

Written Testimony
of
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Hearing on VoIP: Who Has Jurisdiction to Tax It?

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Subcommittee on Commercial and Administrative Law

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Chairman Cohen, Representative Franks, and members of the subcommittee, thank you for this opportunity to testify on an issue that will benefit individual consumers, small and large businesses, continuing technology innovation, and the economy of the United States.

My name is John Barnes and I am the Director of Global Advanced Voice Product Development for Verizon. My primary responsibility and area of focus is the development, maintenance and enhancement of Voice over Internet Protocol (VoIP) services that Verizon markets to business customers.

The testimony that follows is intended to cover:

- a definition of VoIP services
- a brief description of how these services technically work
- why the services are inherently mobile
- description of how the services are typically packaged and sold to customers
- why the services are beneficial to businesses and consumers

This testimony should provide a better understanding of VOiP services, the technology and how VOIP is inherently mobile, necessitating modernization of the taxation methodology that applies to such services.

Definition of VoIP

VoIP stands for Voice over Internet Protocol. Simply put, VoIP is the conversion of traditional analog or digital voice into data packets that are then transmitted over an IP enabled data network.

Historically, in the large business context, voice transmissions originated from analog telephones or digital telephones connected to a PBX or key system. In a PBX or key system, there are multiple internal or intercom lines and a much smaller number of trunk lines that allow those internal lines to dial out to the public switched telephone network (PSTN). This is best demonstrated by the need to dial “9” from an inside line to reach an outside line. The voice calls are then routed to sending and receiving switches on the PSTN in order to be delivered to a receiving analog or digital telephone. In the consumer context, voice transmissions originate on a telephone at the customer’s premises and travel over a line that is dedicated to that customer all the way to the PSTN. This requires every household to have a dedicated line that sits idle much of the time and cannot be used by other households.

With VoIP, these voice transmissions are converted to IP signaling and voice media packets using either a VoIP phone or other conversion equipment at the customer location and are routed over an IP enabled data network. The IP enabled network may be either a private network or the public Internet. However, when one customer is not using the capacity, the capacity can be utilized by other customers resulting in greater efficiency and better utilization of telecommunication lines and maximization of resources. If VoIP calls are destined for another VoIP device, they may route directly to the receiving device over the IP enabled data network where they are converted back to a voice transmission using a VoIP phone or another conversion device at the terminating customer’s location. If the calls are destined for a traditional telephone connected to the PSTN, the calls are first routed to a device, commonly referred to as a media gateway, where the signal is converted back into a digital voice transmission and then routed to the PSTN where the call can be terminated on a traditional telephone at the terminating customer’s location. A media gateway is a device that is connected on one side to the PSTN switches and on the other side to an IP enabled data network. The function of the media gateway is to translate and route voice transmissions between other VoIP devices connected to an IP network and traditional telephones connected to the PSTN

How Carrier Based VoIP Services Work

Today, many VoIP telephony equipment manufacturers produce a wide variety of IP phones, IP enabled PBXs and key systems as well as analog or digital VoIP adaptors/gateways all designed to send and receive VoIP calls.

Over the past several years, telecommunications carriers have developed and marketed services to customers using these VoIP devices available in the marketplace.

Creation of these services has resulted in the development and deployment of carrier network architectures designed to provide intelligent call routing instructions and features. Specifically, VoIP devices interact with call routing intelligence (also referred to as a call control server, an application server or a proxy) to receive instructions regarding how and where to route a particular call. In addition to providing call routing instructions to VoIP devices, these call control servers provide basic and enhanced features to the VoIP devices through association to the customers. Basic features would include typical

capabilities, such as Caller ID or Call Waiting. More enhanced features would include capabilities such as simultaneous ring (the ability to route an incoming call to multiple devices simultaneously) or selective call screening (the ability to screen an incoming call and route to the VoIP device or voicemail or other routing option based upon criteria). These call control servers are highly capable and highly customizable and serve as the foundation to support future advanced service options. These features are all part of the VoIP service package many of which can be controlled by the customer without any interaction needed on the part of the VoIP provider. As you know, traditional telephone service requires a customer to separately subscribe to each desired feature which must then be enabled by the telephone company to work for that particular telephone number.

Why VoIP is Inherently Mobile

For most VoIP services, the customer operated VoIP devices described above have a traditional 10 digit North American Numbering Plan telephone number assigned to them. However, the uniquely identifiable characteristic for a customer operated VoIP device is the IP address assigned to that device. This is very similar to the electronic serial number (ESN) assigned and used to identify and validate wireless devices. This IP address is used by the carrier in conjunction with authentication information (user names and passcodes) transmitted by the VoIP devices to recognize and authenticate the customer operated VoIP devices and to provide services and features to those devices. IP addresses are a global phenomenon and have no correlation to physical addresses or geography.

As a result, while a VoIP device may have a traditional telephone number assigned to it, the VoIP device can be physically moved to any location where it can connect to an IP enabled data network and continue to send and receive calls. The call control server does recognize the IP address and validates the authentication credentials of the VoIP device but cannot determine the physical location of the device based upon its IP address.

This IP address associated with a customer operated VoIP device provides a unique type of mobility in that the devices can be connected and used to send and receive calls virtually anywhere they can be connected to an IP enabled data network including the public Internet. As carriers and software and equipment manufacturers continue to develop and enhance VoIP devices to become more portable, VoIP services will become even more mobile. For example, some equipment and software manufacturers and carriers have developed application software that can be installed on a laptop personal computer that can be used to send and receive VoIP calls just like any physical VoIP device. As a result, customers are enabled to place calls virtually anywhere they can carry their laptop computer and have wired or WiFi access to an IP network.

