling customers with broadband Internet connections and specialized Customer Premises Equipment ("CPE") to communicate without using a telephone line Vonage's service permits intercommunication between the incompatible protocols used on the Internet and on the Public Switched Telephone Network ("PSTN").

Vonage's Digital Voice[SM] service is an innovative Internet offering that, like e-mail, instant messaging, Internet conferencing, and other as yet undreamed of services, permits customers to communicate over the Internet Although it resembles traditional telephone service in some respects, it has crucial technical and functional differences.

First, in contrast to some other services that rely on IP transmission, Vonage customers *cannot* access Digital Voice[SM] service by "dialing in" over the PSTN. Vonage customers can *only* access the service over a high-speed Internet connection provided by a third-party telecommunications carrier, satellite or cable company. While there are various categories of VoIP services and numerous ways to provision it, Vonage's service always involves the Internet in its provision of VoIP, and never provides a connection exclusively between stations on the PSTN.

Vonage's service does provide an interface to the PSTN, but the PSTN is employed at most for one end of the call For example, if a Vonage customer places a call to a non-Vonage customer, the call is routed over the Internet to the Vonage server, which then routes the call to the media gateway where it is converted into a format compatible with the PSTN, and then a call is placed via a third-party carrier to terminate the call over the PSTN.[1] Vonage accomplishes this through its contractual arrangements with telecommunications carriers. When calls are terminated through the PSTN, regulated telecommunications carriers provide call termination services for Vonage. Similarly, when a PSTN user

[1] In most cases, this routing will take place over the "public Internet." Typically, a broadband subscriber will have a dedicated facility (cable or DSL circuit) connecting its premises to an access node operated by its service provider. That service provider will typically have dedicated facilities connecting its access node to a router (or multiple routers) operated by an Internet "backbone" network. From there, packets may be transmitted over any available backbone facilities (*i.e.*, the "public Internet") to a router designated by the Internet backbone provider from which Vonage purchases Internet transport. Only at that point does the transmission enter a facility that is dedicated to Vonage's use.

calls a Vonage customer, the call is routed over the telephone network to a carrier from which Vonage purchases local telephone service; then that carrier delivers the call to the Vonage media gateway, in turn routes digital packets over the Internet to the Vonage customer.

When a Vonage customer places a call to another Vonage customer, the call is not transmitted over the PSTN at all; rather, the call travels from the originating caller's broadband connection to the Vonage server, and then is routed via the Internet to the broadband Internet connection of the called Vonage customer. In such instances, the transmission is not converted to a TDM signal, and instead the Vonage server routes a new set of IP packets to the second user. Since Vonage-to-Vonage "calls" never travel over the PSTN, such communications constitute purely "computer-to-computer" communications as discussed by the FCC in its *Report to Congress*.

Further, because the Vonage service is accessed over the Internet, it can be used anywhere a broadband Internet connection is available. Thus, Vonage's customers may use their service in any State, or virtually anywhere in the world so long as they have access to a broadband Internet connection.[3] The physical location of users on the Internet cannot be accurately determined, as a technical matter, so it is impossible for Vonage to identify the point of origin or termination of a customer's transmission.

Second, to use Vonage's service, customers must possess special CPE, namely, a computer. customer, not Vonage, owns the hardware needed to access Vonage's service. Vonage customers must subscribe to a broadband Internet access service, and then install compatible computer equipment that encodes audio signals as digital packets (or vice versa) and transmits and receives those packets over an Ethernet connection.[4] Most Vonage customers use a specialized computer called a Multimedia Terminal Adapter ("MTA"), which contains a digital signal processing unit that performs digital-to-audio and

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[2] *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report to Congress, FCC 98-67 (rel. April 10, 1998) ("*Report to Congress*").

[3] In a recent article in *PC Magazine,* one Vonage customer describes how he used Vonage's service with a California telephone number while staying at a hotel in New York City. John C. Dvorak, "Free Phone Calls," *PC Magazine* vol. 22, no. 14 at 57 (August 19, 2003).

[4] In order to use Vonage's service through a DSL connection, a router is required. As a practical matter, most cable modem users probably also use routers, so that they can attach other devices (such as a personal computer) to the modem.

audio-to-digital conversions, and has a standard telephone jack connection. Although a customer can connect conventional analog telephone sets to the MTA computer for use with Vonage's service, a conventional telephone will not work with Vonage's service unless it is connected to computer hardware or software that generates digital packets.

