

**Before the
Federal Communications Commission
Washington, D.C. 20554**

In the Matter of)	
Telecommunications Relay Services)	CC Docket No. 98-67
And Speech to Speech Services for)	
Individuals with Hearing and Speech)	
Disabilities)	
)	

**Comments of Dana Mulvany, MSW, LCSW
July 30, 2001**

I submit these comments in response to questions raised by the Commission in its June 29, 2001 Notice seeking comment on WorldCom's petition for clarification that Internet (IP Relay) is eligible for reimbursement from the Interstate TRS Fund.

Thank you for this important opportunity to comment on Internet relay services. I am a social worker living in California who has provided consultation to individuals and organizations about accessibility for people with disabilities. I offer these comments as an individual with bilateral severe hearing loss and not on behalf of any organization which which I am affiliated.

In this proceeding, the Consumer Information Bureau of the FCC wrote:

"Benefits. WorldCom states that its IP Relay service provides customers with many benefits, including the ability to make multiple calls simultaneously, make conference calls, and view websites while calling. Eventually, according to WorldCom, IP Relay will allow computer-to-TTY calls without intervention by a CA, and will provide additional features, such as graphics, text, and video. Some of these services may be software-based, and made available through free computer downloads, without a need for new hardware. We ask that commenters address:

1. the desirability of these and other potential benefits of IP Relay.
2. We also ask commenters to alert us to any potential disadvantages of handling TRS calls via IP Relay."

1. Potential Benefits

Internet Relay will be an enormous step forward in making relay service more accessible for people who need relay services. Many people who need relay services do not have a TTY; however, millions of people do have computers with Internet access. Internet Relay would enable many hard of hearing, deafened and deaf people without expensive TTYs to use relay service as needed at no additional cost. Many people with partial hearing loss need relay services for communication with only a few people whom they have difficulty understanding, but they presently have no formally authorized relay service for communicating with these people if they do not have a TTY. Consequently, many hard of hearing people are restricted to telephone calls with only those people whom they can understand by voice. Internet Relay would significantly improve functionally equivalent access to telephone service, especially in view of the fact that there is no federal program currently fully subsidizing the additional cost of adaptive telephone equipment for people with disabilities.

Some of the significant benefits of Internet Relay are:

- a) no additional equipment cost to the millions of people who already have computers and access to the Internet
- b) no additional cost to provide a text line for a two line voice carry over (2lvco) user when an Internet connection and voice line are already available
- c) immediate availability of TTY functionality in workplaces with Internet connections (installing an analog phone line for a TTY can sometimes be delayed for months and cost over \$1,000)
- d) the much greater availability of mainstream Internet-capable devices as compared to TTYs
- e) improved viewing of the text due to the larger displays of computer monitors
- f) the capability of software to easily increase font sizes or changing colors (especially important for the many people who have both hearing and visual impairments)
- g) the potential capability to use relay services *anywhere* with wireless devices compatible with Internet Relay
- h) the generally more ergonomic design of computer keyboards
- i) the potential capability of bringing more than one person with a hearing loss into a relayed call
- j) the potential capability of IP relay to be used for an incoming voice call that a hard of hearing person has trouble understanding
- k) the greater capability of IP relay to provide a choice of options, optional storage of user information, and customized web sites, all of which can help relayed calls become much more efficient, resulting in cost savings

The above benefits are very significant in terms of improving functionally equivalent access to telephone service. In my opinion, they are much more compelling than the benefits WorldCom appears to have described:

- i) The ability to make multiple calls simultaneously does not seem to be a cost-effective way to use relay services, and I do not anticipate that this would be an important benefit to many people.

ii) Internet relay services would seem to differ in their ability to handle conference calls only in the possibility of bringing other text users into the call. This by itself would be a useful feature for conversations involving more than one person who requires text communication. However, most conference calls involve multiple hearing people; both regular relay services and Internet relay services would have difficulty adequately relaying such conference calls due to the slowness of typing. Concerted efforts need to be made to improve the speed of relay for such conference calls in order to provide true functional equivalence to teleconferencing.

iii) The ability to view web sites while on a call is certainly beneficial, especially if the software of IP relay services is configured to make it easier to view both web sites and the relayed call at the same time, and to alert the user when new text is appearing via the relayed call. However, in my opinion, the other benefits of IP relay enumerated in a through k above seem more relevant for functional equivalence to telephone service than this feature.

