Proceeding: IMPLEMENTATION OF SECTION 255 OF THE TELECOMMUNICATIONS AC Record 1 of 1

Applicant Name: Gregg C Vanderheiden

Proceeding Name: 96-198 Author Name:

Lawfirm Name:

DOCKET FILE COPY ORIGINAL

Contact Name: applicant_name Contact Email: gv@trace.wisc.edu

Address Line 1: Trace R & D Center

Address Line 2: 5901 Research Park Blvd

City: Madison State: WI

Zip Code: 53719 Postal Code:

Submission Type: CO Submission Status: ACCEPTED Viewing Status: UNRESTRICTED

Subject:

DA Number: Exparte Late Filed: File Number: I-

Calendar Date Filed: 06/30/1998 10:25:38 PM Date Disseminated:

Official Date Filed: 07/01/1998 Filed From: IINTERNET

Confirmation # 1 998630670792

INTERNET FILING

96-198

7/1/98

FEDERAL COMMUNICATIONS COMMISSION

In the Matter of	)
Implementation of Section 255 of the	) WT Dkt. No. 96-198
Telecommunications Act of 1996	)

COMMENTS OF
Gregg C. Vanderheiden, Ph.D.
Director
Trace R & D Center
University of Wisconsin Madison

I. INTRODUCTION

The Trace Research & Development Center, University of Wisconsin-Madison submits these comments to the Federal Communications Commission (FCC or Commission) on its proposed Section 255 rules. The Trace Center is a research and development center focused on access by individuals with disabilities to standard technologies, particularly computer, information, and communication technologies. The Center works extensively with both consumers and industry, and has been successful in getting numerous extensions built into the human interface of standard product that make them more usable by individuals who have disabilities. The Trace Center was also a participant in the Telecommunications Access Advisory Committee formed by the U.S. Access Board.

The Trace Center appreciates the efforts being undertaken by the FCC in trying to address this area, and the difficulty of the task in light of the rapidly changing nature of the technology.

Overall, we believe that the FCC has done a good job in its initial steps toward implementation of Section 255. There are many positive and insightful comments and approaches that have been taken in the NPRM. The places where we have concerns or suggest changes deal mostly with a concern that some of the rules as written are much better targeted at the technologies of today and yesterday, than they are the technologies of tomorrow. They do not fully take into account the changing nature of both the technologies and the way companies are building and marketing products. It is of great concern that the guidelines may in fact have little effect or relevance for most technologies as they will exist in 5-10 years. Also, the rules are written in a way such that the shifting patterns and strategies used by companies, and the way that they manufacture and market products, can cause telecommunication and CPE products and services to fall outside the scope of these rules. Whether this is done intentionally to avoid Section 255 or is a function of business forces is not important. What is important is that the rules should be written in such a fashion that the telecommunication technologies of the future will be as accessible to individuals with disabilities as was the intent of the drafters of the legislation.

These comments are organized into two parts. The first is a series of comments, in NPRM order, addressing as many of the questions in the NPRM as possible. The second part is a series of short 1-2 page thought pieces, many of which explore an idea that may relate to more than one issue in the NPRM.

COMMENT 1 -- Reference Paragraphs 24-30

We applaud the conclusion that the regimen can be best implemented by adopting specific guidelines concerning the requirements of Section 255.

We also applaud the decision of the FCC to use the Access Board's performance guidelines as the starting point for implementation of Section 255. These guidelines were developed as part of a joint industry-consumer panel, and reflect the primary goal of industry, that any guidelines specify WHAT needs to be achieved for products to be accessible, but do not specify HOW industry must do this. Thus, industry's ability to innovate is preserved. Similarly, the mandate to make products accessible to all people with disabilities where readily achievable is also preserved, while providing industry with some definition of what "accessible" entails.

With the "readily achievable" clause attached to each of the guidelines, industry is not prevented from deploying new technologies or new products simply because suitable access techniques are not known or not practical. They would, however, be required to implement the guidelines with new products and new technologies whenever it was readily achievable to do so (bearing in the mind that the test of "readily achievable" is based upon the presumption that the accessibility measures were considered from the beginning of the development cycle - or at whatever point in the development cycle the technique became generally known).