Once the Vonage customer has installed and configured their computer equipment and the requisite software, the customer can place and receive "calls" to anyone with a telephone number (including other Vonage customers) by establishing a connection over the Internet to a Vonage server. A typical Vonage user's equipment configuration is represented in the figure below:

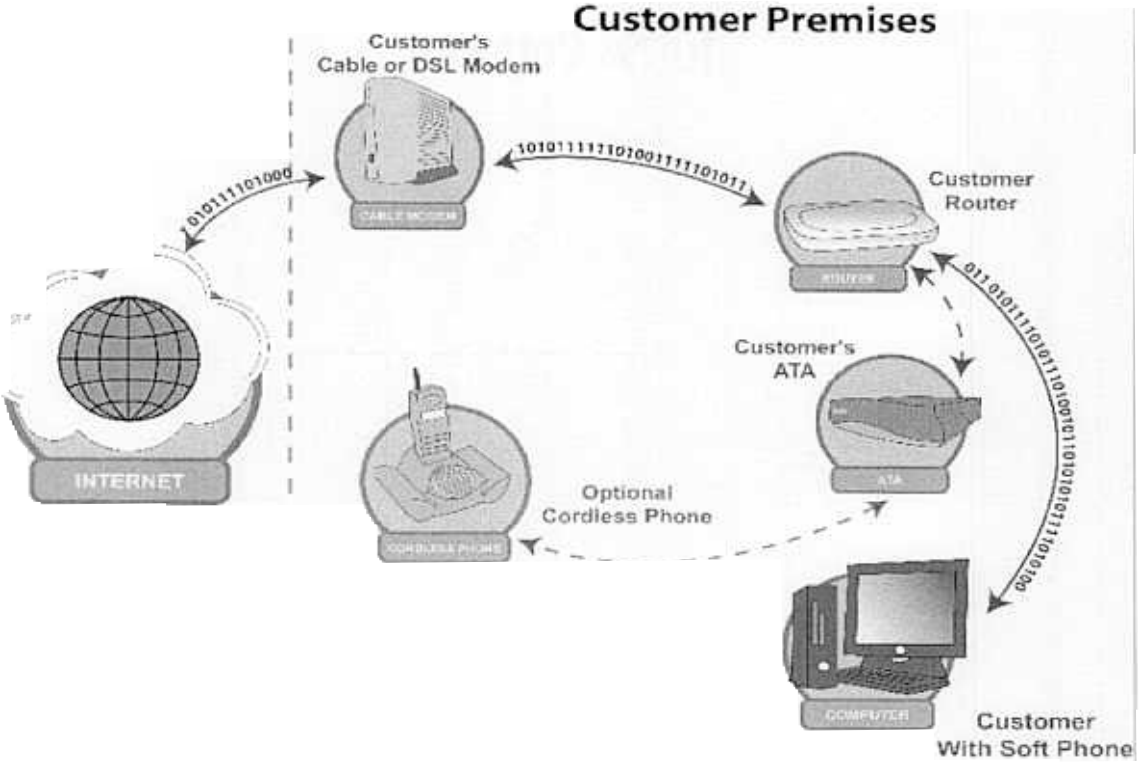

Figure I: Typical Vonage Configuration[5]

Packets sent by the customer's MTA or other computer are routed over the public Internet to Vonage's servers. It is there that Vonage's service begins. If the IP packets Vonage receives are destined

[5] *See* http://www.vonage.com/learn_howitworks.php (visited Nov. 17, 2003). The "ATA" in the diagram references a particular brand name for an MTA computer device.

to a station on the PSTN, Vonage converts the information received in the IP packets to a TDM digital signal, and obtains a connection to the PSTN station using the services of an unaffiliated common carrier. This is the third aspect that distinguishes Vonage's service from telecommunications services: Vonage performs a net protocol conversion from IP to TDM on Vonage to PSTN communications and from TDM to IP on PSTN to Vonage communications.[6]

Fourth, Vonage is an end user of telecommunications services. Vonage purchases local telephone service from carriers in 100 metropolitan statistical areas in 37 states nationwide to enable access to its network from the PSTN, and also purchases service from interexchange carriers for termination of traffic from its network to the PSTN. When Vonage purchases local exchange service, it is assigned telephone numbers (like any other end user), which it uses in providing its information service to its customers. Because Vonage customers may receive calls from users on the PSTN, Vonage associates each of its customers with one or more telephone numbers. The telephone number associated with the Vonage customer is not tied to the customer's physical location. Rather, the telephone number is mapped to the digital signal processor contained in the customer's computer, enabling Vonage to identify and serve that customer over any Internet connection.