It is very unfortunate that WorldCom did not provide more compelling reasons for supporting Internet Relay in its petition; this may have led many people to emphasize the weaknesses of WorldCom's petition and to trivialize the benefits of Internet Relay. I ask the FCC to instead recognize the actual benefits of Internet Relay and its much greater capacity to improve and to better meet the needs of people with communication disabilities for functionally equivalent access as technology advances.

2. Potential disadvantages

I personally have attempted to use WorldCom's IP relay service multiple times since late November of 2000. One drawback of WorldCom's current implementation is that the connection has frequently been dropped with no visual indicator of the dropped connection to the user other than a false indication that the call is still connected. I have been left waiting for several minutes before realizing that there was a problem with the connection, and I do not know how the operator has handled the termination of the call with the other party. Obviously such issues need to be resolved. I would hope that it is possible to provide an accurate visual indication of whether there is a live connection to the call. I note that some of these difficulties may be due to the particular structure of WorldCom's IP relay and the frequency of broken connections may be significantly decreased with other implementations of Internet relay services, or a direct Internet connection on the terminals of WorldCom relay agents.

It is my hope that the high rate of dropped calls may be due to WorldCom's Internet Relay service being of a temporary nature rather than permanently installed. I would urge the Commission to ensure that these connection problems and other minimum standards are met on a consistent basis prior to beginning reimbursement.

The Consumer Information Bureau also wrote:

"Cost Recovery. WorldCom has requested that the Commission require reimbursement of IP Relay from the interstate TRS Fund for all calls, whether interstate or intrastate. We note that WorldCom states that there is no way of determining the origin of IP Relay calls, because Internet

addresses have no geographical correlates. Is this an appropriate way to reimburse IP Relay providers? Is there a mechanism in place, or can a mechanism be developed, by which a provider can determine the geographic location of the originator of a call? We seek information on the best means of recovering the costs associated with IP Relay. Is there an effective method to estimate the percentage of calls associated with intrastate versus interstate usage, and divide reimbursement accordingly? If such a method exists, would it be utilized on a call by call basis, or would it employ a formula that divides the calls proportionally? Should computer-to-TTY calls without intervention by a CA be considered reimbursable from the TRS fund?"

I am not aware of any mechanism which would reliably determine the geographic location of an originating call. Callers could certainly be asked to provide their current location, which would also be useful for 911 purposes and could be stored so it does not have to be typed over and over again. In some cases, though, a person may be mobile and using a wireless Internet device, such as passenger in a car pool using a wireless modem in the San Francisco Bay or the Washington, D.C. area.

It is relevant to note that hearing people are able to make long distance calls for free using the Internet, using Dialpad or other Internet telephony service providers. Dialpad (<http://www.dialpad.com>) has publicized that the actual cost to the company for such calls is only a penny per call; costs are recouped with advertising revenue. WorldCom indicates in its own comments responding to this proceeding that it is prepared to offer Internet relayed calls with no long distance charges. The reimbursement from TRS funds would certainly appear to compensate Internet Relay services amply for long distance costs. Due to the low cost of high volume long-distance calls, I propose that relay services absorb the cost of long distance for calls within the U.S.A. The current slowness of relay services will still tend to suppress the use of relay even if calls are free.

The other piece of this proposal is that computer-to-TTY services (bridges) would cut down the use of expensive relay services enormously if there is no cost to the user for using bridges. Automated bridges that do not require human intervention, such as Computer-to-TTY, TTY to Internet, or Internet to TTY, should definitely be subsidized by TRS funds because they are a much more efficient alternative to relayed calls. Such bridges should not be funded at the high rate of relayed calls, but should be amply funded to cover the costs of running and upgrading them along with extra costs such as providing free software and upgrades. I highly recommend that TRS funds be used to fund automated bridges, including bridges which would support VCO, HCO, and STS services.