COMMENT #2 -- Reference Paragraph 30

We applaud the decision of the FCC to interpret Section 255 in a way that ensures that telecommunication services and equipment will be treated consistently. As noted in Extended Comment C, Seamless Integration of Future Telecommunication Systems, it will be very difficult in the future to separate hardware from software from service. Having different rules for each would cause no end of confusion, both for manufacturers and for the FCC, not to mention consumers.

COMMENT #3 -- Reference Paragraphs 35-42

We disagree with the FCC on the very narrow interpretation of what would be covered under Section 255. The whole Telecommunication Act was intended to open up competition and to allow for the innovation and development of next-generation telecommunication technologies. Although other rulings for other purposes have caused some terms to have been given particular meanings in regulation, it is not clear that Congress would intend those definitions to apply in this particular area. In fact, as noted by the FCC, there is a problem with multiple uses of the

same term by different people in ways that are clearly meant to refer to different technologies or ranges of technology. Looking at the definitions used in Section 255 itself (rather than looking to other sources for definition), one finds a definition that seems to be quite broad, and to cover telecommunication and what is now termed "enhanced telecommunication" services of quite a broad nature.

Did Congress really seek to provide access to "voice-to-voice" communication but not allow an individual to leave voice mail if the person they were calling was not there? Did they want to provide access for individuals who can talk back and forth but not for individuals who would converse by typing back and forth interactively or via e-mail? We will soon have digital packet-based communication for all types of voice, data, etc. As this occurs, we may have conversations where two people are speaking with voice and two people are typing back and forth simultaneously. Presumably live typing of text back and forth would be covered. When using live typing of text in a conversation, it is possible for both sides to be typing at the same time. When a person finishes their message, it would be sent across (or it could appear live as they were typing it). This technique is very helpful for individuals who type more slowly, as it allows people to prepare messages while other conversations are going on. In order to not interrupt, the polite thing to do would be to prepare the message and wait for a point in the conversation to interject it. According to the definitions being put forward here, it appears as though allowing the text to flow as it is typed would be allowed, because it would be very similar to talking. The delayed injection of the message would not, since it would more closely approximate e-mail, where a message is sent asynchronously or delayed. If this were deemed to be covered because the individual read it as soon as it was received, then you would find that it was covered, but in a five-way conversation it would not, since an individual might receive 4 or 5 of these text responses simultaneously, and would store them up and read them in order.

The point being made here is that as we move into the new technologies, we are going to see a seamless continuum between live conversation, messaging, people who are logged into three conversations simultaneously and moving between them and catching up by simply reading the text transcripts of the conversations, etc.

A primary concern of the drafters of the legislation appears not to be cutting off individuals with disabilities from the emerging telecommunication structures being set up, but enabling them to access the developing communication technologies. Will this be served with the proposed interpretations?

Communications within a company that in the past were carried out by "face-to-face" telephone calls are now being carried out using voice-mail exchanges, e-mail exchanges, etc. Thus, providing access to the traditional type of telephone communication, but excluding access to the new forms of telecommunication that companies are increasingly shifting to, would be similar to providing access to the telegraph at a time when everyone is shifting to the telephone. Telegrams are still used today, one could argue. However, they would not be a sufficient mechanism for communication in today's business world, any more than voice telephony will be a sufficient means of communication in the world of tomorrow. We do not believe that this was the intent of Congress in writing this section, and we do not believe that the FCC should allow a

tangle of definitions or terms that were developed in other contexts to interfere with the proper implementation of this important legislation.

We would recommend that the FCC return to the definitions found in Section 255 for its guidance:

> "Telecommunications -- the term 'telecommunications' means the transmission between or among points specified by the user, of information of the user's choosing, without changing the form or content of the information as sent and received."
>
> "Information Service -- The term 'information service' means 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

Further, it is suggested that the definition of information services should be interpreted to relate to such things as web sites, databases, and other information stores, and not to relate to messaging technologies that might involve buffering of communications and/or delayed delivery, etc.

Or to put it more succinctly:
Actions, which primarily constitute transmission of information by a user to a target, would fall into the ***telecommunication*** definition. The offering of a plethora of information that is not targeted at a particular user would fall into the category of an information service.
The offering of a plethora of information that is not sent by a particular user but is rather retrieved by the user (from a larger set of information) would fail into the category of an information service.

Voice communication, text chatting, using sign language over a video phone, sending a fax, sending e-mail, messaging, and paging would fall into "communication" and therefore into telecommunication.