II. THE COMMISSION DOES NOT HAVE JURISDICTION OVER VONAGE'S SERVICE OFFERING

As defined by Chapter 386, Section 250 of the Missouri Revised Statutes, the Commission's jurisdiction is limited to:

> [A]ll telecommunications facilities, *telecommunications services* and to all telecommunications companies so far as such telecommunications facilities are operated or utilized by a telecommunications company to offer or provide telecommunications service *between one point and another within this state* or so far as such *telecommunications*

[6] Modern telephone networks rarely use analog transmission except on all or part of the local loop connection between a "plain old telephone service" user and the central office. Typically, the user's communication is converted into a synchronous digital format ("Time Division Multiplexed" or TDM) at the switch line port, or at an intermediate digital loop carrier terminal. All intermediate switching and routing of the communication ordinarily occurs in the TDM digital format. Thus, Vonage does not perform any digital-to-analog conversions in its network, but only converts from asynchronous IP packets to TDM or vice versa.

> *services* are offered or provided by a telecommunications company *between one point and another within this state* . . . .[7]

Accordingly, in order for the Commission to have jurisdiction over Vonage's service offering, Vonage must be offering an intrastate "telecommunications service. The relevant statute defines "telecommunications service" as:

> the *transmission* of information by wire, radio, optical cable, electronic impulses, or other similar means. As used in this definition, 'information' means knowledge or intelligence represented by any form of writing, signs, signals, pictures, sounds, or any other symbols.[8]

The term "transmission" is commonly understood to mean "the act of transmitting or the state of being transmitted."[9] "Transmit" is generally defined as "to convey or dispatch from one person or another to send (a signal), as by wire or radio."[10] As explained above, Vonage's Digital Voice[SM] service does not transmit information; instead, Digital Voice[SM] converts analog voice signals into digital IP data packets that travel over the third-party provided Internet connection in an asynchronous mode and vice versa.

Vonage's service is offered by means of media gateways (i.e., computers) that provide an interface between the Internet and the PSTN (including net protocol conversion between the incompatible digital formats used by these two networks), and computer servers that process data, set-up signaling, and route packetized data between the media gateways and other points on the Internet. Much like an Internet service provider, Vonage purchases both Internet access and telecommunications services from other parties so that it can route information over both networks. But it is the customer's third-party Internet access provider and the regulated telecommunications carriers, not Vonage, that convey communications transformed by Vonage to their ultimate delivery points. While the functionality that Vonage provides (enabling two-way voice communication) is similar in some respects to that provided by traditional telephone companies, the manner in which Vonage provides its VoIP service is also significantly different.[11]

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[7] MO. REV. STAT. § 386.250 (emphasis supplied).

[8] MO. REV. STAT. § 386.020(53) (emphasis supplied).

[9] Webster's II New College Dictionary 1171 (1995)

See id.

See infra Section IVA.

Despite the similarity in function provided by enhanced services and regulated communications services, the FCC concluded that the technological differences between the services justified different regulatory treatment In short, although Vonage provides some similar functions to end users, Vonage itself does not transmit voice communications. Accordingly, Vonage is not providing a "telecommunications service" as that term is defined by the Missouri statutes.

is Vonage reselling telecommunications services. Vonage is providing an Internet application that performs a net protocol conversion and permits voice communications between the Internet and the telephone network. Vonage's information service uses computers and protocol conversion to provide an interface between asynchronous IP packets transmitted over the Internet and synchronous TDM communications over the PSTN. To connect its servers to the PSTN, Vonage purchases Primary Rate Interface ("PRI") and Direct Inward Dial ("DID") lines from telecommunications carriers as an end user. This is analogous to the operation of dial-up Internet service providers, who typically purchase PRI or DID lines from local exchange carriers so that customers can dial-in to the Internet service provider's modem bank In both of these instances, Internet service providers and Vonage are treated as end-user information service providers, not telecommunications service providers.

III AS WITH THE INTERNET ITSELF, IT IS IMPOSSIBLE TO SEPARATE VONAGE'S SERVICE INTO INTERSTATE AND INTRASTATE COMPONENTS, SO THAT STATE REGULATION INHERENTLY CONFLICTS WITH FEDERAL LAW

Aside from the fact that Vonage's service does not fit the statutory definition of a "telecommunications service' under Missouri law because the Company is not engaged in the "transmission of information by wire, radio, optical cable, electronic impulses, or other similar means[,]" Vonage also does not provide an intrastate service. It is impossible to separate the Internet, or any service offered over it, into intrastate and interstate components. As such, state regulation of Vonage's service offering would be preempted by Federal regulation. This ground for preemption exists *regardless* of whether Vonage is considered a telecommunications company under State law, or whether (or how) it would be regulated under Federal law.

