Access to Voice over Internet Protocol ("VoIP")

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Introduction

The adoption of voice over IP as a mainstream telecommunication technology is happening at an ever-increasing rate.Just this month, Time Warner Cable reached agreement with Sprint and MCI to market telephone services delivered over the internet. The voice over IP services (to be called Digital Phone) will include number portability and other mainstream features.Increasingly, companies, government agencies and other large organizations are turning to voice over IP. One company announced it had sold over two million VoIP phones alone.

As people move from PSTN phone technologies to voice over IP phone technologies there is a danger that, if accessibility regulations are not carried forward to the new technology, people with disabilities and those who are older will lose access to telecommunications. These comments are written to address this concern.

What needs to be done to ensure that social responsibilities are met (e.g., quality of service, E911, law enforcement assistance, universal service)

This is a key area when considering voice over IP regulation - and the one on which I would like to focus my comments.

The regulatory obligations were created by Congress to address issues that have not been addressed by regular market forces.As we move to VoIP some of the market dynamics are changing and some of the problems that were not naturally addressed under PSTN would be addressed under the market forces of VoIP.The dynamics around competition for example are quite different.

However, a number of areas are not competition based, and the new VoIP market will not provide them via normal market pressures. These include:

1. **E911,**
2. **Law enforcement assistance,**
3. **Universal service, and**
4. **Disability access**

Three of these were included in the question - and in other people's comments. I will therefore focus on the fourth - Disability Access.

Disability access in mainstream products is one of the areas that has never been addressed by natural market forces Occasionally a mainstream feature that has benefit to one subgroup or another will appear, but accessibility for most all disabilities is not something that is addressed by normal market forces. . And telecommunications products have presented a host of access issues to people with disabilities and those who are older.

In our work, we communicate frequently with companies that are introducing new technologies. We do this because accessibility is cheapest to build in at the early stages of development. We have observed that, when new technologies are introduced, unforeseen technical issues always pop up, and companies address the most important ones and work on them first.Disability access problems are often on the list, but market forces never are strong enough to move them high enough on the list to get to the action level.All companies have long lists of things they never get to.

The exception is when there is regulation (or concern about regulation) to cause the access issues to move up the action list. Often, when there is even talk of regulation, there is action. But if that talk goes away, the action goes away -- and accessibility groups and task forces within companies have repeatedly been disbanded when regulations failed to appear or when regulations failed to be enforced.

For example, hearing aid compatibility disappeared when a new speaker technology came along. Congress passed the Hearing Aid Compatibility Act to get it back in, but left an exception for cell phones.When cell phone technology advanced and the market exploded, hearing aid compatibility was not provided again - since it was not required - and those who use hearing aids again lost out. The FCC exhorted the wireless industry and hearing aid industry to solve the problem voluntarily. Although this led to some technical work on a standard, it did not result in hearing-aid-compatible cell phones. It was not until the agency again turned its attention to this by adhering to the provision in the law directing the FCC to monitor the cell phone exception for problems, that we began to see progress.

When Section 255 accessibility standards were first announced a lot of action was taken looking at accessibility. People from industry even demonstrated a prototype phone that could talk for people who were blind.Today however,

companies do not see Section 255 as having any teeth. It is for this reason that, for the first 7 years of the law's existence, cell phones accessible to the blind did not appear on the market. Although there are some special phones now appearing the vast majority of those who are blind still have no access to even basic cell phone functionality beyond dialing by feel.They cannot tell if they are roaming (and are going to be hit with big surcharges); they can't tell if they have a signal; they can't even tell if their battery is going to die soon; and they have no access to the phone menus.This is true even on cell phones that have speech technology built in for mainstream features - but it's not used to provide accessibility.

People who are older, have lower vision, are hard of hearing, have physical disabilities, are all having problems with cell phones; - problems that could have been addressed by simply changing the software in the phones.

The same pattern is appearing in the voice over IP technologies.

Access to voice over IP is very important to people with disabilities and those who are older. It is already starting to take the place of traditional phones in many enterprises - and many individuals are concerned with their ability to function within those enterprises.

When VoIP rolls into *apartment houses, nursing homes, and elder care facilities* it will be important that individuals with disabilities and people who are older will be able to access and use those phones. And with the rapidly aging population, the need for access by these individuals is going to continue to increase.

For some people with particular types or degrees of disabilities, VoIP technologies may be easier to use even without regulation.But these will be the exception - and only occur where mass market needs happen to coincide with their needs. There is no market force to ensure that general access will occur -- or that the needs of people with most types or degrees of disabilities will be addressed whenever their needs differ from those of the mass market.

The current discussions around VoIP by companies and standards groups have shown that the aspects of Voice over IP that are getting serious discussion are those where there are regulations, enforcement or threat of enforcement.

That's not to say that there are not advocates within companies -- because there are. But they often find that they are unable to sell their initiatives within the companies because of the highly competitive nature of the market. It's simply not good business to pay attention or devote resources to disability access if you're not required to -- or more importantly -- if your competitors are not required to.

Market pressures have not and will not cause telecommunication to be accessible by people with disabilities and those who are aging in any but spotty, specific and temporary ways. And we often see even these anecdotal instances disappear later.

But companies are not to blame for this. Profit driven companies are not bad. In fact those are the ones that we all want in our investment portfolios and in our retirement funds.However, regulations are sometimes needed. Regulations are our way of putting societal factors into the profit equation - so that the natural market forces - and the natural forces within companies - can come into play and cause access to appear in products.

The wonderful thing about voice over IP is that this transmission format, and the types of telecommunication technologies used to implement it, make it easier to implement accessibility than in any technology before.

For example, one technology company called Avaya has just released a phone program that, when loaded onto the phone server, immediately allows much of the phone functionality on all of the phones to be accessible to those that are blind. And these don't require any change to the phones.With small changes to the phone software, full access could be gained to the phones without any hardware changes.

Trace Center and Gallaudet University are currently working with Cisco on a technique that would allow every phone within the organization to be instantly capable of text communication (with or without voice carryover) simply by installing a software program on the call manager server.A deaf person could then walk up to any of the 10,000 phones within the company and be able to communicate in text (or in text and voice) without needing any special equipment. They could then not only use the phone on their desk, but also on a colleague's desk, in the conference room, or the lunch room phone on the wall.This can be done without change to the software on the phones and in fact this can be done on phones which are installed today.

These are just two examples -- and both efforts have been enabled by the FCC's recent interest in voice over IP - which has enabled individuals to move forward within their companies.

There is nothing about voice over IP that makes accessibility harder than with PSTN. VoIP does present some new issues, but solutions for them are already known.We are hearing from those in industry that they cannot move forward with access implementations until it is clear that their companies will either have some advantage, or at least not be at a disadvantage, for implementing access while competitors are doing something else.

It is both important and necessary to carry disability access forward into voice over IP. It is technically feasible and, as the regulations are enforced so that there is a level playing field, it is commercially feasible and practical to implement VoIP technologies -- with great effect for those with disabilities and for those who are older.