Accessing a web page, a database, an on-line library, fax-back services, etc., where the user chooses information from a store of information, would fall into the definition of an information service.

Certain information services, such as directory assistance, might still be considered part of the process of placing a phone call (or other telecommunication act) and might therefore fall under Section 255 but they would still be information services at their core.

COMMENT #4 -- Reference Paragraph 45

We concur with the FCC's proposal that all entities offering telecommunication services, including aggregators, should be separately subject to Section 255, without regard to accessibility measures taken by the service provider who originates the offering. Further, we concur with the FCC's comment at other points in the NPRM that equipment and services be treated similarly, and that should extend to this as well.

COMMENT #5 -- Reference Paragraph 46

We concur with the evaluation that Section 255 can only be applied in multi-use equipment to those components that relate to telecommunication functions. We believe, however, that they should apply to the broad range of telecommunication functions rather than the narrow focus currently cited in the NPRM.

COMMENT #6 -- Reference Paragraph 53

The FCC asks for comment on how a manufacturer who creates a non-telecommunication product should be treated when their product is incorporated into a telecommunication application. As discussed in our extended comments (Definition of Manufacturer, Extended Comment D), we believe that the equipment should be subject to Section 255 if it is manufactured for or marketed as equipment that would be used in a telecommunication system. Within this application, however, only those aspects or components of it that are actually used for telecommunication would be subject to Section 255.

COMMENT #7 -- Reference Paragraph 56

As discussed in Extended Comment B, "Is Software Included In Section 255?", we believe that software that is designed for or marketed as providing telecommunication functionality should be covered under Section 255, whether it is bundled or is sold separately.

COMMENT #8 -- Reference Paragraph 58

We strongly concur with the FCC's conclusion that Section 255 should apply to all manufacturers offering equipment for use in the United States, regardless of country of origin. This is essential to maintaining a level playing field and to achieving cost-recovery needed for ready achievability (see Extended Comment H, Calculation of Readily Achievable Expenses).

COMMENT #9 -- Reference Paragraph 66

For comments relating to how responsibility for any guideline or standard should be handled when multiple entities are involved, see Extended Comment D, Definition of Manufacturer, and E, Chain of Accessibility.

COMMENT #10 -- Reference Paragraph 73

We concur with the FCC's combination of terms "accessible" and "usable" under the single term "accessible." This combination appears to be both logical and simplifying.

COMMENT #11 -- Reference Paragraph 79

The FCC seeks comment regarding the responsibility of manufacturers and service providers for aspects that are not under their direct control. Comments in this regard are provided in Extended Comment F, "Direct Control."

COMMENT #12 -- Reference Paragraph 84 and Paragraphs 91-92

The FCC proposes to exclude devices such as hearing aids from the category of peripheral equipment. Presumably, the FCC is considering hearing aids to be part of the individual and thus to fall under the category of direct accessibility. This is philosophy similar to that taken in the Access Boards guidelines, which list compatibility with hearing aids in the direct accessibility section rather than the compatibility section. If this is done, one might think of this category as "personal" compatibility, in contrast to "peripheral device" compatibility. Personal compatibility (compatibility with the person and their normal functional extensions such as hearing aids, wheelchairs, prostheses or orthoses) would then be considered as part of direct accessibility.

If this is done, the third item currently listed under "Compatibility," which deals with prosthetics, should perhaps be moved up to the direct accessibility section. This would leave only device interconnection issues in the compatibility category of the Access Board guidelines.

(See Extended Comment G, Definition of "Special CPE" And "Peripheral Devices.")

COMMENT #13 -- Reference Paragraph 90

The FCC requested comment as to whether a device should be considered "commonly used" if it were in a statewide equipment distribution program. We would recommend that this ***not*** be used. Otherwise, manufacturers would have a set of devices that they are supposed to be compatible with which could change from month to month based on whether one state or another decided to add a product to their distribution program.

On the flip side, there are many devices that are used by people with disabilities that will not appear in state programs either because of the semi-political nature of the programs or the fact

that devices may not cost enough to be included. For example, one common device that would be used would be a simple earphone. This is something that is very easy for manufacturers to design their products to be compatible with. It is also a very powerful technique for individuals who are blind or who have a hearing impairment. Yet its cost is so low that it is not something that is likely to be put into a state distribution program simply because it would cost more to distribute it than it would to pick one up at Radio Shack for $1.98.