Because of the nature of the Internet, it is technically impossible to apply Missouri's statutes, rules and regulations, purportedly limited to intrastate "calls," without also affecting interstate components of Vonage's service. Indeed, by its very nature, the Internet is interstate if not international in scope.[12] On traditional telephone networks, it is usually possible to determine the jurisdiction of traffic on a call-by-call basis, because the carrier (or, in the case of a reseller, the underlying facilities-based carrier) provides a physical connection to the end user, and therefore can determine where that user is located. On mobile wireless networks, determining jurisdiction is somewhat more difficult, but since the wireless carrier can track which cell site antenna is serving the customer's mobile unit, it can generally determine at least a reasonable approximation of the customer's location.

The Internet is different. It has been said that, "[o]n the Internet, nobody knows you're a dog,"[13] but it is also true that on the Internet, nobody knows where you are. The Internet has no system for determining the geographic location of users. As a result, Vonage has no way of accurately determining where a particular customer is located when the customer uses the service. Vonage identifies the digital signal processor in the customer's computer used to transmit and receive packets (so that it can verify that the user is indeed a customer), but since customers can easily plug devices such as the MTA computer into any Ethernet port connected to a broadband Internet connection, Vonage does not know where the device and its user are located at any given time. Therefore, it is technically impossible for Vonage to accurately determine whether a particular transmission by a customer is intrastate or interstate in nature.

Because the Internet-based nature of its service makes it impossible to distinguish intrastate from interstate communications, this Commission could not enforce state law requirements with respect to Vonage's intrastate services without also interfering impermissibly with Vonage's ability to provide interstate services over interstate communications facilities. Significantly, there is no "proxy" or "rule of thumb" this Commission could apply that could reliably separate intrastate from interstate transmissions traveling over the public Internet and completed after application of Vonage's service. For example,

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[12] 47 U.S.C § 230(f)(1) defines the "Internet" as the "international computer network of both Federal and non-Federal interoperable packet switched data networks."

[13] P. Steiner, cartoon, *The New Yorker*, vol. 69, no. 20, page 61 (July 5, 1993).

Vonage could not isolate "intrastate calls" by blocking customer transmissions originating from and terminating to telephone numbers with Missouri area codes, because some such numbers are actually being used by customers while located in other states. Thus, if telephone numbers alone were used as a proxy for location (despite the fact that the phone numbers associated with Vonage customers are linked to their computers and not their physical location), then blocking of calls to and from Missouri telephone numbers would impede interstate communications Conversely, some Vonage customers physically located in Missouri at times appear to be using non-Missouri telephone numbers. If Vonage tried to prevent its customers with Missouri mailing addresses from communicating with users of Missouri telephone numbers interstate communication again would be affected, because the Vonage customer might not actually be in Missouri at the time of using the service. Finally, short of eliminating its service nationwide, Vonage could not prevent customers from other states from using the service while visiting Missouri in order to communicate with other persons physically located in Missouri.

It is clear that this Commission may not take actions that would affect interstate communications: "questions concerning the duties, charges and liabilities of telegraph or telephone companies with respect to *interstate* communications service are to be governed solely by federal law and the states are precluded from acting in this area."[14] For example, if this Commission required Vonage to file tariffs, the company would be forced to apply those tariffs to interstate traffic due to the impossibility of identifying call jurisdiction. That would conflict with the FCC's detariffing policy for interexchange services.[15]

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[14] *Ivy Broadcasting Co. v. American Tel. & Tel. Co.*, 391 F.2d 486, 491 (2d Cir.1968) (emphasis added). *See also National Ass'n of Regulatory Util. Comm'rs v. FCC, supra* (affirming rules precluding states from regulating WATS service because "interstate communications ... are placed explicitly within the sphere of federal jurisdiction by the plain language of the Communications Act").

[15] *Policy and Rules Concerning the Interstate, Interexchange Marketplace, Implementation of Section 254(g) of the Communications Act of 1934*, Notice of Proposed Rulemaking, 11 FCC Rcd 7141 (1996), Report and Order, 11 FCC Rcd 9564 (1996); Second Report and Order, 11 FCC Rcd 20,730 (1996), Order on Reconsideration, 12 FCC Rcd 15,014 (1977); Second Order on Reconsideration and Erratum, 14 FCC Rcd 6004 (1999); Order, DA-002586 (Chief, CCB), rel. Nov. 17, 2000.

The FCC has preempted State regulation where, as a practical matter, it is impossible to separate a jurisdictionally mixed service into interstate and intrastate components.[16] For example, the FCC has asserted jurisdiction over dedicated private lines carrying jurisdictionally mixed traffic (except where the interstate use is *de minimis)*, because of the practical impossibility of measuring and billing separately for the portion of the line carrying intrastate traffic.[17] Similarly, when the FCC granted GTE's request to tariff the DSL Internet transport service sold to ISPs such as AOL, the FCC found that Internet access is interstate telecommunications.[18] The FCC acknowledged that some of the transmissions passing over an Internet access line may be intrastate in nature, but that the interstate component was not *de minimis*.[19]

The same inseverability doctrine would result in preemption of any attempt to impose State regulation on Vonage's service here. Vonage has demonstrated that it is impossible to apply Missouri common carrier regulations solely to intrastate "calls." This Commission is therefore preempted to the extent necessary to prevent this impact on the Internet and interstate services.