Still another possibility for use with automated bridges is optional technology to enable voice users to dictate their speech through the bridge, using speech recognition software. The idea here is that frequent voice users of relay services, such as family members or other significant others, would be highly motivated to train speech recognition software to their own speech to communicate directly and quickly with the other party. Rather than endure the inefficiency of relay, with its many long periods of silence, or to have to type everything, at least some frequent voice users would appreciate the opportunity to have direct control and monitoring over their

communication with the text user. Speech recognition software could be made available on the Internet and even be made operable via a voice portal that is accessible by a regular phone line as well as via the Internet. In the meantime, automated bridges could be designed to work with existing speech recognition software available on the market.

Note, however, that many people who use ASL grammar rather than pure English grammar will still require the use of relay service operators who are trained to translate between ASL grammar and English grammar, or of video relay interpreting services. None of the above comments should be construed as saying that relay services are not vital and necessary. Rather, many people are currently forced to use relay services who would prefer to use more direct and less expensive forms of communication if they were made available; the lack of automated bridges has required an overuse of relay services at a high cost to TRS funds. It is possible to instead use our limited resources more effectively to provide higher-quality services.

Minimum Standards

With an efficient implementation, I see no reason why Internet Relay cannot meet many of the minimum requirements applied to regular TTY-to-voice relay service. However, people using the Internet with a single phone line may have difficulty attaining consistent, high quality Voice-over-IP, which would have ramifications for VCO or voice-over-IP to text. Possibly there is or can be technology available to provide this capability. If a high quality of audio can be consistently provided, then the minimum standards of regular relay services would seem attainable. However, I think Internet Relay should be held to a higher standard in some areas due to the greater flexibility of options available with the Internet. For example, Internet Relay services should allow the user to adjust the font and contrast to his or her own needs. If readily achievable, the software of Internet Relay services should also be compatible with standards for refreshable braille displays so that deaf-blind people can also use Internet Relay.

One of the benefits of Internet is that it is not difficult or expensive to create different web pages for different needs. Separate web pages could be created for outgoing 2lvco, VCO, TTY to VCO, VCO to VCO, etc.; if these pages were well designed, they could help relay agents understand more quickly what they need to do (a frequent problem when 2lvco service is requested). The software on the web page could allow relay users to store frequently dialed numbers with instructions for specific phone numbers, such as their own voice phone number. It may be necessary for a committee of consumers of relay services to provide guidance about needed improvements, however, in order for relay services to keep improving their ease of use and efficiency.

I anticipate that Internet Relay will have a significant impact on increasing the use of two line voice carry over (2lvco). However, an important unnecessary barrier to 2lvco use needs to be eliminated. Traditionally, 2lvco users have been required to install and pay for three-way calling on the voice line. Instead, all relay services should be required to make outgoing calls for voice users upon request. I believe that relay services already have the technological capability to make and bill for such outgoing calls and I am unclear as to why 2lvco users have been required to have 3-way calling for outgoing calls. If the barrier of requiring three-way calling were to be

removed, an IP relay caller could initiate a 2lvco call anywhere that there is both an Internet connection and a voice telephone. The relay agent would still be able to hear both parties and type via the Internet. A simple pre-programmed command via the Internet relay could direct the relay operator to hang up the other call when desired, and the 2lvco user would be free to continue with other calls if desired.

Internet Relay should also provide the ability for voice callers to connect to an Internet user. This would be invaluable for hard of hearing people who need relay assistance with incoming voice calls (i.e., incoming 2lvco, otherwise known as Reverse 2lvco). In this scenario, the hard of hearing person would need three-way calling on the voice line, and would place the voice caller on hold in order to call Internet relay. The Internet relay agent would be directed to communicate with the 2lvco user via the Internet, and then the hard of hearing person would carry on with the rest of the procedures to handle a Reverse 2lvco call.

I urge the Consumer Information Bureau to proceed with reimbursing Internet Relay services that do meet minimum standards with the condition that steady progress is made towards providing all forms of relay services via the Internet. Efforts should also be made to monitor and ensure the quality of Internet relay services to ensure minimum standards continue to be met.

Thank you for addressing this timely advance in telecommunications.

Sincerely,

Dana Mulvany, MSW, LCSW
Campbell, California
dmulvany@usa.net
http://Dana_Mulvany.tripod.com