Thus, this provision is not desirable from the user end, and would be almost unworkable from the manufacturers' end -- since it would require a manufacturer's products to be compatible with a list of devices that could change at any moment and in a quite unpredictable fashion, given the 50 states and the wide variations in their programs.

COMMENT #14 -- Reference Paragraph 92

We concur with the FCC that the compatibility standards from the Access Board be adopted, and that the topic also be left open to future revision to account for future technical advances. As noted in the previous comment, we suggest that Item 3, "Compatibility of Controls with Prosthetics," be moved from the compatibility section up to the direct accessibility section, where hearing aid compatibility is listed, if the FCC adopts the concept of personal compatibility as including devices commonly used by individuals to enhance their personal abilities.

COMMENT #15 -- Reference Paragraph 93

The FCC requests comment as to when the compatibility provisions apply. The law states that they apply when direct accessibility is not possible. A careful read of the law would seem to indicate that the compatibility provisions are required when the product would not be accessible by each individual -- that is, if the product were directly accessible to Person A but not to Person B, the product should be compatible with Person B's peripheral devices where readily achievable. Thus, the compatibility functions would need to be provided in most all cases (where readily achievable) unless the product were so accessible that there were no people excluded who could be included through the connection of a peripheral device.

COMMENT #16 -- Reference Paragraph 120

We concur with the FCC's belief that only features known at the time the product was being developed should be used, rather than techniques that become known at or near the time that the product is introduced. It should be noted, however, that products sometimes begin their development years in advance. They only begin serious production design, however, in the year or so immediately preceding their manufacturer, so that they can take advantage of the latest technical developments. Companies should not be held accountable for advances that occur only in the latter stages of their product development and testing. However, they should be expected to try to incorporate new advances when they become aware of them at any point where their design is still flexible, even if a product has been in development for some years.

With regard to products that are on the market, we do not believe that retrofit design is indicated (except perhaps as a punitive measure for companies that blatantly ignored Section 255), unless the product is undergoing other revisions that would have easily allowed the access provision to be added.

COMMENT #17 -- Reference Paragraph 132

The FCC asks whether contact points should be provided. We feel that the provision of contact points is essential. This is important for both large and small companies. It is recommended that they be provided in a fashion similar to other FCC notifications -- that is, companies could include a note in the box or prominently at the beginning or end of the user documentation. The notice should provide the phone, fax, e-mail, etc., for contact points for issues around accessibility. This notification would not need to be a specific person's name, but could rather be an office or a person by title (e.g., "Section 255 Compliance Officer").

It would also be useful if information were provided as to how to contact the FCC.

COMMENT #18 -- Reference Paragraph 136

A five business day response period was cited for companies to respond to a complaint. It is believed that this is too short a period. It is unlikely that companies can gather sufficient information to address a complaint in this period of time unless the company has been regularly receiving complaints about the issue. We appreciate the FCC's concern for rapid response, but feel that this would be difficult.

COMMENT #19 -- Reference Paragraph 151

In a similar vein, the FCC proposed that consumers respond within five days after the filing time for answers had expired. Later in the paragraph, the FCC refers to a 15 calendar day reply period. It is not clear to us what the total response time, then, for the consumer would actually be, but it appears to be too short.

It is entirely possible that a company might provide a large volume of materials or technical materials, which the consumer may need time and assistance to interpret. Since the reason for expediting the process seems mostly to be to provide relief for the consumer, it is suggested that the response time for the consumer be somewhat generous to allow them to deal with materials that may very well be beyond their ability to evaluate without securing assistance. Their resources will, in all likelihood, be considerably less than those available to the company, and response times might reflect this.

SAME GUIDELINES FOR EQUIPMENT AND SERVICES

(Extended Comment A)

We applaud the FCC's tentative decision to use the Access Boards guidelines and to apply them consistently across both products and services. Due to the direction that technology is moving, THIS EQUAL TREATMENT IS ESSENTIAL.

BACKGROUND AND RATIONALE:

In the past, there has been a relatively clear distinction between products and services. Products were generally things you held in your hand or could touch. Services were something that was performed to one's benefit.

In the area of telecommunication, however, it is becoming increasingly difficult to tell a (hardware) product from a service (product). Hence, some services can directly replace products on a function-by-function basis.

Example 1:

Person A buys a telephone that she uses to call her aunt in Chicago, who also has a telephone.