IV. VONAGE'S SERVICE IS AN "INFORMATION" SERVICE UNDER FEDERAL LAW

Besides the interstate nature of the service, State regulation would also be preempted because Vonage's service is an "information service" as defined in the Telecommunications Act of 1996. As the *Vonage v. Minn. PUC* decision determines, Federal law preempts State commissions from imposing common carrier regulation on the Internet, or on information services delivered over the Internet.

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[16] *See, e.g., Promotion of Competitive Networks in Local Telecommunications Markets*, 15 FCC Rcd. 22983, ¶ 107 (2000) ("[b]ecause fixed wireless antennas are used in interstate and foreign communications and their use in such communications is inseverable from their intrastate use, regulation of such antennas that is reasonably necessary to advance the purposes of the Act falls within the Commission's authority"); *Rules and Policies Regarding Calling Number Identification Service -- Caller ID*, 10 FCC Rcd. 11700, ¶¶ 85-86 (1995) (California default line-blocking policy was preempted because it would preclude transmission of Caller ID numbers on interstate calls, and effect of the policy was inseverable).

[17] *MTS and WATS Market Structure,* 4 FCC Rcd. 5660, 5660-61, ¶¶ 6-9 & n.7 (1989); *see also Petition of New York Telephone Company*, 5 FCC Rcd. 1080 (1990).

[18] *See GTE Tel. Operating Cos. GTOC Transmittal No. 1148*, 13 FCC Rcd. 22466 (1998) ("*GTE DSL Order*").

GTE DSL Order, ¶¶ 22, 25.

Therefore, even assuming for the sake of argument that State law required regulation of Vonage's service, that requirement would be preempted

A. Vonage Provides an Enhanced Service

While VoIP services have only recently come into existence, the FCC has left similar services unregulated for over two decades. The FCC established the distinction between "basic services" and 'enhanced services" in the *Second Computer Inquiry*.[20] That decision defined "basic services" as "the common carrier offering of transmission capacity for the movement of information."[21] In general, a basic service transmits information generated by a customer from one point to another, without changing the content or format of the transmission Thus, the "basic' service category was intended to define the transparent transmission capacity that makes up conventional communications service. Because the FCC considers "basic" services to be "wholly traditional common carrier activities," they are regulated under 'itle II of the Act

By contrast, the FCC defined unregulated "enhanced services" as

> services, offered over common carrier transmission facilities used in interstate communications, which [1] employ computer processing applications that act on the format, content, code, protocol or similar aspects of the subscriber's transmitted information; [2] provide the subscriber additional, different or restructured information; or [3] involve subscriber interaction with stored information.[23]

To determine whether a service meets the enhanced services definition, the FCC has traditionally acted on a *case-by-case basis*, applying each clause of the definition against the specific functionalities of the service in question The service is generally deemed "enhanced" if it meets the language of one of the three clauses, as interpreted by the FCC.[24]

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[20] *Amendment of Section 64.702 of the Commission's Rules and Regulations (Second Computer Inquiry)*, Docket No. 20828, Final Decision, 77 FCC 2d 384 (1980) ("*Computer II*"), subsequent history omitted.

[21] *Id.* at 420.

[22] *Id.* at 435.

[23] 47 C.F.R. § 64.702(a).

[24] The basic/enhanced service dichotomy applies to both domestic and international services. *See GTE Telenet Comms. Corp.*, 91 FCC 2d 232 (1985).

Vonage's provision of VoIP services satisfies the FCC's definition of an enhanced service. Vonage's service changes the form of the information as sent and received by the user, by converting the asynchronous IP packets generated by the MTA into the synchronous TDMA format used by the public switched telephone network (and vice versa). As such, Vonage's provision of VoIP service "employ[s] computer processing applications that act on the format, content, code, protocol or similar aspects of the subscriber's transmitted information."[25] While a service must only meet one of the criteria set out above, Vonage's service also "provide[s] the subscriber additional, different or restructured information."[26]

While the functionality that Vonage provides is similar to that provided by traditional telephone companies, the manner in which Vonage provides its VoIP service is significantly different. In *Computer II*, the FCC recognized that communications and enhanced services could be similar.[27] However, the Commission still concluded that the technological differences between the services justified different regulatory treatment. The FCC reached this conclusion:

> We acknowledge, of course, the existence of a communications component. And we recognize that *some enhanced services may do some of the same things that regulated communications services did in the past.* On the other side, however, is the substantial data processing component in all these services.[28]

Vonage's service performs a form of data processing that perhaps was not foreseen in 1980, but is now feasible due to advances in technology: it processes voice communications into digital data and routes them over data networks, allowing users to place and receive telephone calls without a telephone line, through their broadband Internet connection. Nonetheless, the FCC did foresee the fact that the boundary between traditional communications and data processing would be blurry, and the mere fact that two services "do some of the same things" does not mean they should be regulated similarly. Rather,

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[25] 47 C.F.R. § 64.702(a).