In an effort to accommodate emergency services call routing in the presence of this inherent mobility, most service providers have developed methods for permitting individual VoIP device end users to define a temporary location address for emergency services call routing purposes. Based upon temporary address information provided by the end user, service providers can validate the temporary address to determine whether it

is within a service area in which the service provider can route calls to an appropriate emergency service provider. If the address is not within a served area the VoIP device can be disabled from placing calls over the service providers VoIP service until it returns to an address for which the service provider can route calls to the appropriate emergency service provider.

The portability and IP address association that characterize these devices facilitates the VoIP service mobility that has been described above. While these technological changes provide substantial benefits to consumers, they also necessitate a reconsideration of the rules applicable to voice services that have traditionally been associated with the physical service address of the originating telephone device, such as taxation.

How Services are Packaged for Customers

For both business and individual consumers, VoIP services are typically packaged as a collection of basic and enhanced features as well as unlimited or defined local and long distance calling services for a monthly fixed price.

For business customers, the monthly pricing model is often extended one step further to be applied to simultaneous call capacity instead of individual VoIP devices. Specifically business VoIP services are often priced using structures similar to the purchase of traditional PSTN access capacity like the PBX system mentioned above. As a result, customers purchase sufficient simultaneous call capacity to support the maximum number of VoIP devices that may be communicating with the PSTN at the customer's busiest hour of the day/month and pay a monthly fee based on simultaneous call capacity. In an effort to optimize costs, the amount of simultaneous call capacity to the PSTN that a customer purchases is most often far less than the total number of VoIP devices that the customer may have in service, anticipating that not all VoIP devices will communicate with the PSTN at the same time. Again, this is similar to the intercom lines and the PBX trunk lines that require dialing "9" but it is much more flexible allowing the capacity to be shared by multiple locations and can take advantage of different time zones to reduce the total capacity needed.

While these bundled pricing structures do provide individual consumers and businesses with predictable monthly pricing and the opportunity to reduce their monthly costs, they do further complicate the ability to correlate specific charges for services to the physical location of an individual VoIP device that may have been mobile for some portion of time during the month.

VoIP Benefits to Businesses and Consumers

Most frequently, the primary benefit to businesses and consumers attributed to VoIP services is cost savings associated with combining their voice services with their IP network services, reducing the overall expense of having to purchase these two services separately.

While this is certainly a benefit, it only scratches the surface of the advantages afforded to businesses and consumers as a result of the operating efficiencies and enhanced applications made possible by VoIP services.

For businesses, VoIP services not only provide cost savings through converging their voice and data networks into one, because of the architectural flexibility of VoIP, but they also enable service providers to extend additional operating efficiency and business continuity benefits. As referred to above, in the area of operating efficiencies, some service providers can now offer the ability for business with multiple geographically distributed locations to share physical access capacity across the locations within their enterprise, substantially reducing their overall capacity costs. This is not technically feasible with traditional PSTN based services. Additionally, VoIP affords the architectural flexibility to reroute traffic real time. So, for example, in the event of a power outage or natural disaster a customer can reroute traffic real time from an affected area to an unaffected area to maintain business operations. And with the mobile nature of VoIP services the business continuity benefits are extended even further.

In addition to cost savings benefits, both businesses and consumers benefit from the continually expanding array of hosted basic and enhanced features enabled by VoIP services, some of which were discussed earlier such as simultaneous ring and selective call screening.

Carrying the concept further, many service providers have expanded the scope of their VoIP offerings far beyond traditional voice calling, to include a host of unified communication options such as instant messaging, short text messaging, and audio conferencing.

Through industry collaboration between service providers, software manufacturers and equipment manufacturers, through leveraging VoIP technology, voice calling becomes much more tightly integrated into the electronic tools that businesses and consumers use to communicate, making the communication options far more flexible and the communication itself far richer.

VoIP services significantly improve and enrich businesses' and consumers' voice calling experiences through enhanced features and capabilities, architectural flexibility, cost savings and operating efficiencies. As a result, demand for these services has grown exponentially and is expected to continue to grow to ultimately displace traditional PSTN voice services. With this growth, so grows the potential and propensity for these services to be increasingly mobile. Because of this inherent mobility of VoIP services combined with their exponential growth, it necessitates a near term reconsideration and modernization of the rules applicable to voice services that have traditionally been associated with the physical location of the telephone device, such as taxation.

Conclusion

Technology has outpaced the old rules that apply to the taxation of telephone services. Consumers are going to demand, and technology will provide, new VoIP services that are inherently mobile and cannot be taxed according to the rules that have applied to landline telephone services for many years. The rules need to be modernized so that a fair tax system will apply at the state and local levels to these new services. The good news is that such a system already exists for wireless services – Congress enacted the Federal Mobile Telecommunication Sourcing Act (MTSA) in 2000. I believe industry and government are in general agreement that Congress needs to expand the federal sourcing rules for wireless services to cover taxes applicable to VoIP services so that all parties can have certainty in the taxation of these services. My colleague from Sprint will explain further how this can be achieved by Congress to benefit consumers, businesses, technological innovation and state and local governments all at the same time.

Thank you for this opportunity to testify regarding Voice over IP services, the relevant technology and the inherently mobile nature these services. I would be happy to answer any questions the committee may have regarding my testimony.