Person B has a laptop computer that is NOT a piece of telecommunication equipment. It does, however, have a cable modem on it, which Person B uses to link into a web service provider over his cable TV connection. One of the services of his Internet provider is IP telephony. When Person B logs into his server's web site, a module automatically downloads to his laptop computer. Using the built-in speaker and microphone on his laptop, this software module allows Person B to pass streaming audio to and from the server. On request, the server will take this streaming audio and direct it to any other of its allied providers across the country. That provider in turn will take the streaming audio and put it onto a local telephone line.

The result is that Person B is able to use his laptop as a speakerphone, and is able to make calls to his aunt (who is also in Chicago and is using a standard telephone).

Although Person B is able to make the exact same phone call to the exact same city, he is not using a piece of Customer Premises Equipment according to the proposed FCC guidelines. The equipment he is using is a standard PC with a standard cable modem to a standard Internet backbone. No "telephones" or "phone lines" are involved on his end of the transaction. Person B does, however, use a piece of software and a service provided by his Internet service provider (ISP) to make the equivalent of a phone call.

It could be argued that the situation in Person B's case should not be covered because it is a combination of so many technologies that it is unreasonable to figure out who would be responsible for accessibility. In fact, the argument does not hold. The technologies are no more

complicated than what is used to make a standard phone call, if one considers all of the technologies that are involved in getting one phone user connected to the other. Also, the interface, the aspect of the phone call that is the primary issue around accessibility, would be contained in a single piece of software downloaded to the individual's computer and/or running on the service provider's equipment. If the service provider were to ensure that the interface on the software that they used for their IP telephony service were accessible, the system would be accessible.

CONCLUSION

By treating equipment and services equivalently, the FCC can maintain a level playing field and keep companies from confusing the matter by arguing that their product for making telephone calls is a service rather than a device. Also, it keeps a level playing field between those companies that are implementing and marketing telecommunication products primarily as stand-alone products and those that are using thin-client or software-based strategies to provide telecommunication functionality. Such a level playing field is important both to ensure accessibility across the different technologies and to preserve and expand the variety of hardware and software options in the market.

IS SOFTWARE INCLUDED IN SECTION 255?

(Extended Comment B)

We differ strongly from the proposed conclusion of the FCC, that software manufacturers should not be considered subject to Section 255 of the Telecommunication Act.

RECOMMENDATION:

> Software products that are specifically designed to carry out telecommunication functions should be covered under Section 255, as should their manufacturers.

BACKGROUND AND RATIONALE: Much of the discussion around this topic is carried out using past and current definitions of software and hardware. In the future, it is likely that there will be few if any devices that are used only for telecommunication. It is likely that most all devices used for telecommunication will also be used to provide information services.

Moreover, AND MORE IMPORTANTLY, we are already seeing products on the market that will turn a computer with Internet connectivity into a telephone. This includes the ability to turn mobile pocket devices into telephones. In some cases, these pocket systems will be turned into telephones through the addition of third-party software that is purchased separately from the unit. In other cases, it may be provided as a part of a service that the person contracts for. In still other cases, the software may come installed in a product (in which case, the product would be called a combination phone and pocket computer, etc.).

If software that turns a piece of hardware into a telephone, and which provides all of the interface for this telephone, is not covered, the FCC will created an uneven playing field. Different companies selling products that provide the same capability (making telephone calls) will have different coverage under Section 255.

For example, consider a hardware phone and a “software phone” (a phone which appears on the screen of a computer when you load a program onto the computer).

Both of these products provide the functionality of the phone as well as its human interface. The hardware phone would be covered by Section 255. The software phone currently would not be. The major difference between the two is that one is implemented in software and one in hardware -- a difference that will increasingly be moot as software and electronic products progress. In fact, we are increasingly finding hardware functions being taken over by software implementations. This natural migration should not constitute a way to migrate or evolve out from under Section 255.

In this example the computer does provide a mike and speaker for the software without which the software phone cannot function. However, the bulk of all of the functionality, the behavior of the human interface and the accessibility is contained within the software. If that software is

not designed to be accessible, there is absolutely nothing that can be done by the computer to make it so.

WHAT IS THE HARM IN CONSIDERING SOFTWARE UNDER SECTION 255?