[26] *Id.*

[27] *See Computer II* at 433.

[28] *Id.* at 435 (emphasis added). The FCC also found in *Computer II* that it had "ancillary jurisdiction" to regulate enhanced services under the prefatory Title I of the 1934 Act for the purpose of "assuring a Nation-wide wire and radio communications service with adequate facilities at reasonable charges." However, the FCC declined to exercise this jurisdiction, finding that common carrier regulation of enhanced services is unwarranted.

Computer II makes clear that it is essential to examine the actual technological underpinning of the Vonage service to determine the appropriate level of regulation. The Federal definitions plainly do not depend on whether the information being transmitted is "voice" or "data" or something else; they depend on whether the "form or content" of the information is changed.[29] Under these definitions, Vonage offers an information service because it "processes" and "transforms" the information transmitted by its users.

Like any information service, of course, Vonage's VoIP service *uses* telecommunications to deliver information to its users, but Vonage does not *provide* telecommunications. In the *Report to Congress,* the FCC stated that "carrier regulation" should be "limit[ed] to those companies that provide the underlying transport."[30] Vonage customers use the telecommunications capabilities of their underlying broadband access providers and Vonage uses the telecommunications capabilities of the common carriers from which Vonage purchases services to connect its users to the PSTN. However, as the court found in *Vonage v. Minn. PUC*, Vonage does not itself provide telecommunications.[31]

Vonage, in short, provides an *application* over the Internet that is fundamentally inseparable from the enhanced nature of Internet access itself. Vonage users use the same Internet access connection for transmission of voice data as they do for browsing the Web, downloading MP3 files, sending and retrieving e-mail, and exchanging instant text messages. That connection cannot be "enhanced" for some packets and "basic" for others. As the FCC cautioned, "it would be incorrect to conclude that Internet access providers offer subscribers separate services that should be deemed to have separate legal status, so that, for example, we might deem electronic mail to be a 'telecommunications service,' and Web hosting to be an 'information service.'"[32] Rather,

[29] "The term telecommunications means the transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received." 47 U.S.C. § 153(43). A "telecommunications service" is "the offering of telecommunications for a fee directly to the public...." 47 U.S.C. § 153(46). Likewise, a telecommunications carrier "means any provider of telecommunications services...." 47 U.S.C. § 153(44). "The term information service means the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving, utilizing, or making available information via telecommunications...." 47 U.S.C. § 153(20).

[30] *Report to Congress* at ¶ 95.

[31] *Vonage v. Minnesota PUC*, slip op. at 12.

[32] *Report to Congress* at ¶ 79.

> [t]he service that Internet access providers offer to members of the public is Internet access. That service gives users a variety of advanced capabilities. Users can exploit those capabilities through applications they install on their own computers. The Internet service provider often will not know which applications a user has installed or is using. Subscribers are able to run those applications, nonetheless, precisely because of the enhanced functionality that Internet access service gives them.[33]

The FCC's description of "applications" that end users "install on their own computers" to "exploit" the advanced "capabilities" of Internet access services describes Vonage's service exactly. Vonage does not provide the Internet connection and is not an ISP itself. The "host" ISP whose customers access Vonage through its facilities is no more aware of that fact than of any other web browsing its customers may do.

B. Vonage's VoIP Service Performs a Net Protocol Conversion

As noted above, a service may be classified as enhanced if it alters either the content *or the format* of the customer's transmissions. Vonage does not modify the content of its customers' transmissions, but it does change the format of these transmissions to provide an interface between otherwise incompatible network protocols The FCC has specifically held that such protocol conversion services are enhanced, as long as they perform a *net* protocol conversion.[34] The net conversion test examines the service on an

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[33] *Id.* This determination is in accord with the finding in *Computer II* that basic and enhanced services could be similar:

> We acknowledge, of course, the existence of a communications component. And we recognize that some enhanced services may *do some of the same things* that regulated communications services did in the past. On the other side, however, is the substantial data processing component in all these services.

Computer II at ¶ 435 (emphasis added).

[34] *Communications Protocols under Section 64.702 of the Commission's Rules and Regulations*, Memorandum Opinion, Order, and Statement of Principles, 95 FCC 2d 584, 596 (1983) ("*Communications Protocols Decision*"). Services that result in no net protocol conversion to the end user continue to be classified as basic services. The FCC later summarized this conclusion to stand for the principle that the protocol conversion standard of 64.702(a) does not reach network processing in carrier's networks (setup, takedown and routing of calls or their sub-elements). *Waiver of Section 64.702 of the Commission's Rules*, Memorandum Opinion and Order, 100 FCC 2d 1057, 1071 (1985).

In its *Third Computer Inquiry*, the FCC restated three exceptions to the rule that protocol processing renders a service enhanced. First, the FCC limited the enhanced services definition to end-to-end communications between or among subscribers. In other words, communications between a subscriber and the network are not enhanced services. Second, protocol conversion required by the introduction of new technology does not qualify as an enhanced service. Thus where innovative "basic" network technology is introduced slowly to the network and conversion equipment is used to maintain compatibility with CPE, the protocol conversion does not render the

end-to-end basis from the demarcation point at the premises of the originating caller to the demarcation point where the call will be terminated.[35]

Vonage's VoIP service satisfies the FCC's net protocol conversion test. Vonage's service requires that the customer install computer equipment capable of sending and receiving IP packets on customer's premises. As a result, when a Vonage customer originates a telephone call, the customer's own equipment converts sound waves into digital IP data packets that travel over the Internet in an asynchronous mode. Vonage subscribers can also use their hardware to convert digital IP packets that travel over the Internet into sound waves when receiving calls. If the call is delivered over the PSTN, Vonage converts the IP packets generated by the customer's equipment into the TDM format used on the PSTN (and vice versa), and the call terminates at the distant end in an analog format, different from the format in which Vonage received it from its customer. Thus, Vonage's service performs a net protocol conversion as defined by the FCC.

C. Vonage's Service is an "Information Service" Pursuant to the Telecommunications Act of 1996

The 1996 Act defines "telecommunications service" as "the offering of telecommunications for a fee directly to the public or to such classes of users as to be effectively available directly to the public regardless of the facilities used."[36] The term "telecommunications" is defined as "transmission, between or among points specified by the user, of information of the user's choosing, without change in the form or content of the information as sent and received."[37] The definition of "telecommunications' and "telecommunications service" can be contrasted with "information service" which is defined by the 1996 Act as "the offering of a capability for generating, acquiring, storing, transforming, processing, retrieving,

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service enhanced. Third, conversions taking place solely within the network facilitate basic service and are not enhanced. *Amendment of Sections 64.702 of the Commission's Rules and Regulations (Computer III), Phase II*, CC Docket No. 85-229, Report and Order, 2 FCC Rcd 3072, 3081-3082 (1987).

[35] FCC rules define the demarcation point as the point of demarcation and/or interconnection between the communications facilities of a provider of wireline telecommunications, and terminal equipment, protective apparatus or wiring at a subscriber's premises. 47 C.F.R. § 68.3. At least for purposes of the FCC's access charge rules, a call "terminates" at the demarcation point. 47 C.F.R. § 69.2(cc).

[36] 47 U.S.C. § 153(46).

[37] 47 U.S.C. § 153(43).

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."[38]

The FCC has determined that these new statutory definitions are ***mutually exclusive*** and parallel the definitions of "basic service' and "enhanced service" developed in the FCC's *Computer II* proceeding.[39] In this fashion, Congress intended to maintain a regime in which information service providers are not subject to regulation as common carriers merely because they provide their service "via telecommunications."[40] Thus, as set out in Section IV.A. and IV.B. above, Vonage's provision of service fits the definition of an "information service" under the 1996 Telecommunications Act.

Any doubt concerning Vonage's provision of service has been recently resolved by the Federal District Court for Minnesota. The District Court determined that Vonage offers an "information service' under federal law.[41] As such, assuming *arguendo*, that the Commission were to assert jurisdiction over Vonage's service, the state commission would be preempted by Federal law from doing so. State commissions cannot impose common carrier obligations on Vonage's service offering by virtue of the District Court's finding that Vonage offers an information service under Federal law.

D. Vonage's Provision of VoIP is Similar to Computer-to-Computer or Computer-to-Phone IP Telephony; Not Phone-to-Phone IP Telephony

The FCC expressly considered Vonage's service configuration in its *Report to Congress*[42] and found that computer-originated IP telephony, such as that offered by Vonage, "does not appear to be providing telecommunications services to its subscribers." As a consequence, services such as Vonage's must be classified as information services for regulatory purposes.

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[38] 47 U.S.C. § 153(20).