Two arguments might be posited for not covering software under Section 255. First is that software doesn't seem to fall under the concept of "equipment," which we think of as being something we would touch. Software has now advanced to the point that it can simulate hardware sufficiently that it presents images that look like real hardware objects, behaves like the real objects, and carries out the exact same functions as the real objects. In fact, with some technologies currently being explored, an individual would actually be able to feel this virtual object and dial it with their eyes closed.

Given this fact, it is not clear that the modem definition of Customer Premises Equipment should not include "virtual" equipment. That is, a telephone that is created by software control of other objects should be considered CPE.

It should also be remembered that in most modem phones, the operation of the phone and its interface is entirely controlled through software. Thus, it is the software that largely or completely determines the interface in both cases. When software is bundled with hardware, it is covered. When it is separate, should it not also be covered?

A second point is made that there is software in various locations throughout the system, especially when the software and hardware are not bundled together. How can a software manufacturer ensure accessibility when they do not control the hardware it is played on? The answer is that they cannot control some aspects of the hardware. However, should that release them from making sure that the aspects oft he human interface that they do have control of are designed in a fashion that supports accessibility? (Especially since the majority of all cross-disability accessibility is a function of the software and not the hardware.)

Again, we would return to the intent of the drafters of the Act. If everyone in a company were making their phone calls using telephones that popped up as an image on a computer screen, would the drafters have considered that to be a telephone that should be as accessible as readily achievable?

SEAMLESS INTEGRATION OF FUTURE TECHNOLOGIES:

Telecommunication Covered Whether CPE or Elsewhere in Telecommunication System (Including Services) (Extended Comment C)

We concur with the FCC's position that telecommunication components should be covered in a seamless and consistent fashion, whether the component is CPE or located elsewhere in the telecommunication system.

We further concur with the FCC's position to treat telecommunication services consistently with telecommunication equipment and CPE.

Background and Rationale

In the telecommunication system of the future, there will be a seamless integration of CPE, telecommunication equipment, and telecommunication services. Using thin-client and network computer approaches, more and more functions currently thought of as existing in CPE will be transferred to telecommunication equipment and service providers. The result will be smaller, lighter, and more highly functional telecommunication and enhanced telecommunication devices.

Most importantly, consumers purchasing devices will not be able to tell where in the system various functions are taking place. There may in fact be several products sitting on the same shelf that advertise the same or similar functionality, yet the devices and service providers that support them may distribute the functionality for the devices in very different ways. Unless a consistent set of rules is applied across the three areas (CPE, telecommunication equipment and telecommunication services), it will be impossible for the consumer to determine what 'type of a product they are choosing, and what the implications for accessibility under Section 255 (and any other type of telecommunication regulations) would be. It would be similarly difficult and confusing for the FCC and even manufacturers to untangle exactly which regulations would apply to which devices if different regulations were applied.

DEFINITION OF MANUFACTURER

(Extended Comment D)

The FCC currently proposes to use the Access Board's definition of "manufacturer" -- as "an entity that sells to the public or to vendors that sell to the public; a final assembler."

We differ with this approach, as noted in past comments. While this definition was sufficient in the past, and is for most products today, it will not hold up with the new strategies that are being used to define products, and with manufacturing, marketing, and selling strategies that are emerging, particular in the telecommunication area.

RECOMMENDATION

It is therefore recommended that the definition of "manufacturer" be:

> "Any company developing a product, component, or sub-component that is designed specifically for, or marketed as, a product (or component) for use in telecommunication."

(Products not used for telecommunication -- and those portions of a product that are not used for telecommunication -- would not be subject to Section 255, nor would standard components that are used in the product but which are not marketed as being for telecommunication.)

BACKGROUND AND RATIONALE

We have now reached a stage where products used to make phone calls can vary greatly in form and function. Also, the company that "finally assembles" the telecommunication product may be the user themselves, or a small local service firm.

If subcomponent manufacturers are not required to make their components accessible, it is very easy for the subcomponent assemblers (the final assemblers) to claim that it is not readily achievable for them to create accessible telecommunication products, since the components they have to work with do not support accessibility. While one would expect market forces to cause someone to create accessible components, it is often the case that key components are manufactured by only one or a small number of manufacturers.

An example of one place where this has occurred is the ATM industry. When banks are asked why they do not have any accessible ATMs, they claim (quite correctly) that there are only three or four (depending on how you count them) manufacturers of ATMs, and that none of them make accessible ATMs. When the ATM manufacturers are asked why none of their ATMs are accessible, they reply that none of the banks asked for the ATMs to be accessible. Evidently, banks had inquired as to whether ATMs were accessible. However, they had not requested (or

required) accessibility as a key item in the list of specifications they were seeking in their next purchase of ATMs.