[39] *Federal-State Joint Board on Universal Service*, CC Docket No. 96-45, Report to Congress, FCC 98-67 (rel. April 10, 1998) ("*Report to Congress*").

[40] *Id.* at ¶ 39.

[41] *See generally Vonage Holdings Corp. v. Minnesota Pub. Utils. Comm'n*, Civil No. 03-5287(MJD/JGL), slip op. (D. Minn. Oct. 16, 2003) ("*District Court Decision*").

[42] *Id.* at ¶ 87.

In the *Report to Congress*, the FCC analyzed two different kinds of IP telephony, one characterized as "phone-to-phone IP telephony," the other as "computer-to-computer IP telephony. While recognizing that different service configurations were possible, the Commission found that "phone-to-phone IP telephony" is characterized by calls originated over a "handset connected to the public switched network" that is terminated "to [an] ordinary telephone at the receiving end."[43] Although such phone-to-phone calls may be routed over an IP network even over the public Internet – the FCC said they "lack[] the characteristics that would render them 'information services' within the meaning of the statute."[44] Because "phone-to-phone IP telephony' calls are both originated and terminated on the PSTN, in the same TDM protocol used on the PSTN, the FCC found that no *net* protocol conversion takes place.

The FCC contrasted phone-to-phone applications with "computer-to-computer IP telephony, which it characterized as follows:

> In the case of "computer-to-computer" IP telephony, individuals use software and hardware at their premises to place calls between two computers connected to the Internet. The IP telephony software is an application that the subscriber runs, using Internet access provided by its Internet service provider. The Internet service providers over whose networks the information passes may not even be aware that particular customers are using IP telephony software, because IP packets carrying voice communications are indistinguishable from other types of packets. As a general matter, Title II requirements apply only to the "provi[sion] " or "offering" of telecommunications. Without regard to whether "telecommunications" is taking place in the transmission of computer-to-computer IP telephony, the Internet service provider does not appear to be "provid[ing]" telecommunications to its subscribers.[45]

As noted previously, some of Vonage's customers place computer-to-computer "calls," and thus fall explicitly within the above analysis. And, as explained previously, the more frequent cases of PSTN-to-computer and computer-to-PSTN calls involve a net protocol conversion and clearly qualify as an information service.

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[43] *Report to Congress* at ¶ 84

[44] *Id.* at ¶ 89.

[45] *Id.* at ¶ 87.

The FCC summarized its analysis by crafting a four-part test for determining when IP telephony services might be classified as telecommunications services, rather than information services. Telecommunications services, it found, are characterized by the following: (1) the provider holds itself out as providing voice telephony or facsimile transmission service; (2) the provider does not require the customer to use CPE different from that CPE necessary to place an ordinary touch-tone call (or facsimile transmission) over the public switched telephone network; (3) the provider allows the customer to call telephone numbers assigned in accordance with the North American Numbering Plan, and associated international agreements; and (4) the provider transmits customer information without net change in form or content.[46]

Since the regulatory status of VoIP services is a case of first impression in Missouri, there is no Commission case that applies the test set out in the FCC's *Report to Congress*. However, the *Vonage v. Minn. PUC* court applied this test and found that Vonage's service does not meet the four-part definition.[47] Although Vonage's service satisfies the first and third of these criteria (Vonage customers use the service as an alternative to placing conventional telephone calls, and can place "calls" to ordinary telephone numbers), it unequivocally does *not* satisfy the other two elements. Consumers must install special CPE (*i.e.*, computer equipment) that is incompatible with the PSTN, and the transmission *does* involve a net protocol conversion – from the IP format of the Internet to the TDM format of the PSTN.

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[46] *Report to Congress* at ¶ 88.

[47] *Vonage v. Minnesota PUC*, slip op. at 13.

IV. CONCLUSION

VoIP services must be examined on a case-by-case basis in order to determine the appropriate regulatory treatment of the service at issue. As described herein, Vonage does not "transmit" telecommunications services as required by the relevant Missouri statute. Additionally, Vonage does not offer an intrastate service. For these reasons, Vonage's service does not meet the definition of a "telecommunications service" under Missouri law and falls outside the Commission's jurisdiction.

The United States District Court for the State of Minnesota recently determined that Vonage's service offering is an "information service" under Federal law and state common carrier regulation of its service is preempted. Additionally, any state regulation of Vonage's service would be preempted by Federal law due to the interstate nature of Vonage's offering.

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CERTIFICATE OF SERVICE

I hereby certify that a copy of this document has been hand delivered or mailed, postage prepaid, this 20th day of November 2003, on the Office of Public Counsel, the Commission's General Counsel, and counsel for all parties of record in this matter.

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