In the telecommunication area, we are seeing products being marketed and sold as being "capable" of functions that they cannot perform at the time of sale. Purchase of an additional component or software from a third party is needed to activate or enable this capability in the device (for example, a Palm-Sized PC). Such products are often called "XXX-ready," indicating that they have been designed to support XXX capability.

A separate company then creates the pop-in component or software, which adds the functionality to the device, causing it to become an XXX product (such as adding in paging or telephone capability).

As it is proposed now, a company that sold the product with the module or software that performs the telecommunications function already installed would have to ensure that the product complied with Section 255.

A company that sold a "telecommunication-ready" product (that did not yet include the module or software) would not have to comply with Section 255 -- nor would the company that sold the module or software that popped into the product to enable it to become a telecommunication device.

Even when the "telecommunication-ready" device and the telecommunication module or software were assembled by a third vendor and offered for sale, Section 255 would still be thwarted. The customer who purchased such a device would be buying a device that carried out telecommunication, but it would not be accessible. In addition, the third vendor could claim that it was not "readily achievable" for them to create an accessible product, since they were simply assembling the "telecommunication-ready" device with the "telecommunication module or software" and had no control over the accessibility of either of these components.

In the future, we are likely to see more and more cross-integration of communication and information technologies. Many (though not all) who must pull from their pockets or bag a cellular phone, a pager, a Pocket PC, and a dictation unit would rather have a compact device that carried out all of these functions if it had a straightforward interface. Some such devices have been marketed in the past but have not gone over well because of their extreme bulk. In the future, however, it will be possible to have all of these functions in a device the size of a thin deck of cards, and which can be operated by voice and has an extremely straightforward interface. But will it be covered under Section 255, or usable by people with disabilities? As companies standardize on these types of communication products, with their multiple modes of communication (speech, voice messaging, paging, e-mail), will people with disabilities be able to participate using those communication systems (and thus participate in those positions in the workforce)?

CHAIN OF ACCESSIBILITY

(Extended Comment E)

Accessibility cannot be obtained if one only specifies accessibility at the end point. Like a chain, each member of the process that produces the telecommunication product, system, or service must exercise due diligence, or the end producer or deliverer of the product will not find it readily achievable to produce or deliver an accessible product.

RECOMMENDATION

> That all providers of components, subsystems and software that are intended for use in telecommunication products (advertised and promoted as being for use in telecommunication products or systems) must exercise due diligence with regard to Section 255.

BACKGROUND AND RATIONALE

In order for someone to make a phone call, all of the components must work, or there is no phone call. In a similar manner, each member in the chain that produces a telecommunication product must exhibit due diligence. Otherwise, the other links can claim (rightfully) that accessibility is not readily achievable. Putting all of the responsibility on the last link is not practical. Often, the last link has little or no effect on the previous links. And no one is responsible for whole chain. Increasingly, the chain assembler will be the user, or a local service provider, not the manufacturer. (See also Extended Comment D, "Definition of Manufacturer.")

Each member of the chain should be required to do those things that must be done at their stage (e.g., the hardware manufacturer would have to provide the connector for interconnection, and the software vendor would need to provide the flexible interface, etc.). They should be encouraged (but not required) to also do what is readily achievable to compensate for other links in the chain that might be weak.

DIRECT CONTROL

(Extended Comment F)

The FCC appears to be leaning toward language indicating that manufacturers would only be responsible for the accessibility of those aspects of their product design over which they have direct control. We partially concur with this position, but suggest the following slight modification to include other actions that are also under their direct control (and which would affect aspects that are not under their direct control).

RECOMMENDATION

> The manufacturer is responsible both for those aspects over which they have direct control, and for encouraging the accessibility of those aspects over which they do not have direct control but which they can affect. (For example, by stating and showing a purchasing preference for accessible components, inclusion of accessibility specifications in the list of priority specifications provided to component suppliers, or by providing specification to users or installers of their products regarding the proper use or installation of their products to maintain accessibility.)

BACKGROUND AND RATIONALE

A manufacturer should not be able to claim that it was not readily achievable to construct an accessible telecommunication product because the components were not designed properly to allow them to do so if they did not provide specifications to the suppliers indicating how they would like to have the subcomponents perform so that the manufacturer could design an accessible phone.

A manufacturer should not be able to claim that it was not readily achievable to build a phone out of particular components if they did not indicate to their suppliers that they would show a preference in their purchasing for components that had characteristics that would allow the manufacturer to create accessible phones (and thus provide incentive to the subcomponent manufacturers to create accessible components).

A manufacturer should not be able to claim that they are not responsible because their product was installed in a fashion that defeated accessibility if the installation instructions did not include details on how to install the product so that it would be accessible.

DEFINITION OF "SPECIAL CPE" AND "PERIPHERAL DEVICES"

(Extended Comment G)

In the NPRM, the FCC stated an intention to include only things that are used specifically to access telecommunications, and not devices such as hearing aids that are used more generally.

In examining this issue, we must look at three options:

1. Hearing aids, prosthetics, orthotics, wheelchairs and other devices used by an individual on a daily basis are considered within the category of "devices commonly used by people with disabilities to access and use telecommunication."

2. The same group of devices is considered part of the individual as they approach the products.

3. This group of devices is considered to be neither of the above, and do not need to be considered at all by manufacturers when designing their products -- that is, the manufacturers do not have to take these devices into account at all.

If either Option 1 or Option 2 is used, it makes no different to the manufacturer. With Option 1, the manufacturer needs to take these devices into account and be compatible with them under the compatibility provisions. If Option 2 is used, then the manufacturer needs to take these devices into account when considering direct usability by the individual.

If Option 3 is considered, then we end up with an unduly difficult design problem. It makes little sense to specify that manufacturers are supposed to create products that are accessible to and usable by individuals with disabilities without including the adaptations and devices that enhance the ability of these individuals and make it more likely that they will be able to operate the devices (and reduces the extent to which the manufacturers' products must be designed and modified to reach the individual).

We also doubt that Congress meant to have the prosthetics, orthotics, and assistive technologies that an individual has removed from them before a determination was made as to whether it was readily achievable to make the product usable by the individual.

If we reject Option 3, then we do not see that it would not make much difference to the manufacturers as to whether these devices are considered as being part of the individual or part of the devices that they use to operate a product. For simplicity of thought, we would therefore suggest that devices that a person keeps with them at almost all times (prosthetics, orthotics, hearing aids, wheelchairs) be considered as part of the individual, and that assistive technologies (such as neckloops, special amplifiers, etc.) that the individual employs only in the operation of certain devices be considered "existing peripheral devices or specialized customer premises equipment commonly used by individuals with disabilities to achieve access."

CALCULATION OF READILY ACHIEVABLE EXPENSES

(Extended Comment H)

RECOMMENDATION

That when expenses are being calculated in the determination of ready achievability, the expenses be calculated as a percentage of overall expenses rather than as an absolute number of dollars.

BACKGROUND AND RATIONALE

In larger companies, the sheer scale of the operations can make any accommodation, no matter how reasonable, seem enormously expensive. For example, the cost to a company to add a $1 .OO component to a product that has sales in the million of units of will be in the millions of dollars. However, if the product sells for $1,000, the cost of the part would only be 1/10th of 1% of the sales cost (or perhaps 1/2% of the parts cost). The same principle would apply to any costs associated with accessibility. An absolute number of dollars can easily get very large if the number of units sold is large, even when the percentage of total cost is quite low.

The question comes down to what percentage increase in the cost of a product is reasonable enough to be "readily achievable." Clearly, adding a $1 .00 part to a product with a manufacturer cost of $15.00 is a substantial increase in manufacturer costs, and may not be readily achievable. However, the same $1 .00 part added to a $10,000 ATM would be readily achievable. If the cost is small, or the company can recover the costs by raising the price, the cost increase may be viewed as reasonable. However, it does raises the issue of loss of sales due to either:

a) shift of customers to a competitor

or

b) customers do not buy any product.

If all companies are required to address accessibility, then A should not be a factor. Unless the company does not do a good job of incorporating the accessibility efficiently, their competitors' products should have the approximate same cost delta.

Factor B, however, does still remain. The question is whether the public as a whole will buy fewer telecommunication products if they are, say,5% more expensive? For example, do customers in states that have a 5% sales tax buy fewer telecommunication products than customers in states that have no sales tax? How about 1% or 2%?